



Map the Meal Gap 2018

A Report on County and Congressional District Food Insecurity and County Food Cost in the United States in 2016



THE HOWARD G.
BUFFETT
FOUNDATION

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

Foreword

Hunger in the United States is often hidden but remains pervasive. More than 41 million Americans struggle with hunger—a number that is essentially unchanged from last year and is higher than before the last recession began in late 2007.

One cannot tackle big challenges like hunger without first identifying and quantifying them. The Howard G. Buffett Foundation is proud to be the Founding Sponsor of Feeding America's signature *Map the Meal Gap* study. Now in its eighth year, *Map the Meal Gap* is an annual analysis of food insecurity down to the county and congressional district level that serves as a powerful tool to advocate for hunger relief and educate Americans about the reality of hunger in our country.

Findings from *Map the Meal Gap 2018* confirm that people face hunger in every county and congressional district in America. The study also finds wide disparities in local food insecurity and food prices across the country. And while there are signs of improvement in the U.S. economy, food insecurity among Americans remains prevalent, disproportionately high and concentrated in many communities.

The Feeding America nationwide network of food banks and its partners use *Map the Meal Gap* in their strategic planning and goal-setting as they work to address current hunger needs and work to end hunger across America. The annual study has also become a tool for legislators, academics and community organizations as they develop policies, research and programs across a number of related social and economic issues.

We believe that clearly defining the face of hunger in the United States is an essential first step toward a more food-secure future.



Howard G. Buffett
Chairman and CEO
The Howard G. Buffett Foundation

Using Data and Evidence to Set a Bold Strategic Direction

In order to end hunger in America, we must first deeply understand the problem. For nearly 25 years, Feeding America has been a leader in developing and conducting innovative research about food insecurity in America, its prevalence, and the impact it has on the people we serve. The data and understanding we derive from our studies allow us to make informed decisions about programs and policies that help feed people facing hunger today, while setting the course of our efforts to end hunger tomorrow by improving long-term food security.

One of the most instrumental studies in supporting this important and daunting work is *Map the Meal Gap*. Since 2011, *Map the Meal Gap* provides insight into the number of food-insecure individuals in every state, county and congressional district across the United States. This critical knowledge enables us to dynamically integrate research and practice and develop effective, evidence-based programmatic solutions to food insecurity.

We are grateful for the vision and partnership of the Howard G. Buffett Foundation, a founding sponsor of this study, which has enabled Feeding America to be at the leading edge of research and evidence, driving policy and programmatic change at national and local levels. The ongoing, generous commitment from all our *Map the Meal Gap 2018* funders and supporters, including the Howard G. Buffett Foundation, Conagra Brands Foundation and Nielsen, has provided Feeding America with the foundation we need to build our bold organizational direction.

We thank all our advisors and thought partners who contributed to the development of the analysis and insights that constitute *Map the Meal Gap*.



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Chief Program Officer



Erin McDonald, PhD, MPP
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Acknowledgements & Credits

We appreciate the contributions of the following people for their work on Map the Meal Gap 2018.

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Carol Medlin, PhD, MPA. Chief Program Officer

Carol Medlin is Chief Program Officer at Feeding America. Carol oversees the design, development and execution of Feeding America programs and partnerships that help improve access to a variety of nutritious food through our network and improve outcomes for the people we serve, with the goal of ending hunger. She guides the organization's strategic research agenda to shape policies and strategies for advancing a hunger free America.

Carol possesses more than twenty years of experience implementing strategy, and leveraging research, data, and analytics to maximize social impact and improve organizational performance. She has worked with leading think tanks and philanthropic organizations, including The Bill and Melinda Gates Foundation and, most recently, the Children's Investment Fund Foundation (CIFF) in London. Carol has served on the Board of Commissioners of the International Initiative on Impact Evaluation (3IE) and on the advisory committee of the Global Health Investment Fund (GHIF), an innovative social impact fund. She is Founder and Principal of Praxis Social Impact Consulting.

Carol holds a doctorate in Political Science from the University of California, Berkeley and a master's in Public Administration from the Woodrow Wilson School of Public and International Affairs at Princeton University.

Erin McDonald, PhD, MPP. Vice President of Research

Erin McDonald is Vice President of Research at Feeding America. She leads the research and evaluation strategy for the organization, focusing on the prevalence and root causes of food insecurity and assessing solution efficacy. In addition, she is responsible for analytic and flexible learning resources for both internal and external Feeding America audiences.

Erin brings a wealth of methodological and social science expertise to Feeding America from intersecting fields, including social justice, financial security, poverty alleviation and workforce development. Previously, she was Director of Research, Evaluation and Monitoring at Women's World Banking, where she led a global research team focused on developing and directly delivering mixed-methods research and evaluation efforts. She created and implemented innovative approaches to international market intelligence and led the organization's strategic agenda development.

Earlier, Erin served as Director of Research and Strategic Learning at The New York Women's Foundation, where she led a team that developed organizational research and analytic content, focused on applied research, to support economic development among non-profit organizations serving low-income women. Prior to this effort, she held lead researcher positions at The Urban Institute and senior strategy roles within the government, leading systems change efforts.

Erin holds a doctorate in public health and research from Johns Hopkins Bloomberg School of Public Health and a master's in public policy and evaluation from Johns Hopkins Policy Studies Institute. She is a trained bioethicist.

Executive Summary



Although the economy is improving, millions of Americans continue to struggle. The USDA estimates that 41 million people, including nearly 13 million children, in the United States are food insecure as of 2016. That means 1 in 8 individuals (13%) and 1 in 6 children (18%) live in households without consistent access to adequate food. The prevalence of food insecurity is essentially unchanged from 2015, and rates remain higher than before the Great Recession in 2007.

For the eighth 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.

4-36%

range of population that is food insecure across US counties. Food insecurity exists everywhere.

