FEEDING AMERICA

MAP THE MEAL GAP

Map the Meal Gap 2019

A Report on County and Congressional District Food Insecurity and County Food Cost in the United States in 2017

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Made possible with the generous support of the Howard G. Buffett Foundation, Founding Sponsor of the *Map the Meal Gap* series

Foreword

It is hard to believe that in the United States, 40 million Americans may not know where they will find their next meal. *Map the Meal Gap* provides local estimates of food insecurity and food cost across the nation and brings to light the challenges faced by so many to simply put food on the table.

Map the Meal Gap's strength lies in its ability to initiate conversations, insights and actions across a broad spectrum of hunger-relief partners. Now in its ninth year, the study impacts many aspects of the hunger-relief landscape and is the foundation for evidence-based initiatives, strategies and communications.

Feeding America uses *Map the Meal Gap* to understand and approach the hunger crisis at the local level. It is an invaluable resource that informs our strategic planning and goal-setting as we seek to help households live free from hunger. Additionally, legislators, hunger-relief partners, academics and community organizations use its findings to develop policies, research and programs to address hunger and its related social and economic issues.

As we work to end hunger in America, our path is clear. Together, building on *Map the Meal Gap* as our foundation, we will we continue to develop, test and expand creative hunger-relief initiatives to address domestic hunger and bring more food to people in need.

Feeding America is deeply grateful to The Howard G. Buffett Foundation as Founding Sponsor of *Map the Meal Gap*. On behalf of our network, hunger-relief partners and, most importantly, the people we serve, thank you for your visionary leadership.

Claire Babineaux-Fontenot
Chief Executive Officer
Feeding America

Acknowledgements & Credits

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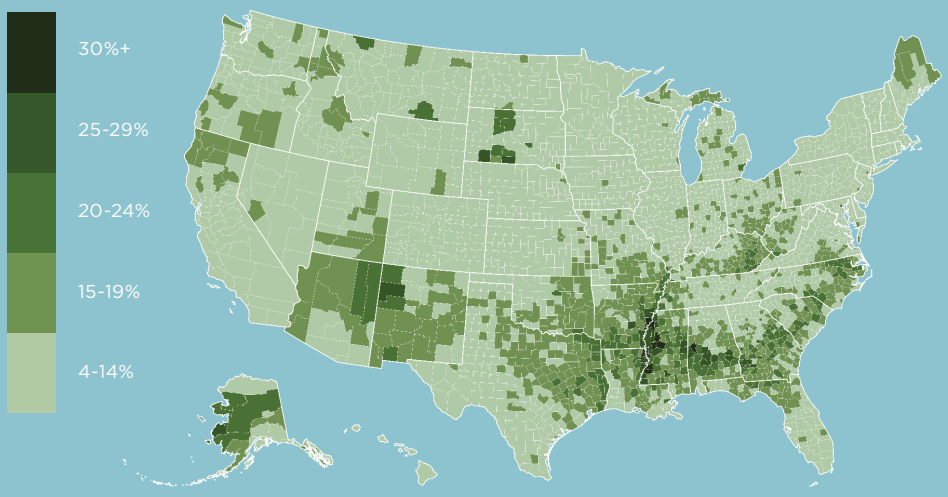
Executive Summary

MAP THE MEAL GAP

Although the economy is improving, millions of Americans continue to struggle. The USDA estimates that 40 million people, including more than 12 million children, in the United States are food insecure as of 2017.[1] That means 1 in 8 individuals (13%) and 1 in 6 children (17%) live in households without consistent access to adequate food. The prevalence of food insecurity decreased slightly from 2016, but rates remain higher than before the Great Recession in 2007.

For the ninth consecutive year, Feeding America has conducted the *Map the Meal Gap* study to improve our understanding of how food insecurity and food costs vary at the local level. By better understanding variations in local need, communities can develop more targeted strategies to reach people struggling with hunger.

Prevalence of Food Insecurity by County, 2017



3-36%
range of population that is food insecure across US counties. Food insecurity exists everywhere.

3/10
people who are food insecure are unlikely to qualify for most federal nutrition programs.

$21 billion
needed by individuals at risk of hunger to purchase just enough food to meet their needs.

$3.02
is what a person who is food secure is likely to spend per meal. Meal costs are nearly twice this amount in some counties.

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Key Findings

County and Congressional District Findings

Every U.S. county and congressional district is home to people who face hunger. Estimated rates of county food insecurity range from 3% to 36% for the overall population. Food insecurity among congressional districts spans a similar range, but children across both geographies are more likely to live in a food-insecure household. Mississippi is home to the highest county rate and Michigan is home to the highest district rate in the country, but no community is free of food insecurity.

Range of County Food Insecurity Rates

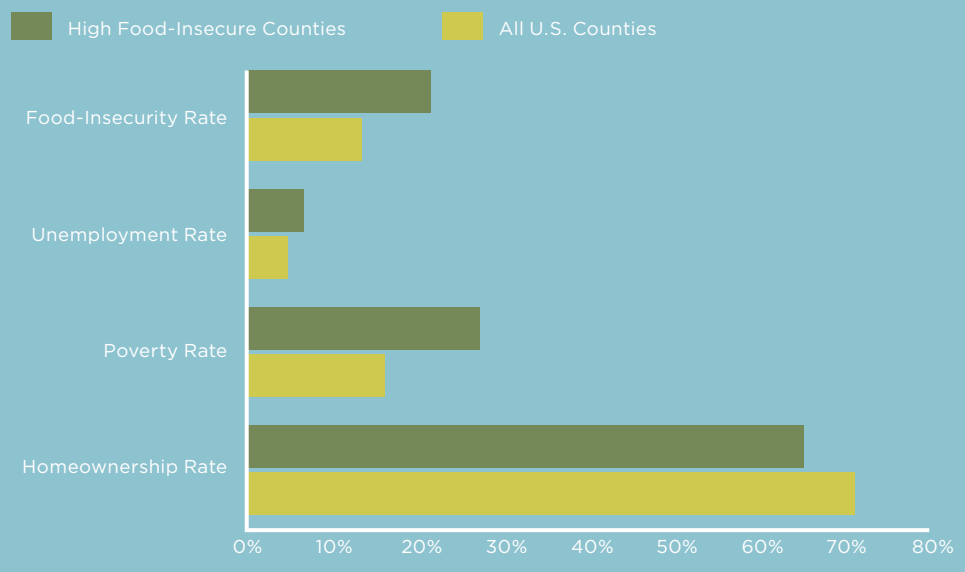
Highest Rates of Food Insecurity

Counties with the highest rates of food insecurity—those in the top 10% of all counties—tend to have similarly poor economic indicators: higher rates of unemployment[2] and poverty,[3] and lower homeownership[4] and median income[5] as compared with all counties.

High Food Insecurity counties are the counties with the top 10% of food-insecurity rates.

The majority (66%) of counties with the highest rates of food insecurity also experience persistent poverty, which the USDA defines as at least 20% of the population living in poverty for more than 30 years.[6] This confluence of complex challenges underscores the need for solutions that can effectively address both the immediate and long-term needs of food-insecure families living in these communities.

Average Economic Indicators by County Type



Largest Numbers of Food Insecure People

While the prevalence of food insecurity is an important indicator of need, **counties with large populations and comparatively low rates of food insecurity are home to some of the largest absolute numbers of food-insecure people.** For example, Los Angeles County, California has a relatively low rate of food insecurity (11%) but is home to an estimated 1.1 million food-insecure individuals, including greater than 410,000 children at risk of hunger. To effectively address food insecurity and end hunger in America, it is important to consider both the size of the population in need as well as how widespread that need may be.

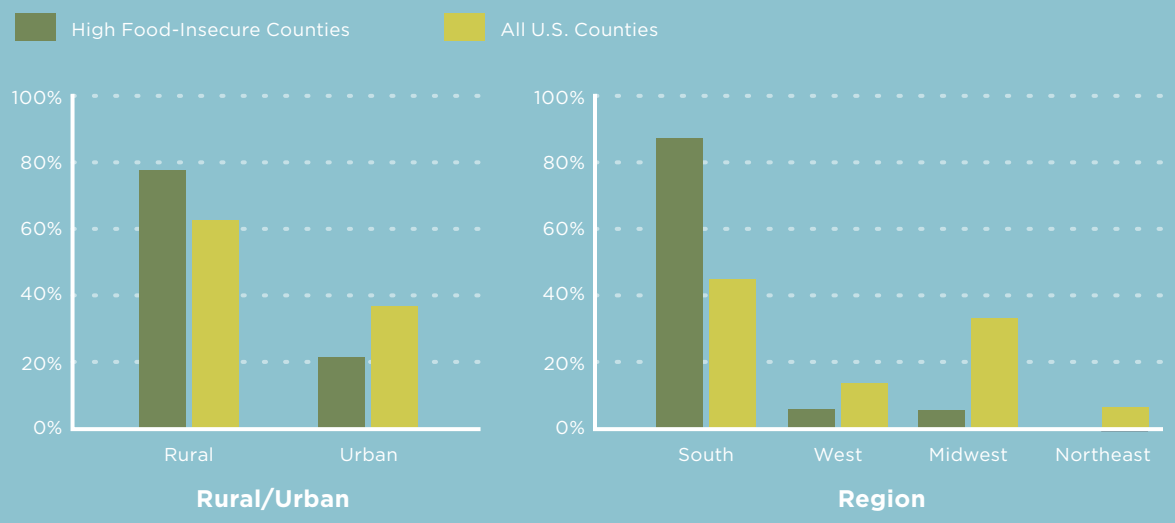
Los Angeles county is home to more than

1 million

food-insecure individuals.

Rural and Regional Demographics of Food Insecurity

Rural (nonmetropolitan) counties make up 63% of all U.S. counties but 78% of counties with the highest rates of food insecurity. Regionally, the highest average rates of county food insecurity are found in the South, which includes 87% of counties with the highest rates of food insecurity and also has the widest variation in county food insecurity. The lowest average food insecurity rates are located in the Northeast.



Highest Food-Insecure Counties are

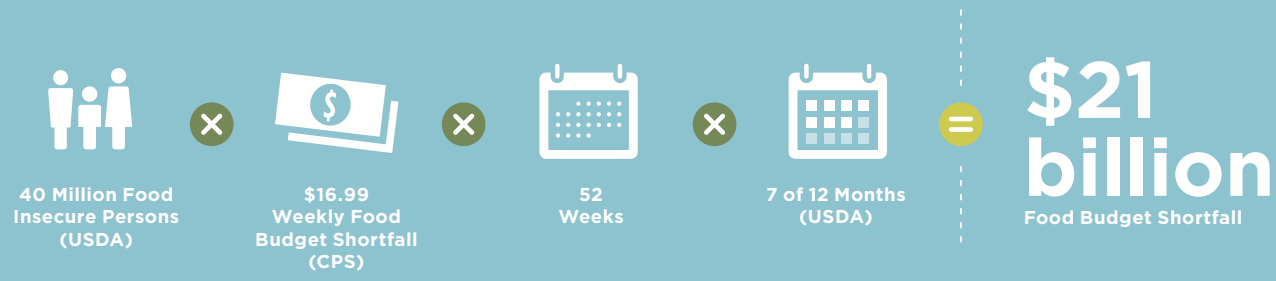
78% rural

87% in the South

Many counties located outside major metropolitan areas and in the South are home to large communities of color living at elevated risk of food insecurity. These communities face persistently high rates of unemployment and poverty. The population of Jefferson County, Mississippi, for example, is 86% African American, faces an unemployment rate that is three times the national county average (15% versus 5%), and struggles with persistent poverty at a rate that is almost three times that among all counties (47% versus 16%). As a result, the local rate of food insecurity is the highest in the nation (36%). County-level analysis also helps illuminate the obstacles faced by reservation communities,[7,8] such as Apache County, Arizona, which includes parts of the Navajo Nation, Zuni and Fort Apache reservations. A persistent-poverty county with poverty (36%) more than twice the national county average and food insecurity (24%) close to twice the national county average, this example underscores the deep and pervasive nature of the systemic challenges that many minority communities face.

Food Budget Shortfall and Average Meal Costs

The total need for food among everyone estimated to be food insecure in 2017 stands at a staggering $20.6 billion. This resource gap or national food budget shortfall is an annualized approximation of need as reported on the Current Population Survey (CPS) by people who are food insecure. It reflects the average additional amount of money per week that a food-insecure person is likely to spend on just enough food to meet their needs. After accounting for inflation, the weekly shortfall ($16.99) decreased for the second year in a row in 2017 after rising for four consecutive years.



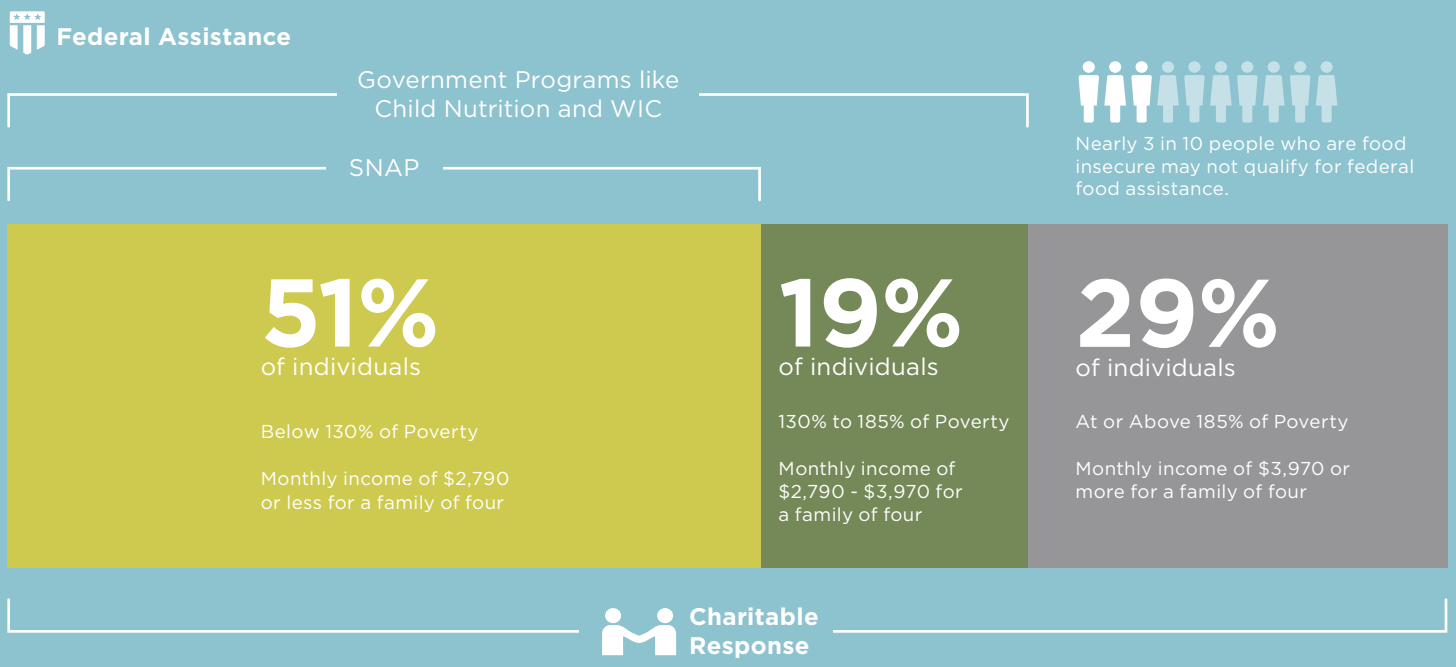
However, with **average meal costs nearly twice as high as the national average** ($3.02) in some areas like New York County, the additional burden of high food prices can make it difficult for food-insecure households to make ends meet. This is especially true if they also struggle to afford housing, utilities, transportation, and other basic necessities.

Implications

Map the Meal Gap focuses on equipping communities, service providers and policymakers with data and analytical tools to help them understand the prevalence and dynamics of food insecurity at the local level so they may better respond to the need.

Federal nutrition assistance programs, such as the Supplemental Nutrition Assistance Program (SNAP), serve as the first line of defense against hunger. However, **not everyone who is food insecure qualifies for these federal programs;** nationally, nearly three in 10 (29%) individuals estimated to be food insecure and whose incomes are known live in households unlikely to qualify for most federal assistance.[9] Given the variation in food insecurity and state income and asset limits for certain programs, data from *Map the Meal Gap* indicate that the share of food-insecure individuals not eligible for public food assistance may even be as high as 80% in some places, such as Daggett County, Utah. As a result, the charitable sector may be the primary source of food for many individuals and families at risk of hunger across the country. Given the scope and scale of the issue, however, it is important that policymakers protect and strengthen the existing safety net of public food programs as well as invest in public-private partnerships in order to reduce food insecurity and end hunger in America.

Share of Food-Insecure Individuals by Income Thresholds[9]



Map the Meal Gap Methodology

To accurately estimate the number of people who may be food insecure in every U.S. county and congressional district, *Map the Meal Gap* uses publicly available state and local data from the U.S. Census Bureau and Bureau of Labor Statistics on factors that research has shown to contribute to food insecurity. These factors include unemployment and poverty, as well as other demographic and household characteristics. In addition to measuring how pervasive the need is, the study also estimates the cost of a meal, and the amount of need among people who are food insecure, using local data from Nielsen and national survey data from the Census Bureau. More information is available online in our technical brief.

Findings from *Map the Meal Gap* are presented in a series of briefs that can be explored individually or in partnership. The series contains four modules, including this executive summary, child food insecurity, food price variation and health implications, to illustrate our findings and demonstrate how food insecurity adds context and relates to other challenges for families.