1/4 

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

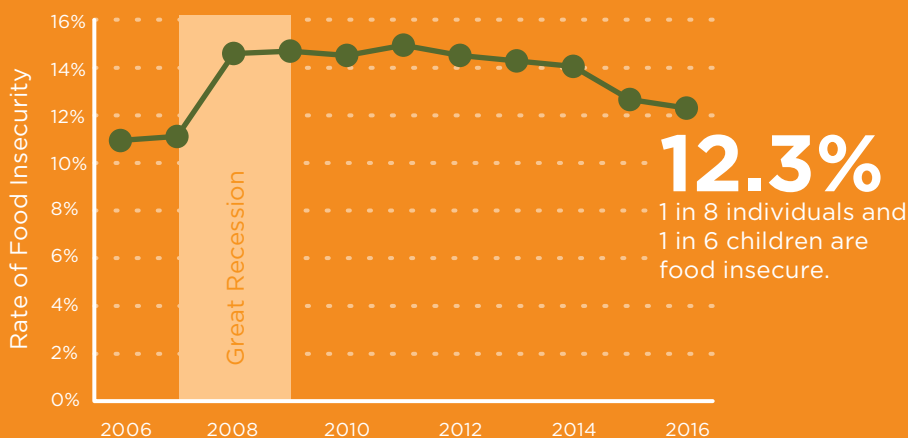
\$21 billion

national budget need for those who are food insecure, even though individual food budget shortfall declines per person.

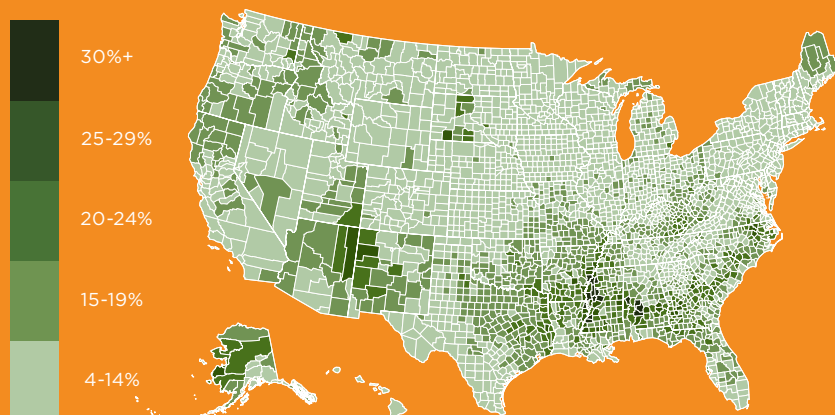
\$3.00 

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

Prevalence of Food Insecurity



Food-Insecurity Rates



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 4% 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. While no community is free of food insecurity, Mississippi is home to the highest county and district rates in the country.

Range of County Food Insecurity Rates



Highest Rates of Food Insecurity

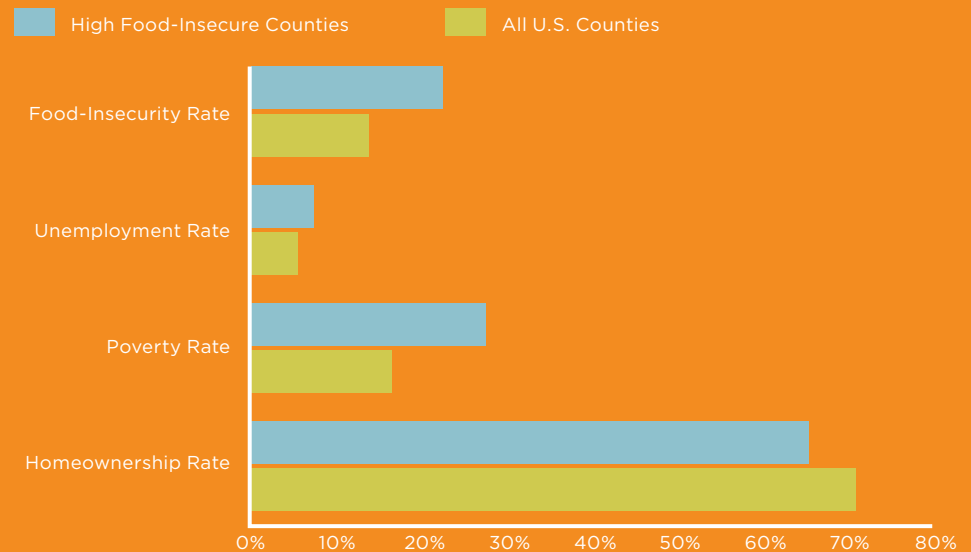
Counties with the highest rates of food insecurity—those in the top 10% of all counties—tend to have similarly poor economic indicators: higher rates of unemployment¹ and poverty², and lower homeownership³ and median income⁴ as compared with all counties.



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

The majority (64%) 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.⁵ 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