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Child Food Insecurity

MAP THE MEAL GAP

Food insecurity has the potential to be harmful to individuals of any age, but it can be especially devastating to children. The USDA estimates that more than 12 million children in the United States live in food-insecure households as of 2017.[1] That means that 1 in 6 children (17%) may not have consistent access to enough food for an active, healthy life.

For the ninth consecutive year, Feeding America has conducted the *Map the Meal Gap* study to improve our understanding of how food insecurity and food costs vary at the local level. By better understanding variations in local need, communities can develop more targeted strategies to reach people struggling with hunger. Included here are findings related to food insecurity among children, one of four related topics that make up the *Map the Meal Gap 2019* report briefs.

12.5 million

-or-

1/6

children are at risk of hunger.

50

states and D.C. are home to food–insecure children.

84%

of counties with high child food insecurity are rural.

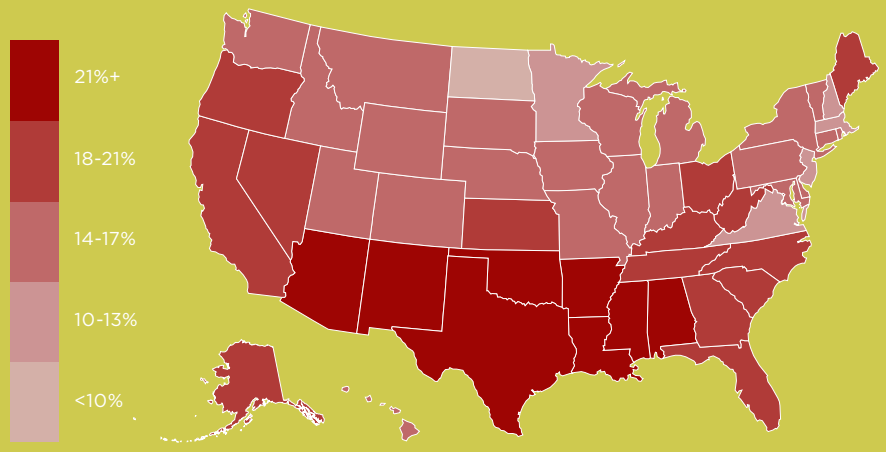
750,000

children may be food insecure in Los Angeles and New York City.

Key Findings

Child Food Insecurity Among States and Congressional Districts

In all 50 states and Washington, D.C., the estimated rate of child food insecurity is higher than the rate of overall food insecurity. Although households with children have slightly larger median incomes on average, they may also experience greater budgetary constraints, due to larger household sizes and the fact that some household members are dependent on caregivers.[2] Whereas overall food insecurity at the state level ranges from 7% in North Dakota to 19% in Mississippi, rates among children range from 10% in North Dakota to 24% in New Mexico. Among congressional districts, rates of child food insecurity span a similar range—a low of 9% (nearly 20,000 children) in affluent districts like Virginia's 10th, bordering Washington, D.C., to a high of 30% (nearly 63,000 children) in New York's 15th, located entirely in the Bronx of New York City.



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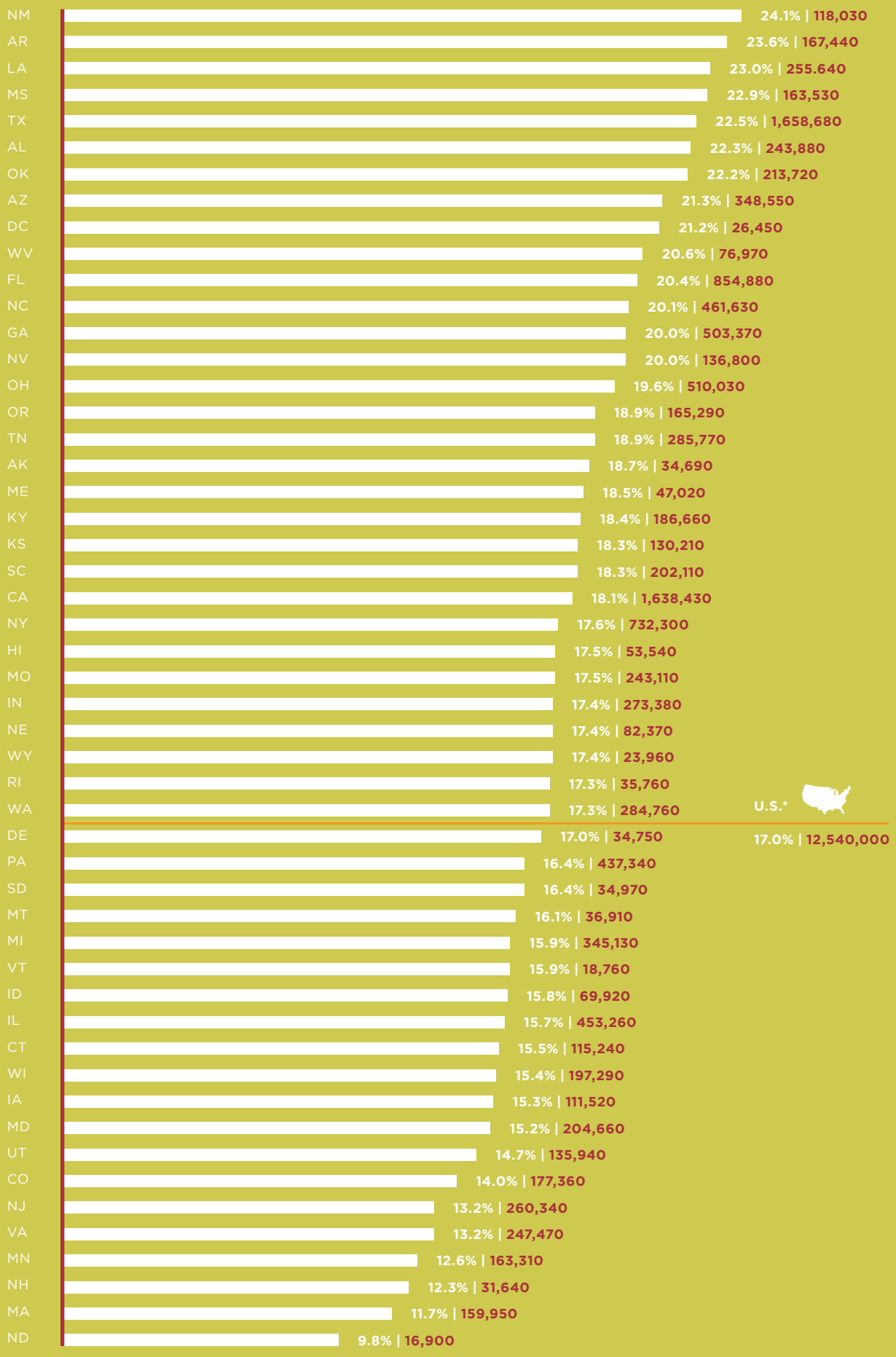
Child Food Insecurity Rates by State



* USDA, 2018

Child Food Insecurity Among Counties

Just as every state is home to children at risk of hunger, no county is free of child food insecurity. Rates range from 6% in Slope County, North Dakota to 40% in East Carroll Parish, Louisiana. The variation in rates of child food insecurity shows that need is more pervasive in specific communities. Among the 325 counties in the top 10% of counties with the highest rates of child food insecurity, an estimated 27% of children live in food-insecure homes, compared to 18% across all counties when weighted by population. Counties with the highest rates of child food insecurity have notably higher unemployment and poverty rates, and lower median incomes.

High Child Food Insecurity counties are the counties with the top 10% of child food-insecurity rates.

27% of children are food insecure

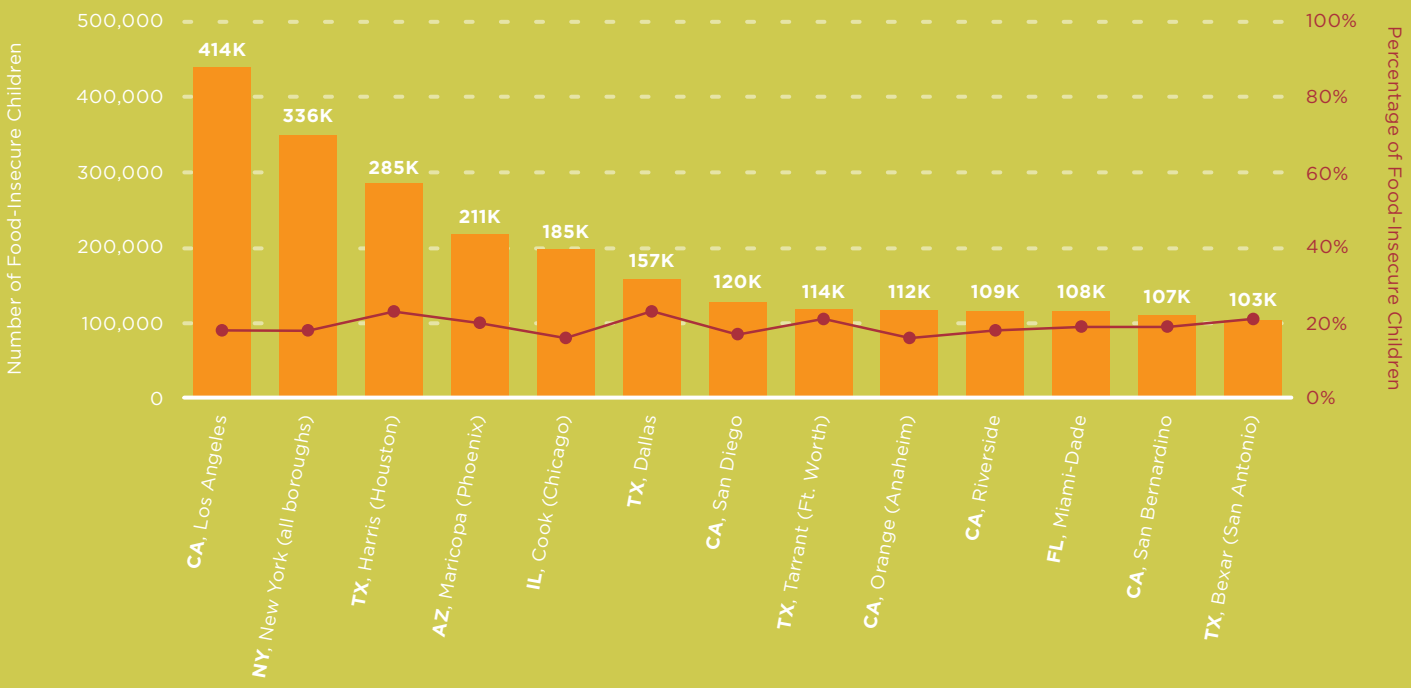
Higher unemployment

Higher poverty

Lower median income

Although the child food-insecurity rate is one important indicator of need, even counties with more modest rates may still be home to large numbers of children whose families are food insecure. For example, the counties encompassing Los Angeles and New York City have rates of child food insecurity (18% and 19%, respectively) close to the national county average (18%). However, there is high need in both areas: greater than 410,000 food-insecure children live in Los Angeles County and nearly 340,000 food-insecure children live in the counties encompassing the five boroughs of New York City. Because they are so densely populated, urban counties in major metropolitan areas may have elevated levels of need despite relatively low rates of child food insecurity. **Whether a county is urban or rural, each community faces unique challenges.** Effective solutions to child food insecurity require addressing the immediate food needs of individual households as well as the underlying economic factors contributing to local food insecurity.

Counties with more than 100,000 Food-Insecure Children



Implications of Child Food Insecurity

The consequences and costs of food insecurity for all ages make addressing the issue an economic and social imperative. In particular, inadequate nutrition can permanently alter children's brain architecture and stunt their intellectual capacity, affecting children's learning, social interaction and productivity.

Health, Behavior and Education

There is a broad base of literature illustrating links between food insecurity and poor child health and behavioral outcomes at every age. For example, food-insecure women are more likely to experience birth complications than food-secure women.[3] One indicator of child and maternal health is low birthweight among infants,[4] which is more common among counties with the highest rates of child food insecurity than across all counties (10% versus 8%). Furthermore, children struggling with food insecurity may be at greater risk for stunted development,[5] anemia and asthma,[6,7] oral health problems[8] and hospitalization.[9] Overall, food insecurity is linked with poorer physical quality of life, which may prevent children from fully engaging in daily activities.[10] At school, food-insecure children are at increased risk of falling behind their food-secure peers both academically and socially; food insecurity is linked to lower reading and mathematics[11] test scores, and they may be more likely to exhibit behavioral problems,[12] including hyperactivity, aggression[13] and anxiety.[14]

- ↑ **Food insecurity**
- ↓ **Birthweight**
- ↓ **Developmental milestones**
- ↓ **Academic and social performance**

Policy and Programs

While charitable assistance plays a critical role in helping families meet their food needs, federal nutrition programs are the first line of defense against hunger.

Federal Nutrition Programs

19 million children[15]
SNAP

3.5 million children[16]
Government Programs like Child Nutrition and WIC

Federal School Nutrition Programs[17]

22 million children
National School Lunch Program

12.5 million children
School Breakfast Program

4 million children
Summer Food Service Program + Seamless Summer Option

Free and reduced-price lunch

Some families in need of public support, however, face challenges maintaining consistent enrollment while others may not even qualify for federal assistance. **One in five food-insecure children lives in a home that is likely ineligible for these important programs, underscoring the critical role of both the public and private sector in addressing child food insecurity.**[18] Together, these programs weave a comprehensive nutritional safety net that reaches children where they live, learn and play. Through collaborative efforts between the Feeding America network of food banks and partner agencies, policymakers, business leaders, community activists, and concerned citizens, every child in America could receive the nutrition they need.

Map the Meal Gap Methodology

To estimate local food insecurity among children, *Map the Meal Gap* uses methodology that mirrors the approach used for the overall population. First, Feeding America identifies the relationship between food insecurity and associated variables at the state level using data that is mostly restricted to households with children. Then, local data on these variables for every county and congressional district is analyzed to estimate the share of the child population living in food-insecure households. Finally, local income data is used to estimate the percentage of these children in households that are either eligible or ineligible to receive free or reduced-price meals and participate in other federal child nutrition programs. Full methodology details are available online in the technical brief. *Map the Meal Gap 2019* also features report briefs on other topics, including an executive summary, an overview of food price variations, and an analysis of health implications.

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Food Price Variation

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The USDA estimates that 40 million people, including more than 12 million children, in the United States are food insecure as of 2017. This means that 1 in 8 individuals (13%) and 1 in 6 children (17%) live in households without consistent access to adequate food. The experience of food insecurity depends on individual circumstances, local economies, and broader social and economic forces. **Food prices in particular represent an important component of cost-of-living that affects households' ability to afford food.** In fact, the high relative price of food contributed to the persistently high rate of national food insecurity in the years following the Great Recession.[1] Food prices began edging upward again in 2017 and 2018, and are expected to continue rising in 2019.[2]

For the ninth consecutive year, Feeding America has conducted the *Map the Meal Gap* study to improve our understanding of how food insecurity and food costs vary at the local level. This brief focuses on the variation in local food prices and the average cost of a meal, one of four related topics that make up the *Map the Meal Gap 2019* report briefs. **Through the lens of local meal costs, it is possible to see how people already struggling with hunger in communities across the country can find it difficult to afford enough food** to live active, healthy lives.

40 million

-or-

1/8

people are food insecure.

1,352

counties (43%) have meal costs higher than the national average.

$3.02

is the national average meal cost. It is nearly twice this in some counties.

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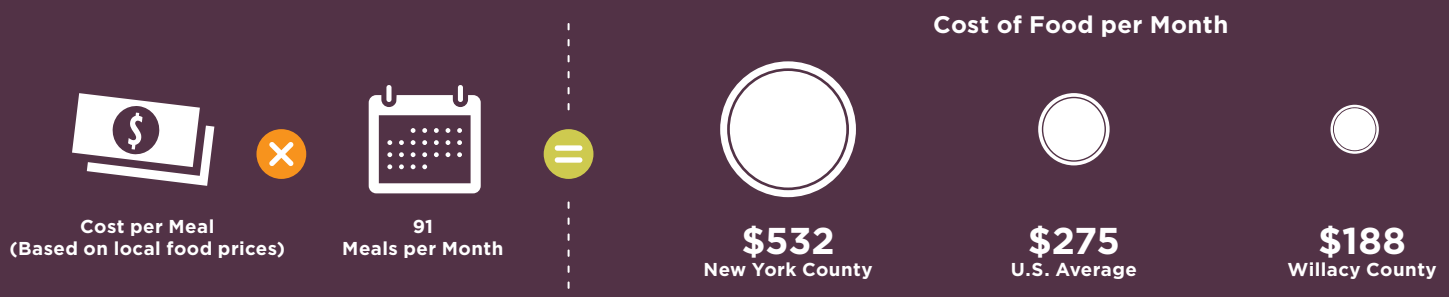
Key Findings

County-Level Food Costs

In 2017, people who were food secure reported spending an average of $3.02 per meal. Although roughly the same as the amount reported in 2016 ($3.00), after accounting for inflation, the 2017 meal cost is slightly lower than the amount reported in 2016 ($3.06 in 2017 dollars). At the local level, meal costs range from $2.07 in Willacy County, Texas to nearly twice the national average in places like New York County (Manhattan) at $5.85. This means that $1 in Willacy purchases 46% more food than the national average, and 183% more than in New York County.