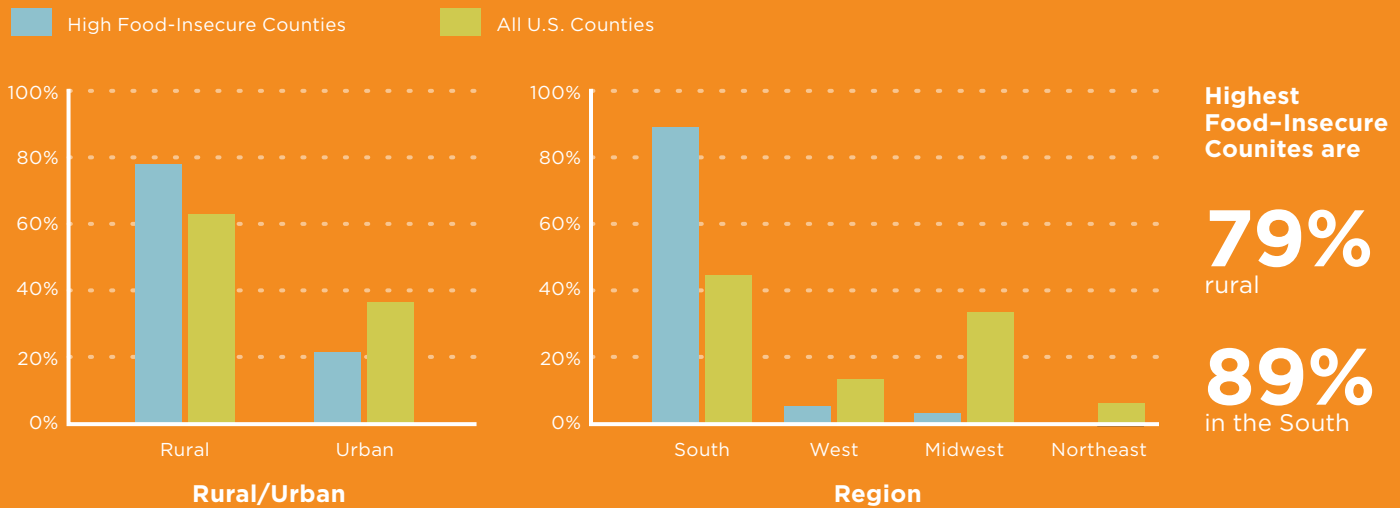
While the prevalence of food insecurity is an important indicator of need, **counties with large populations and comparatively low rates of food insecurity are home to some of the largest absolute numbers of food-insecure people.** For example, Los Angeles County, California has a relatively low rate of food insecurity (11%) but is home to an estimated 1.1 million food-insecure individuals, including more than 439,000 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 79% 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 89% 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.



Many counties located outside major metropolitan areas and in the South are home to large populations 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 more than double that among all counties (40% 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,^{6,7} such as Apache County, Arizona, which includes parts of the Navajo Nation, Zuni and Fort Apache reservations. A persistent-poverty county with poverty (36%) and food insecurity (26%) more than 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 2016 stands at a staggering \$21 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 spend on just enough food to meet their needs. The weekly shortfall (\$16.90) decreased in 2016 after rising for four consecutive years.



However, with **average meal costs nearly twice as high as the national average** (\$3.00) 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.

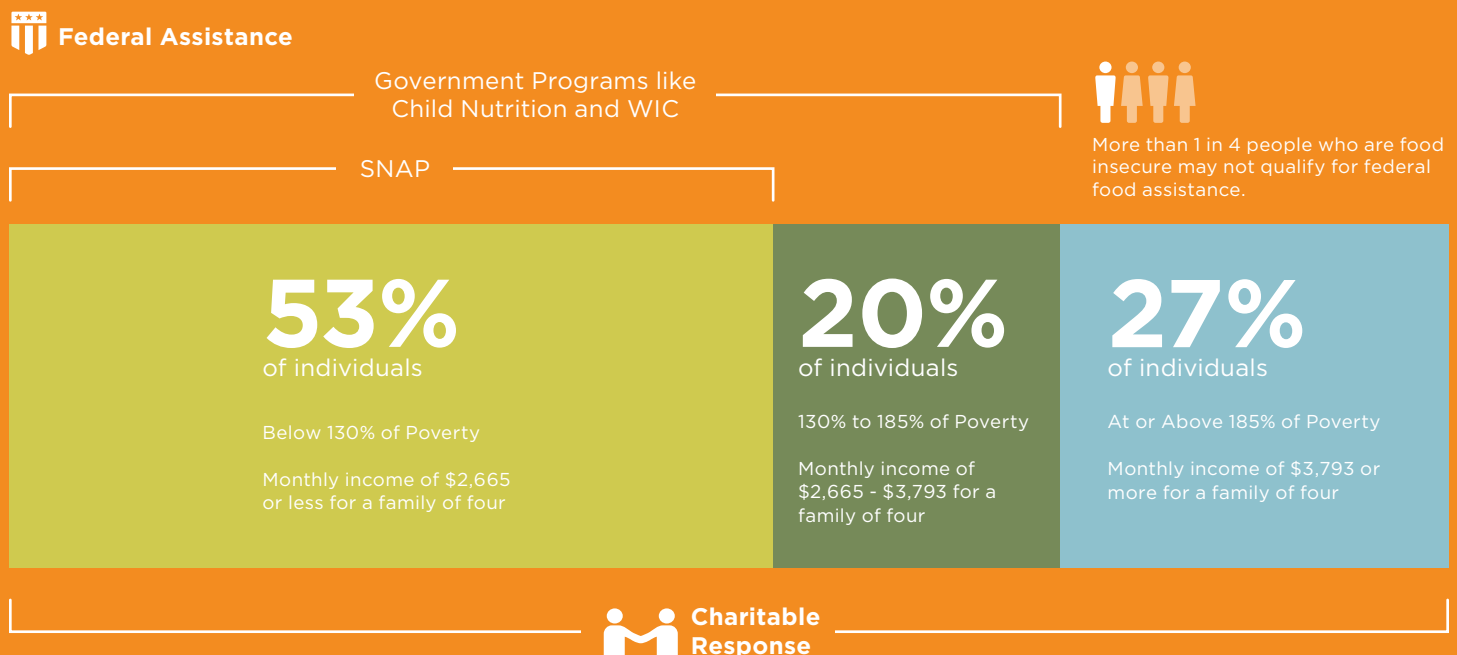


Implications

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, more than one in four (27%) food-insecure individuals live in households unlikely to qualify for most assistance.⁸ 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 Borden County, Texas. 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 Thresholds⁹



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.



Child Food Insecurity



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 nearly 13 million children in the United States live in food-insecure households as of 2016.¹ That means that 1 in 6 children (18%) may not have consistent access to enough food for an active, healthy life.

For the eighth 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 2018 report briefs*.

13 million

-or-

1/6

children are food insecure.

50

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

85%

of counties with high child food insecurity are rural.

800,000

food-insecure children live in Los Angeles and New York City.