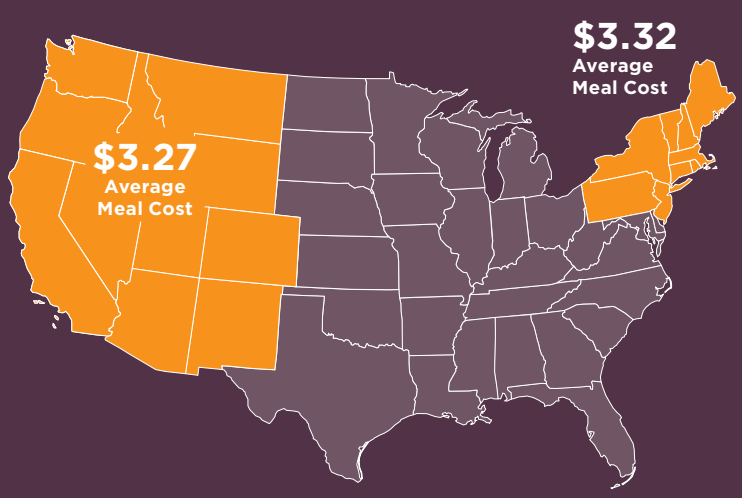
At $3.02 per meal, a person who is food secure is estimated to spend $275 on food per month. In New York County that person is likely to pay $532 for the same amount of food, a grocery bill that would cover enough food for nearly three months in Willacy County. A family of four with two young children is estimated to spend $1,083 per month in New York County to buy the minimum amount of food for a nutritious diet.[3] This is considerably more than the national average ($559) and what that same family would spend in Willacy County ($383).



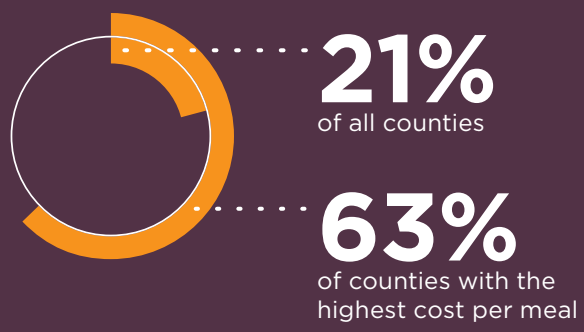
In some cases, the meal cost may be high due in part to the expense of transporting food to a resort area or an island. For example, Nantucket County, Massachusetts is a popular island vacation destination and has an average cost of a meal is $3.70. Aspen in Pitkin County, Colorado and Napa County, California also have a significant tourist presence and higher than average meal costs ($3.61 and $4.19, respectively). While local families in such areas typically have higher-than-average median incomes, these communities are also home to households with lower incomes for whom higher food costs can be particularly challenging.

Counties with High Food Costs

The top 10% of counties with the highest food prices have an average meal cost 20% higher than the national average ($3.63 versus $3.02). While there are pockets of communities across the country with high meal costs, counties with the highest estimated costs are regionally concentrated. The Northeast ($3.32) and West ($3.27) have a disproportionately high share of these high-cost counties. These two regions account for just 21% of all counties, but 63% of counties with the highest cost per meal. The South and Midwest have lower than average meal costs ($2.97 and $2.91, respectively) and relatively few counties in the top 10%.



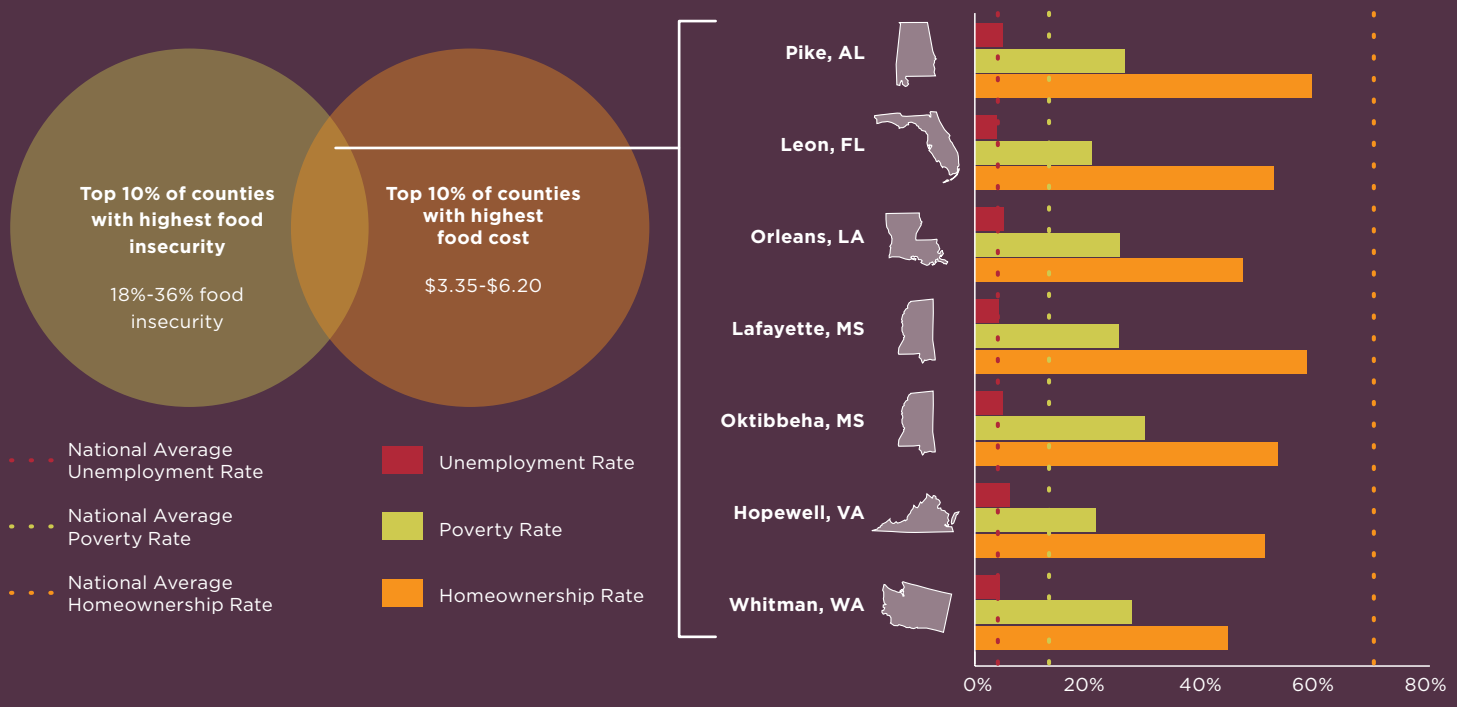
The Northeast and West regions represent:



Most counties with the highest meal costs (56%) are part of populous metropolitan areas. **While these urban counties with high meal costs tend to have lower rates of food insecurity, they are home to large numbers of people who are food insecure.** An estimated 9.2 million people are at risk of hunger in these high-cost urban communities.

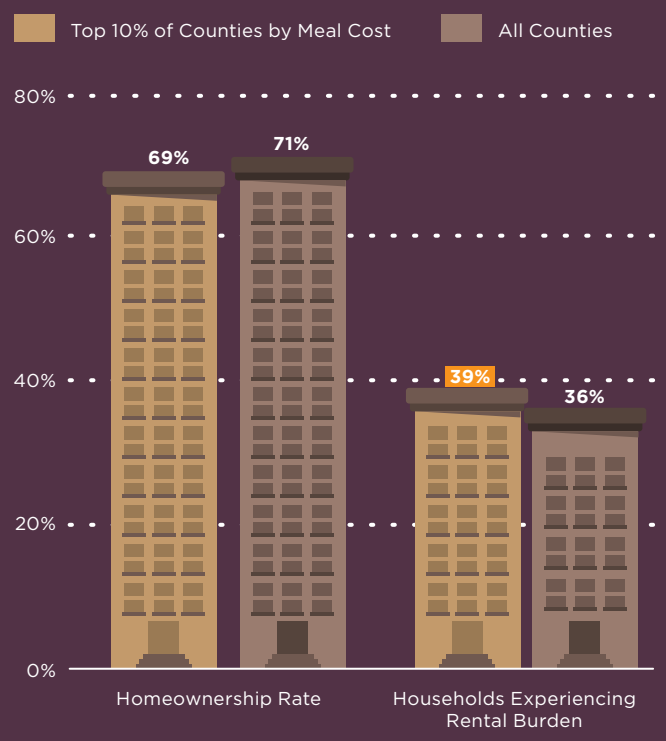
High Food Cost and High Food Insecurity

For a family struggling to afford housing, utilities, transportation and other basic necessities, the additional burden of high food prices can have a significant impact on their household budget. **Seven counties fall into the top 10% for both food insecurity and meal cost.** An average of one in every five individuals in these counties is food insecure, totaling more than 181,000 food-insecure people who live in areas with some of the highest meal costs. Although, these counties may not face the highest food prices in the nation, the average cost per meal of $3.49 is still 16% higher than the national average. Six of the seven counties are located in the South and four have persistent poverty.[4] Four of the seven counties have higher-than-average unemployment rates,[5] and all seven have higher-than-average poverty and low homeownership.[6]



High Food Cost and Housing

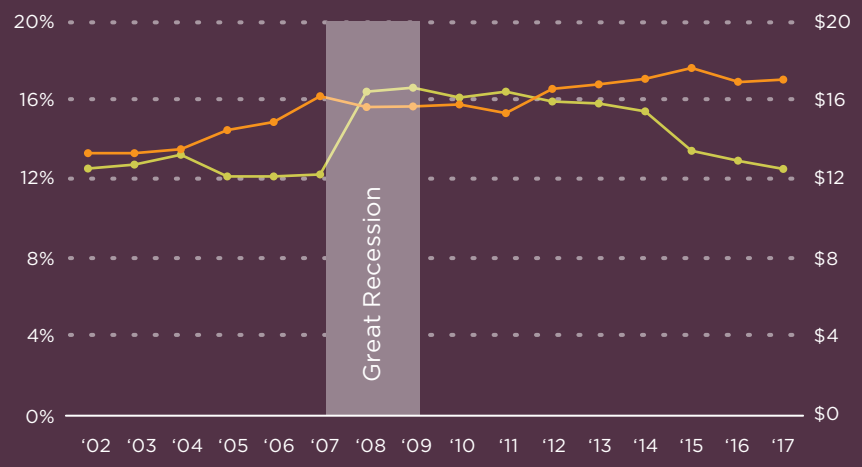
High meal costs can force food-insecure households to make tradeoffs that in turn make it difficult to invest in their long-term economic success. They may even force families to choose between buying food and paying for housing. **Compared to all counties, those with the highest meal costs tend to have lower rates of homeownership, higher rent, and a higher rental burden**—which occurs when a household pays 35% or more of their income on rent.[7]



Implications

Studying local food insecurity in the context of average meal costs illustrates just how much variation there is in both the prevalence of need and the price of food across the country. The cost per meal measure discussed here reflects the average amount of money that someone who is food secure is likely to spend on a single meal. It is also useful to consider reported need among people who are food insecure. An analysis of national survey data suggests that people at risk of hunger in 2017 report needing an additional $16.99 per week on average to buy just enough food to meet their needs. After adjusting for inflation, this food budget shortfall is slightly lower than the $16.90 reported in 2016 ($17.26 in 2017 dollars). **When annualized across the 40 million people estimated to be food insecure, however, the national shortfall stands at nearly $21 billion as of 2017.**

Food Insecurity and Reported Need Still Higher than Before Great Recession



Although trending downward, reported need for food is still higher than before the Great Recession.

$21 billion

national food budget shortfall

When struggling to afford housing, utilities, transportation and other basic necessities, however, the additional burden of high food prices can have a significant impact on a family's budget. **For households at risk of hunger in certain parts of the country, high food prices can make it especially difficult to afford the food they need. This is a reality even for families that receive federal nutrition assistance benefits.**

The Supplemental Nutrition Assistance Program (SNAP), which served 40 million people in 2018, is a key federal program that helps low-income households bolster their food budget[8] and helps children and adults transition out of food insecurity.[9] SNAP benefits, however, are not adjusted for higher cost of living except in Alaska and Hawaii, and even the maximum SNAP benefit falls short of covering the cost of a meal in 99% of U.S. counties.[10] This resource gap can cause families in certain areas to experience higher rates of food insecurity. Recent research suggests that a weekly increase in SNAP benefits of $42 per household would lead to a 62% decline in national food insecurity rates.[11]

Map the Meal Gap Methodology

Map the Meal Gap uses data from the Current Population Survey to calculate a national average meal cost and food budget shortfall among people who are food insecure. These measures estimate the average amount of money that people who are food secure report spending on food, as well as how much more money, on average, a person who is food insecure reports needing to buy just enough food to meet their needs. National estimates are then adjusted for every county and state using local food price data provided by Nielsen and local sales tax data. The analysis is primarily limited to the cost of purchasing a food-secure diet as food-insecure households are assumed to underspend on food due to limited resources. More information about our methodology is available in the full technical brief. *Map the Meal Gap 2019* also features report briefs on other topics, including an executive summary, an overview of child food insecurity, and an analysis of health implications.

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FEEDING AMERICA

2019

Health Implications of Food Insecurity

MAP THE MEAL GAP

Healthy bodies and minds require nutritious meals at every age. Inconsistent access to adequate amounts of nutritious food can have a negative impact on the health of individuals at all ages. The USDA estimates that as of 2017, 40 million people, including more than 12 million children, in the United States are food insecure. That means 1 in 8 individuals (13%) and 1 in 6 children (17%) live in homes without consistent access to adequate food for everyone to live healthy, active lives. This is a national problem with local health implications for individuals and communities across the country.

An analysis of county data on health indicators and food insecurity shows that **communities with the highest rates of food insecurity face a higher prevalence for diseases and other measures that are tied to health.** For the ninth consecutive year, Feeding America has conducted the *Map the Meal Gap* study to estimate the prevalence of food insecurity for every county and congressional district in the United States. To better understand the relationship between food insecurity and poor health outcomes, the following analysis considers food insecurity in the context of health, one of four related topics that make up the *Map the Meal Gap 2019* report briefs.

40 million

-or-

1/8

people are food insecure.

In counties with high food insecurity:

1/8

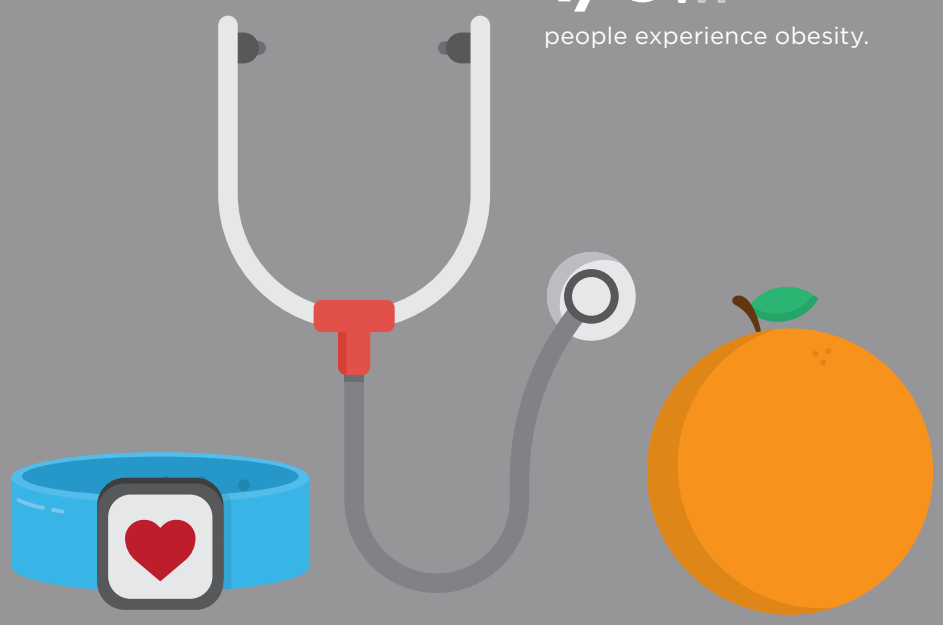
people have diabetes.

1/5

people have a disability.

1/3

people experience obesity.



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The Cycle of Hunger and Health

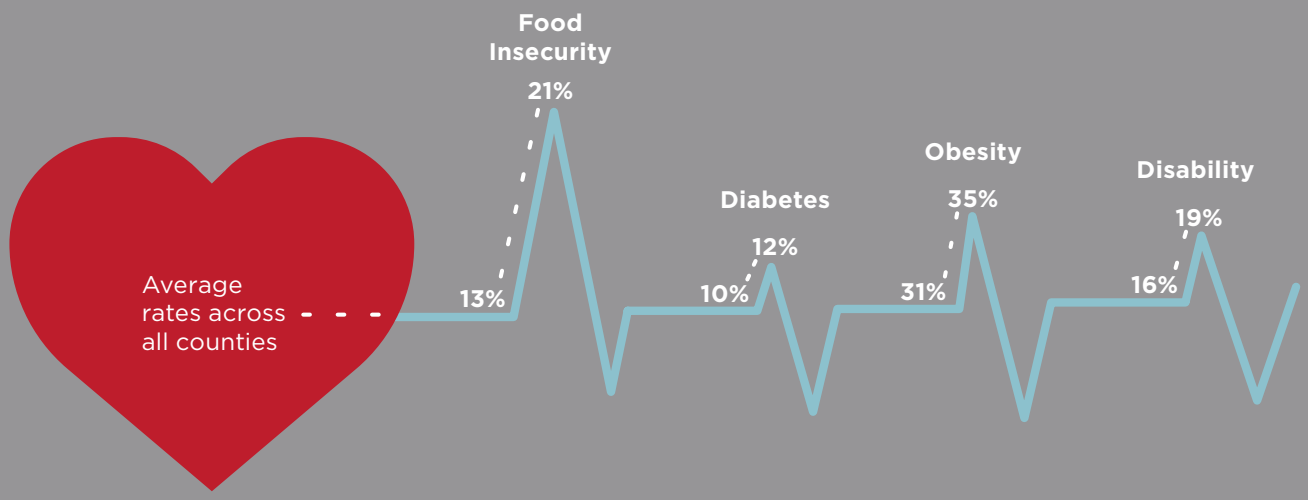
The intersection of hunger and health can be depicted as a cycle.[1] First, a food-insecure household is forced to engage in coping strategies, often including the consumption of cheaper foods that are high in calories, but low in nutritional value. Reliance on less healthy foods can lead to poor nutrition, and chronic diet-related diseases such as diabetes[2]. In turn, these chronic illnesses can worsen existing disabilities or other illnesses or result in inability to work[3] and increased healthcare costs[4], which further restrict the household food budget. **Once a person or family enters the cycle, it can be increasingly difficult to escape it.** A significant number of households served by the Feeding America network have members living with a chronic disease like diabetes (33% of households) or hypertension (58% of households) and are regularly confronted with these challenges to managing their health.[5,6]