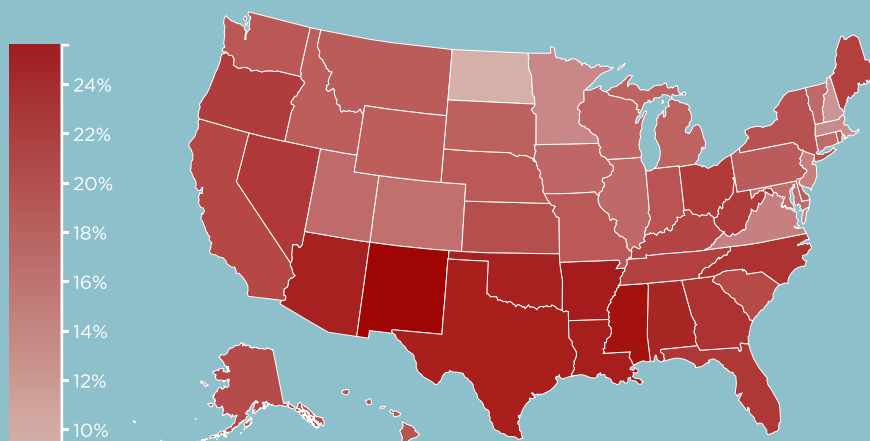
Key Findings

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 20% in Mississippi, rates among children range from 9% in North Dakota to 26% in New Mexico. Among congressional districts, rates of child food insecurity span a similar range—a low of 9% (about 19,000 children) in affluent districts like Virginia's 10th bordering Washington, D.C., to a high of 29% (more than 51,000 children) in Mississippi's 2nd, home to the city of Jackson.



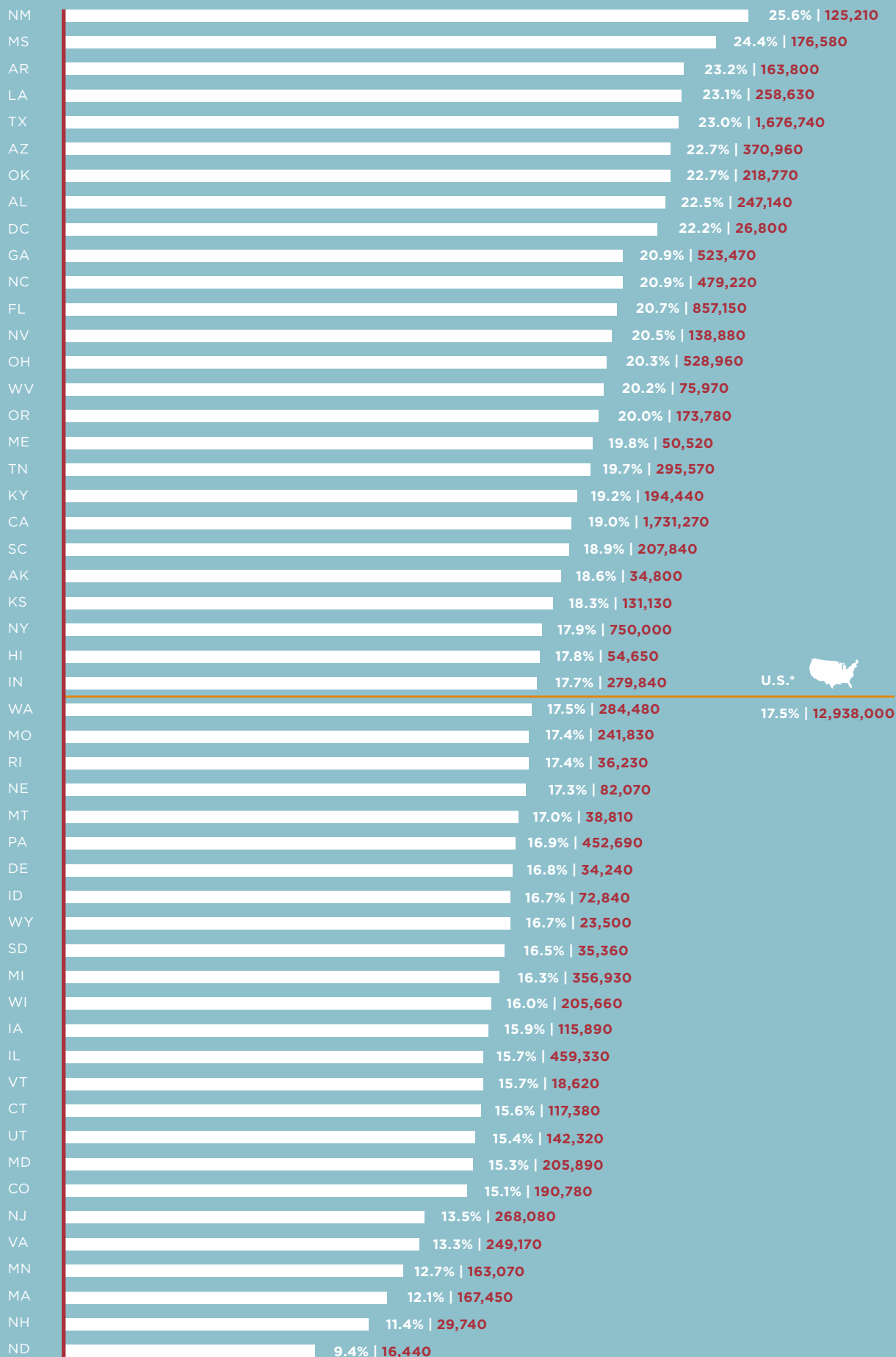
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Child Food Insecurity Rates by State