Key Findings

Food Insecurity and Health at the County Level

The county-level analysis that is part of *Map the Meal Gap* reflects the previously stated narrative: **counties with the highest rates of food insecurity also have a higher prevalence of diabetes, obesity and persons with a form of disability.** Among counties whose estimated rate of food insecurity falls in the top 10% of all counties, one in eight individuals has a diabetes diagnosis, one in three individuals experience obesity and one in five has some form of disability.

Health Indicators of Individuals in High Food Insecurity Counties Compared to All Counties

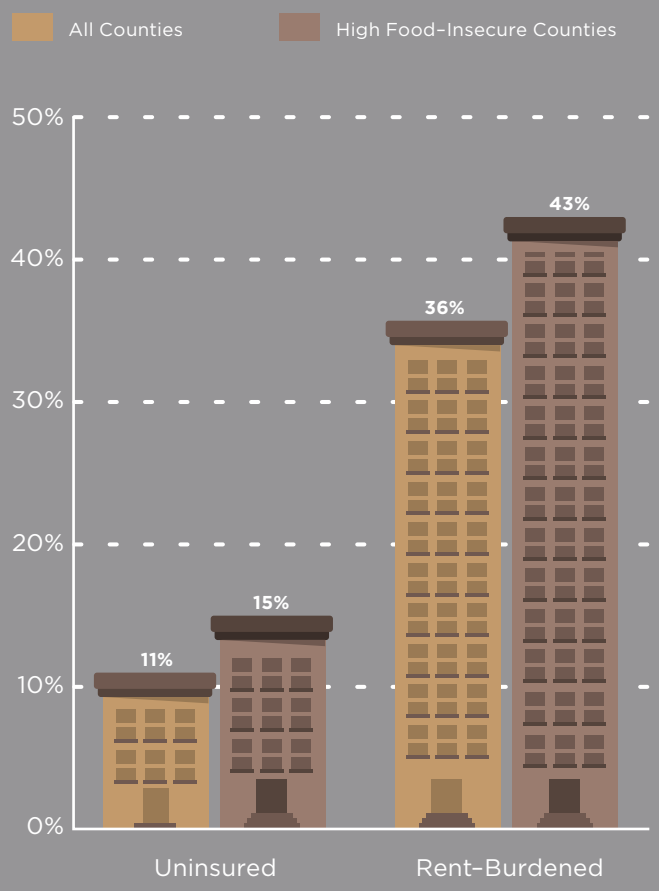


The local confluence of food insecurity and poor health conditions underscores the need for collaborative, cross-sector public-health and food-security interventions, especially in counties with higher rates of people struggling with hunger.

Food Insecurity, Health Insurance and Housing

Some households that are struggling to make ends meet may not have room in their budget for health insurance. Insurance helps pay for medical expenses, such as doctor visits and medications. For a household without health insurance, the cost of these expenses can take families from just above the poverty line to below it.[7] However, a food-insecure household may not be able to afford health insurance, or the copays that come with it. Data from *Map the Meal Gap* indicate that **counties with the highest rates of food insecurity also tend to have higher uninsured rates.**[8]

Research also suggests a relationship between housing instability and poor health outcomes in a household. For example, bouts of homelessness can have a profoundly negative impact on a family's mental and emotional stress,[9] and unstable housing increases the likelihood that a family will not be able to comply with a prescription or treatment for a chronic illness.[10] High rental burden, which occurs when a household pays 35% or more of their income on rent, may also indicate a lack of resources for a household to afford adequate food and health insurance coverage, potentially increasing the risk for negative health outcomes. **Compared to all counties, those with higher rates of food insecurity tend to have higher rates of rental burden.**[11]

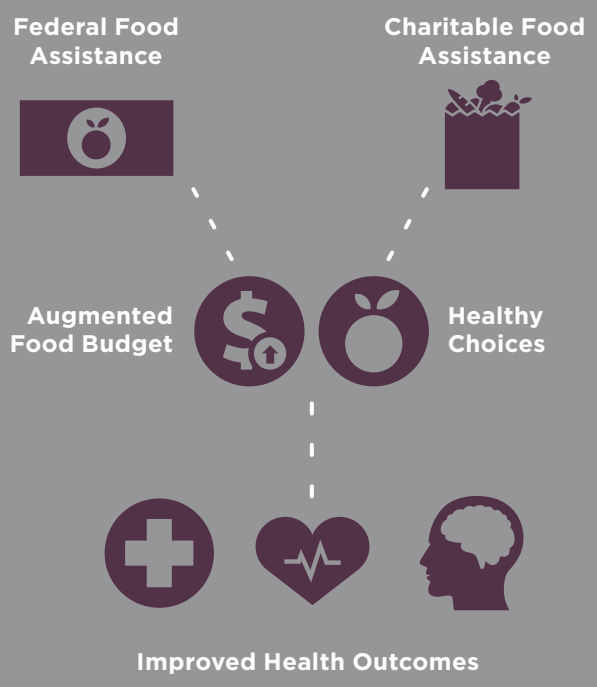


Public and Charitable Food Assistance

The Supplemental Nutrition Assistance Program (SNAP) and the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) play a critical role in helping low-income families break out of the cycle of hunger and diet-related disease. Both programs augment households' food budgets, allowing them to purchase more healthful foods, and provide nutrition education to participants. A 2013 review of SNAP nutrition education, also known as SNAP Ed, found that it increased both consumption and willingness to consume fruits and vegetables among child participants.[12] These programs, along with other federal nutrition programs that target specific populations, make up the front line of defense against hunger.

The federal programs, however, cannot break the hunger and health cycle alone. As the diabetes epidemic mounts, food banks and food pantries within the Feeding America network, which in 2018 distributed 1.5 billion pounds of fresh fruit and vegetables to people across the country, have emerged as important partners in addressing diabetes outside of the healthcare setting.[13] A three-year initial study conducted with three Feeding America food banks found that a targeted, food bank-led diabetes intervention resulted in improved diets, increased medication adherence, and overall better control of diabetes. Interventions included: diabetes appropriate food, education, blood sugar monitoring and referrals to primary care physicians.[14]

In addition to providing healthy food, Feeding America is working to improve the consumption of fresh produce for all people who experience food insecurity. A collaboration with Cornell University that tested small environmental changes at pantries found that when implemented, visitors were more likely to choose healthy food.[15] But, this work is just the beginning. Feeding America's website, HungerandHealth.org, caters to professionals across numerous sectors providing research, high-quality nutrition and health education materials, toolkits for partner engagement and intervention implementation, and much more. There are many ways in which the charitable food and public health sectors can work together, including health practitioners screening for food insecurity in medical check-ups.[16] By joining together to help Americans struggling with hunger break out of the cycle of food insecurity and poor health, food banks and public health institutions can not only end hunger but have a powerful impact on health in the United States.



Map the Meal Gap Methodology

Map the Meal Gap estimates the number of people, including children, that are food insecure in every county and congressional district in the country. To accurately estimate the number of people who may be food insecure in every U.S. county and congressional district, Feeding America uses publicly available state and local data from the U.S. Census Bureau and Bureau of Labor Statistics on factors that research has shown to contribute to food insecurity. These factors include unemployment and poverty, as well as other demographic and household characteristics. Public health and spending tradeoffs were then analyzed at the county level, based on data collected by the Centers for Disease Control (CDC) and the American Community Survey (ACS). More information and full methodology details are available in the technical brief. *Map the Meal Gap 2019* also features report briefs on other topics, including an executive summary, an overview of child food insecurity, and on food price variations.