Percentage of Food-Insecure Children

Number of Food-Insecure Children



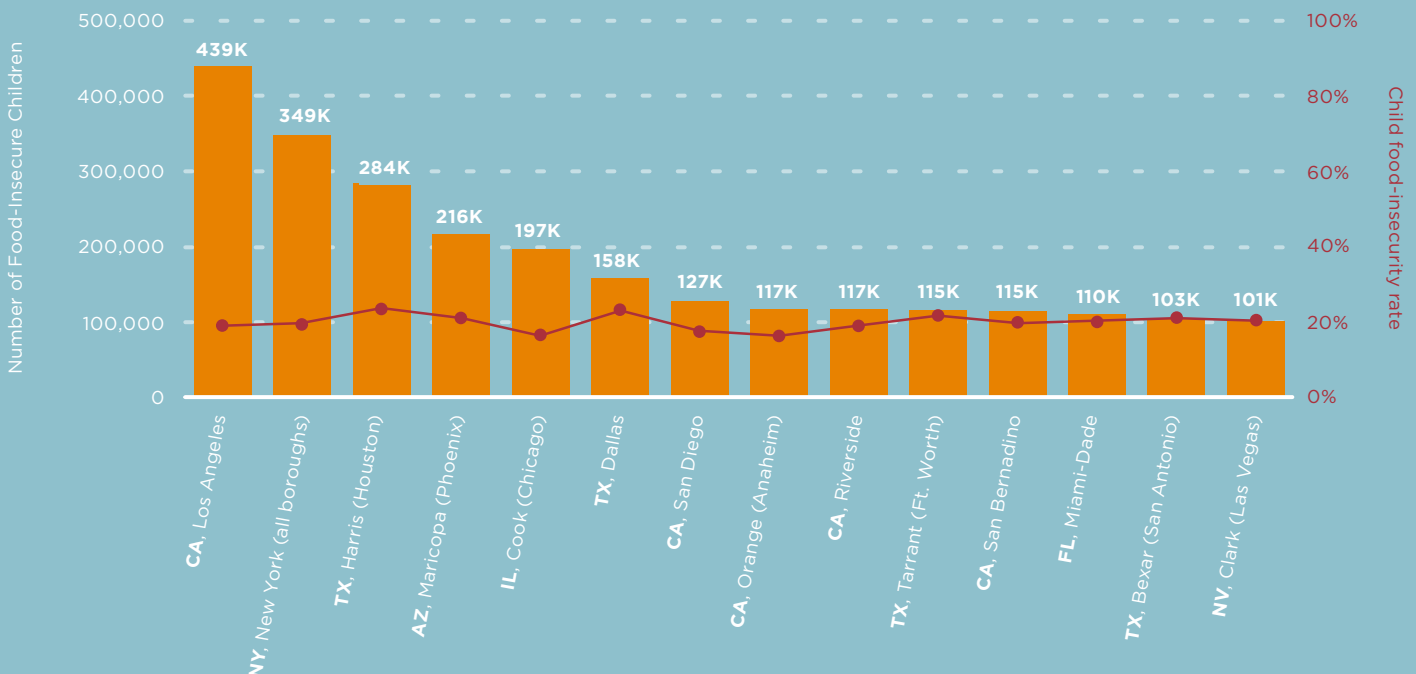
Child Food Insecurity Among Counties

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 Bowman County, North Dakota to 40% in Issaquena County, Mississippi. The variation in rates of child food insecurity shows that need is more pervasive in specific communities. Among the 324 counties in the top 10% of counties with the highest rates of child food insecurity, an estimated 28% of children live in food-insecure homes, compared to 20% across all counties. Counties with the highest rates of child food insecurity have notably higher unemployment and poverty rates, and lower median incomes.



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 (19%) close to the national county average (20%). However, there is high need in both areas: nearly 450,000 food-insecure children live in Los Angeles County and almost 350,000 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 have elevated levels of need despite below-average rates of child food insecurity. **Whether a county is urban or rural, however, 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 problems⁸ 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 mathematics¹¹ test scores, and they may be more likely to exhibit behavioral problems,¹² including hyperactivity, aggression¹³ and anxiety.¹⁴



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^{16,17}
SNAP



4 million children¹⁸
Government Programs like
Child Nutrition and WIC

Federal School Nutrition Programs¹⁵



22 million children
National School Lunch Program



12 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.**¹⁹ 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 2018* also features report briefs on other topics, including an [executive summary](#), an overview of [food price variations](#), and an analysis of [health implications](#).



Food Price Variation



The USDA estimates that 41 million people, including nearly 13 million children, in the United States are food insecure as of 2016. This means that 1 in 8 individuals (13%) and 1 in 6 children (18%) 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 While food prices fell for the first time in 50 years,² they are expected to rise in 2018, as the economy continues to grow.³

For the eighth 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 2018 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.

41 million

-or-

1/8 

people are food insecure.

1,334

counties (42%) have meal costs higher than the national average.

\$3.00 

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



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



Key Findings

County-Level Food Costs

In 2016, people who were food secure reported spending an average of **\$3.00 per meal**, a slight increase from **\$2.94 in 2015**. After adjusting for local food prices, this cost per meal ranges from \$2.04 in Willacy County, Texas to nearly twice the national average in places like New York County (Manhattan) at \$5.70. This means that \$1 in Willacy purchases 32% more food than the national average, and 279% more than in New York County.