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References

Executive Summary

1. United States Department of Agriculture, Economic Research Service. (2018). *Household food security in the United States in 2017.* Washington, D.C.: Coleman-Jensen, A., Rabbitt, M. P., Gregory, C. A., & Singh, A.
2. Bureau of Labor Statistics. (2018).
3. United States Census Bureau. (2018). 2017 ACS 5-year estimates.
4. United States Census Bureau. (2018). 2017 ACS 5-year estimates.
5. United States Census Bureau. (2018). 2017 ACS 5-year estimates.
6. United States Department of Agriculture, Economic Research Service. (2017).
7. Mathematica Policy Research. (2012). Gordon, A., Oddo, V. *Addressing child hunger and obesity in Indian Country: Report to Congress.* Alexandria, VA: Gordon, A., & Oddo, V.
8. Gundersen, C. (2008). Measuring the extent, depth, and severity of food insecurity: An application to American Indians in the United States. *Journal of Population Economics*, 21(1), 191-215.
9. United States Department of Agriculture, Economic Research Service. (2018). *Statistical supplement to the household food security in the United States in 2017.* Washington, D.C.: Coleman-Jensen, A., Rabbitt, M. P., Gregory, C. A., & Singh, A.

Child Food Insecurity

1. United States Department of Agriculture, Economic Research Service. (2018). *Household food security in the United States in 2017.* Washington, D.C.: Coleman-Jensen, A., Rabbitt, M. P., Gregory, C. A., & Singh, A.
2. Coleman-Jensen, A., McFall, W., & Nord, M. *Food insecurity in households with children: Prevalence, severity and household characteristics, 2010 -2011, EIB-113*, U.S. Department of Agriculture, Economic Research Service, May 2013.
3. Laraia, B. A., Siega-Riz, A., & Gundersen, C. (2010). Household food insecurity is associated with self-reported pregravid weight status, gestational weight gain and pregnancy complications. *Journal of the American Dietetic Association*, 110(5), 692-701.
4. University of Wisconsin Population Health Institute. (2018). *County Health Rankings Key Findings 2018.*
5. Kirkpatrick, S. I., McIntyre, L., & Potestio, M. L. (2010). Child hunger and long-term adverse consequences for health. *Archive of Pediatric Adolescent Medicine*, 164(8), 754-762.
6. Eicher-Miller, H. A., Mason, A. C., Weaver, C. M., McCabe, G. P., & Boushey, C. J. (2009). Food insecurity is associated with iron deficiency anemia in US adolescents. *American Journal of Clinical Nutrition*, 90(5), 1358-1371.
7. Skalicky, A., Meyers, A. F., Adams, W. G., Yang, Z., Cook, J. T., & Frank, D. A. (2006). Child food insecurity and iron deficiency anemia in low-income infants and toddlers in the United States. *Maternal and Child Health Journal*, 10(2), 177-185.
8. Muirhead, V., Quiñonez, C., Figueiredo, R., & Locker, D. (2009). Oral health disparities and food insecurity in working poor Canadians. *Community Dentistry and Oral Epidemiology*, 37(4), 294-304.
9. Cook, P. H., Frank, D. A., Leveson, S. M., Neault, N. B., Heeren, T. C., Black, M. M., Berkowitz, C., Casey, P. H., Meyers, A. F., Cutts, D. B., & Chilton, M. (2006). Child food insecurity increases risks posed by household food insecurity to young children's health. *Journal of Nutrition*, 136(4), 1073-1076.
10. Casey, P. H., Szeto, K. L., Robbins, J. M., Stuff, J. E., Connell, C., Gossett, J. M., & Simpson, P. M. (2005). Child health-related quality of life and household food security. *Archives Pediatric and Adolescent Medicine*, 15, 51-56.
11. Jyoti, D.F., Frongillo, E.A., & Jones, S.J. (2005). Food insecurity affects school children's academic performance, weight gain, and social skills. *Journal of Nutrition*, 135(12), 2831-9.
12. Slack, K.S., & Yoo, J. (2005). Food hardship and child behavior problems among low-income children. *Social Service Review*, 75, 511–536.
13. Whitaker, R. C., Phillips, S. M., & Orzol, S. (2006). Food insecurity and the risks of depression and anxiety in mothers and behavior problems in their pre-school-aged children. *Pediatrics*, 118, e859–e868.
14. Slopen, N., Fitzmaurice, G., Williams, D. R., & Gilman, S. E. (2010). Poverty, food insecurity, and the behavior of childhood internalizing and externalizing disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 49, 444-452.
15. U.S. Department of Agriculture, Food and Nutrition Service, Office of Policy Support. (2019). *Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2017.* Alexandria, V.A.: Kathryn Cronquist & Sarah Lauffer.
16. United States Department of Agriculture, Food and Nutrition Service (2018). *WIC program participation and costs.*
17. United States Department of Agriculture, Food and Nutrition Service (n.d.) *Child Nutrition Tables*. Retrieved from https://www.fns.usda.gov/pd/child-nutrition-tables.
18. United States Department of Agriculture, Economic Research Service. (2018). *Household food security in the United States in 2017.* Washington, D.C.: Coleman-Jensen, A., Rabbitt, M. P., Gregory, C. A., & Singh, A.

Food Price Variation

1. United States Department of Agriculture, Economic Research Service. (2014). *Prevalence of U.S. food insecurity is related to changes in unemployment, inflation, and the price of food*. Washington, D.C.: Nord, M., Coleman-Jensen, A., & Gregory, C.
2. Economic Research Service, U.S. Department of Agriculture. Food Price Outlook, https://www.ers.usda.gov/data-products/food-price-outlook.
3. United States Department of Agriculture, Economic Research Service. (2017). *Official USDA food plans: Cost of food at home at four levels, U.S. average*, June 2017.
4. United States Department of Agriculture, Economic Research Service. (2017).
5. Bureau of Labor Statistics. (2018).
6. United States Census Bureau. (2018). 2017 ACS 5-year estimates.
7. United States Census Bureau. (2018). 2017 ACS 5-year estimates.
8. United States Department of Agriculture Food and Nutrition Service. (2019). Supplemental Nutrition Assistance Program (SNAP) participation and costs, 1969-2018.
9. Gundersen, C., Kreider, B. & Pepper, J. V. (2017). Partial identification methods for evaluating food assistance programs: A case study of the causal impact of SNAP on food insecurity. *American Journal of Agricultural Economics*, 99(1), 875–93.
10. Waxman, E., Gundersen, C. & Thompson, M. (2018). "How Far Do SNAP Benefits Fall Short of Covering the Cost of a Meal?" Urban Institute, February 23, 2018.
11. Gundersen, C., Kreider, B. & Pepper, J. V. (2018). Reconstructing the Supplemental Nutrition Assistance Program to more effectively alleviate food insecurity in the United States. *Russell Sage Foundation Journal for Social Sciences*, 4(2): 113–20.

Health Implications of Food Insecurity

1. Seligman, H. K. and Schillinger, D. (2010). Hunger and socioeconomic disparities in chronic disease. *The New England Journal of Medicine*, 363(1), 6-9.
2. Seligman, H. K. Bindman, A. B., Vittinghoff, E., Kanaya, A. M., & Kushel, M. B. (2007). Food insecurity is associated with diabetes mellitus: Results from the National Health Examination and Nutrition Examination Survey (NHANES) 1999–2002. *Journal of General Internal Medicine*, 22(7), 1018–1023.
3. American Diabetes Association. (2013). Economic costs of diabetes in the U.S. in 2012. *Diabetes Care*, 36(4), 1033-46.
4. Berkowitz, S. A. Basu S., Meigs, J.B., & Seligman, H. K. (2018). Food Insecurity and Health Care Expenditures in the United States, 2011-2013. *Health Services Research*, 53(3), 1600-1620.
5. *Hunger in America 2014* asked about diabetes in its survey of people receiving food assistance, but it did not specifically ask if the member of the household had Type 1, Type 2, or some other kind.
6. Feeding America. (2014). *Hunger in America 2014: National report.*
7. United States Census Bureau. (2017). *The supplemental poverty measure: 2016*. Washington, D.C.: Liana, F.
8. United States Census Bureau. (2018). 2017 ACS 5-year estimates.
9. Kushel, M. B., Gupta, R., Gee, L., & Haas, J. S. (2006). Housing instability and food insecurity as barriers to health care among low-income Americans. *Journal of General Internal Medicine*, 21(1), 71-77.
10. Hwang, S. W. (2001). Homelessness and health. *Canadian Medical Association Journal*, 164(2), 229-233.
11. United States Census Bureau. (2018). 2017 ACS 5-year estimates.
12. U.S. Department of Agriculture, Food and Nutrition Service. (2013). *Supplemental Nutrition Assistance Program education and evaluation study (Wave II)*. Prepared by Altarum Institute.
13. Feeding America (2019). *2018 annual report: solving hunger today ending hunger tomorrow.*
14. Seligman, H. K., Lyles, C., Marshall, M. B., Prendergast, K., Smith, M. C., Headings, A., Bradshaw, G., Rosenmoss, S., & Waxman, E. (2015). A pilot food bank intervention featuring diabetes-appropriate food improved glycemic control among clients in three states. *Health Affairs*, 34(11).
15. Feeding America and Cornell University. (2016). *The power of nudges: Making the healthy choice the easy choice in food pantries.*
16. American Academy of Pediatrics. (2015) *Promoting food security for all children.*

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