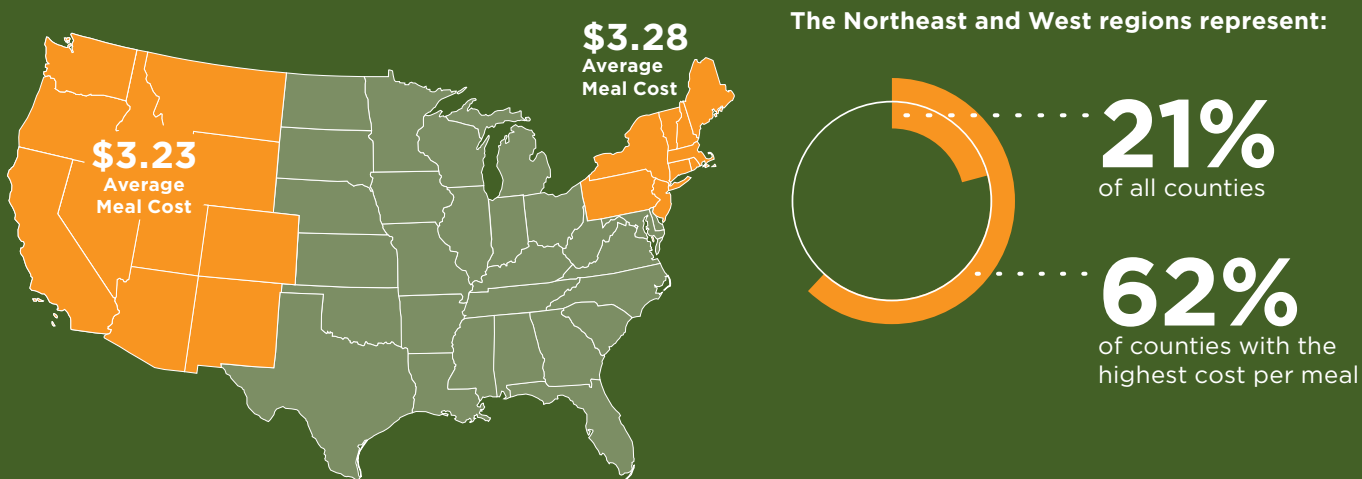
At \$3.00 per meal, a person who is food secure is estimated to spend \$273 on food per month. In New York County that person is likely to pay \$519 for the same amount of food, a grocery bill that would cover enough food for nearly three months in Willacy County. A family of four with two young children is estimated to spend \$1,062 per month in New York County to buy the minimum amount of food for a nutritious diet.⁴ This is considerably more than the national average (\$559) and what that same family would spend in Willacy County (\$380).



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 \$3.56. Aspen in Pitkin County, Colorado and Napa County, California also have a significant tourist presence and higher than average meal costs (\$3.54 and \$4.18, 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

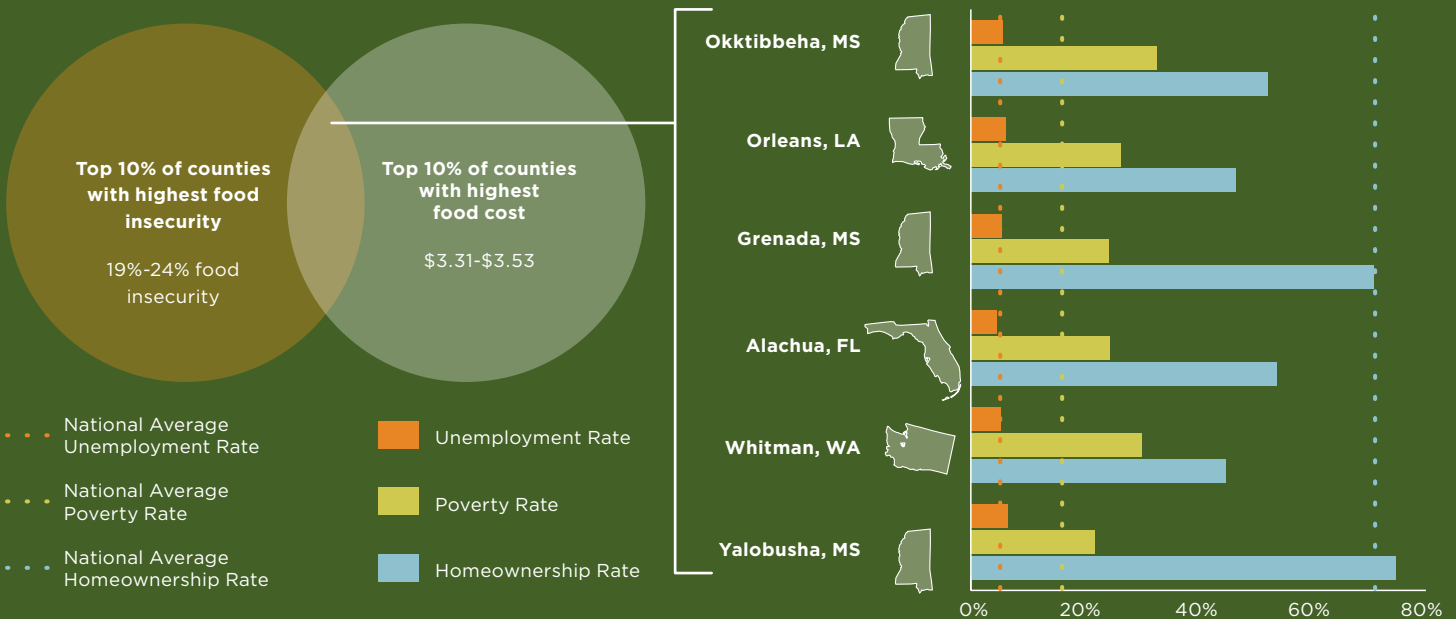
The top 10% of counties with the highest food prices have an average meal cost 20% higher than the national average (\$3.59 versus \$3.00). While there are pockets of communities across the country with high meal costs, counties with the highest estimated costs are regionally concentrated. The Northeast (\$3.28) and West (\$3.23) have a disproportionately high share of these high-cost counties. These two regions account for just 21% of all counties, but 62% of counties with the highest cost per meal. The South and Midwest have lower than average meal costs (\$2.96 and \$2.89, respectively) and relatively few counties in the top 10%.



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.

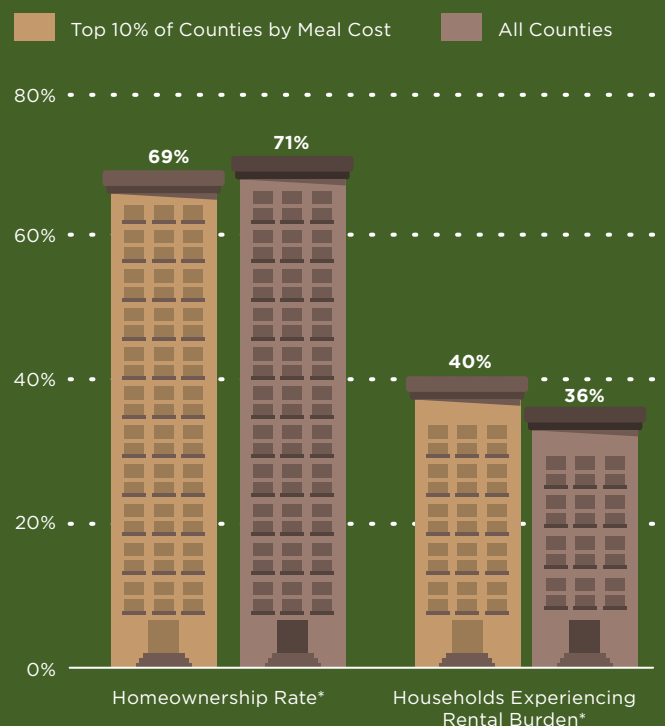
High Food Cost and High Food Insecurity

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. **Six 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 165,000 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 \$3.43 is still 14% higher than the national average. Five of the six counties are located in the South and have persistent poverty.⁵ All six counties have average unemployment rates (5%)⁶ and higher-than-average poverty (27% on average versus 16% nationally), and low homeownership (57% versus 71%).⁷



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.

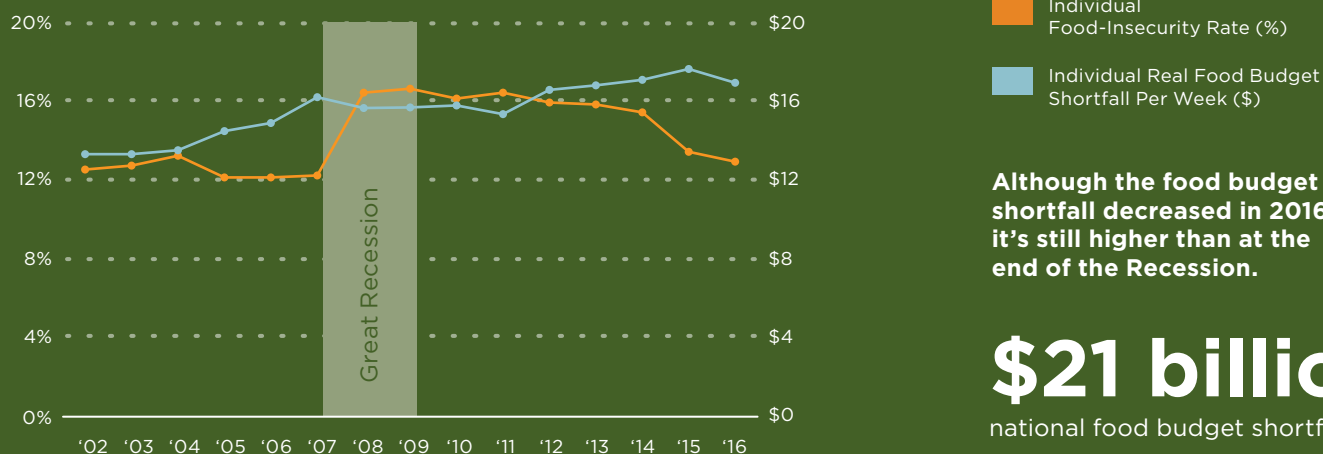


*Data are taken from ACS 2016 5 year estimates.

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. **The national food budget shortfall, or total annualized need among everyone estimated to be food insecure, stands at \$21 billion as of 2016.** While national survey data suggest that spending on food by the food secure does not appear to have decreased in 2016, people who are food insecure report needing less than they did in 2015. In 2016, the average additional amount of money per week that food-insecure individuals self-report needing to buy just enough food to meet their needs (\$16.90) decreased after rising for four consecutive years.

Food Insecurity and Reported Need Still Higher than Before Great Recession



Although the food budget shortfall decreased in 2016, it's still higher than at the end of the 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 food-insecure households in certain parts of the country, high food prices can make it especially difficult to afford the food they need.

The Supplemental Nutrition Assistance Program (SNAP), which served 42 million people in 2017, is a key federal program that helps low-income households bolster their food budget⁸ 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 2018* also features report briefs on other topics, including an [executive summary](#), an overview of [child food insecurity](#), and an analysis of [health implications](#).



Health Implications of Food Insecurity



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 of all ages. The USDA estimates that as of 2016, 41 million people, including nearly 13 million children, in the United States are food insecure. That means 1 in 8 individuals (13%) and 1 in 6 children (18%) 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** such as diabetes and obesity, **as well as a higher incidence for other metrics that are tied to health**, including lack of health insurance. For the eighth 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 2018* report briefs.

41 million

-or-

1/8 

people are food insecure.

In counties with high food insecurity:

1/8 

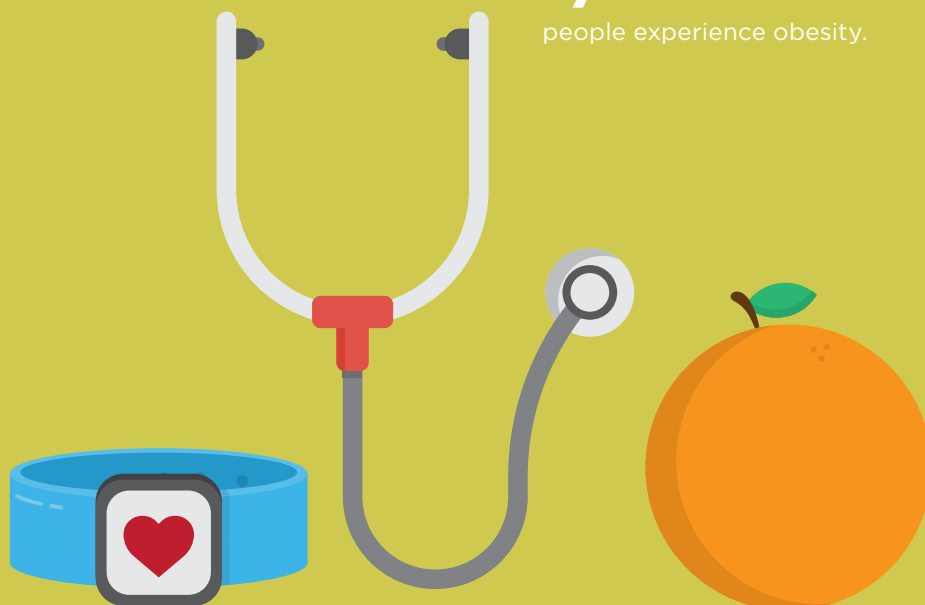
people have diabetes.

1/5 

people have a disability.

1/3 

people experience obesity.



The Cycle of Hunger and Health

The intersection of hunger and health can be most accurately 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 toxic stress², poor nutrition, and chronic diet-related diseases such as diabetes³ and obesity. In turn, these chronic illnesses can worsen existing disabilities or other illnesses, or result in inability to work⁴ and increased healthcare costs, 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}

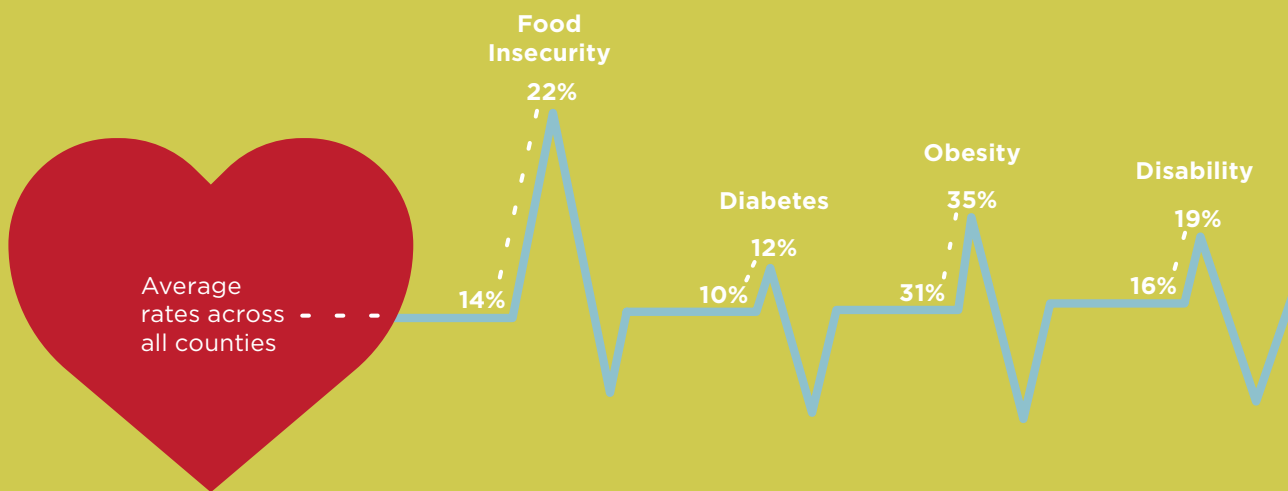


Key Findings

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.** Within 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

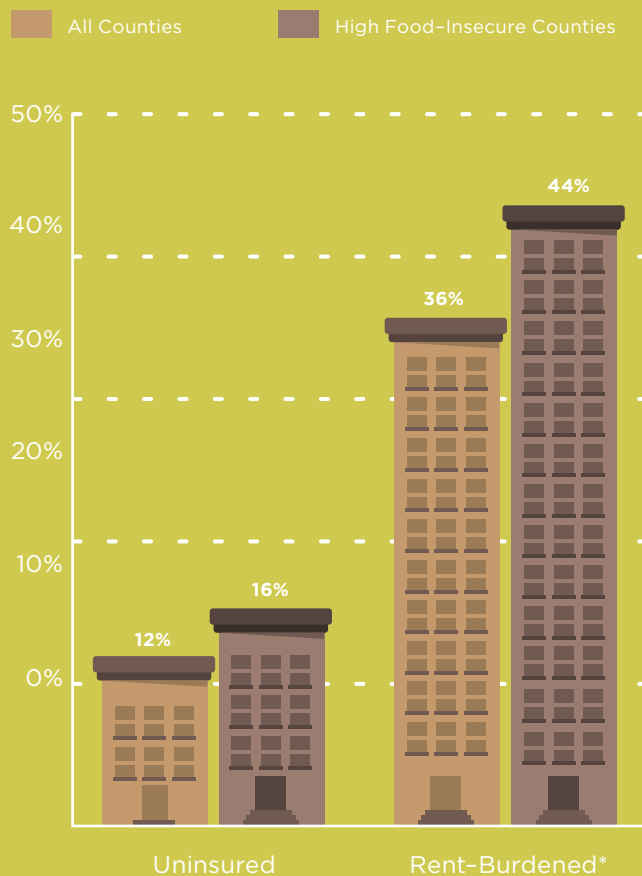


The local confluence of food insecurity and poor health conditions underscores the need for collaborative, cross-sector public-health and food-security interventions, especially in counties with higher rates of people struggling with hunger.

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.**

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,⁸ and unstable housing increases the likelihood that a family will not be able to comply with a prescription or treatment for a chronic illness.⁹ 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.**



*Data are taken from ACS 2016 5 year estimates.

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.¹⁰ 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 2017 distributed 1.3 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. 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.¹¹

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 known as “nudges” at pantries found that when implemented, visitors were more likely to choose healthy food.¹² 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.¹³ 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 2018* 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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