

About This Document

This document provides answers to frequently asked questions about a suite of materials produced through a collaboration between Feeding America and research experts to better understand the geographic variation of healthcare costs associated with food insecurity. That suite includes:

1. A **study** that was published July 11, 2019, in *Preventing Chronic Disease*, a publication of the US Centers for Disease Control and Prevention:

Berkowitz, S.A., Basu, S., Gundersen, C. & Seligman, H.K., (2019). State-Level and County-Level Estimates of Health Care Costs Associated with Food Insecurity. *Prev Chronic Dis.* 16:18549. Available at: [cdc.gov/pcd/issues/2019/18_0549.htm](https://www.cdc.gov/pcd/issues/2019/18_0549.htm)

This latest study builds upon [earlier work](#) by the authors that was published in 2018.

2. A **Tableau dashboard** that allows users to explore the geographic variability of healthcare cost estimates at the state and county levels. The dashboard is available on Feeding America's Tableau Public [profile](#). For a direct link to the dashboard, [click here](#).
3. A short **brief** that accompanies the Tableau dashboard, which can be found [here](#).

Please note that this is intended to be a living document, and we will update it with questions as they arise.

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I. Study Methods

1. What is the study about and why is it important?

Food insecurity, or uncertain access to food because of limited financial resources, is associated with higher healthcare costs. However, both food insecurity prevalence and healthcare spending vary widely in the United States. To inform public policy, this paper estimates state-level and county-level healthcare costs associated with food insecurity and reveals that there is substantial variation across the country. It also found that higher healthcare costs are more strongly associated with higher food insecurity prevalence than differences in healthcare prices or intensity of healthcare use. For the purpose of promoting greater public health, policies and programs that support food security may reduce healthcare costs and improve population health.

2. What data were analyzed to produce these results and where can I access the datasets?

For the analysis, the authors used 2011-2013 data from the [National Health Interview Survey](#) and the [Medical Expenditure Panel Survey \(MEPS\)](#), and 2012-2013 data from the [Dartmouth Atlas](#), each of which are publicly available. The authors also used 2016 data from *Map the Meal Gap 2018*, which can be accessed by request to [Feeding America's research team](#).

3. Are these results available in a table by state and county? Where do I access this?

Results are available within [the paper published in Preventing Chronic Disease](#). Results by state are presented within the Tables section on page 9, and results by county are available for download in the appendix to the study on page 11 (page numbers refer to the pdf version of the study found [here](#)).

4. Are these data available for geographies other than the county & state level?

Map the Meal Gap provides food-insecurity estimates by Congressional District, in addition to the state and county levels. As well, network members can request an [MMG sub-county analysis](#), and we will work with them, in collaboration with our lead researcher on the study, Craig Gundersen, to produce more localized food-insecurity estimates. Geographies that can be requested include Census places (cities & municipalities), Census tracts, zip codes, and other types of localities.

The cost factor – or the additional annual healthcare costs per food-insecure adult – on the other hand, is only available from the Dartmouth Atlas at the county level. Without healthcare cost data at the sub-county level, it is not possible to accurately estimate the total additional annual healthcare costs associated with food insecurity for geographies smaller than counties.

5. What costs are included in the model?

The healthcare costs category includes all healthcare-generated costs, including those associated with clinic visits, emergency department visits, inpatient hospitalizations, prescription medications, and durable medical equipment. However, costs described are only direct costs. Because indirect costs and downstream tradeoffs (e.g., loss in productivity) were not estimated, the costs reported are likely conservative.

6. Who bears the burden of healthcare costs associated with food insecurity?

While more than a third of food-insecure adults in the MEPS were uninsured, about the same percentage had private insurance, and the rest were covered by either Medicare or some other public insurance. Deductibles can vary widely depending on insurance coverage, and so the healthcare costs incurred by a food-insecure adult will be covered to a varying extent by their insurance payor. If the deductible is high, this could mean that much of the additional healthcare costs may be paid out-of-pocket by an already-struggling household. Largely, however, for people who are insured (either through private or public insurance), most of the additional costs of healthcare associated with food insecurity are likely borne by the insurer.

For a patient without insurance coverage to help them pay for healthcare costs, the bills they receive from hospitals and other providers tend to be higher than for an insured patient because there is not an insurance carrier to negotiate lower prices. For this reason, an uninsured food-insecure patient can see their already strained finances be further damaged by an unexpected healthcare expense.

II. Tableau Dashboard

7. In the dashboard, which figures represent total additional healthcare costs associated with food insecurity and which represent costs for adults only?

\$52.9 billion is the total estimated healthcare costs associated with food insecurity among both adults and children in 2016.

In part 1 of the dashboard, \$1,834 refers to the additional healthcare costs per food-insecure adult, excluding children.

In part 2, the first two options in the drop-down menu, *Cost per Capita* and *Total Cost*, both refer to costs among the overall food-insecure population (adults and children). The third option, *Cost per Food-Insecure Adult*, refers to the state-level additional healthcare costs per food-insecure adult, excluding children. Please see [this question](#) for more information on the measures in the drop-down menu.

In part 3, when the percentage point slider is set to 0, the estimated healthcare costs include both adults and children. But if the slider is moved, the change in healthcare costs only includes the change in the adult food-insecure population. Please see [this question](#) for an explanation of this difference.

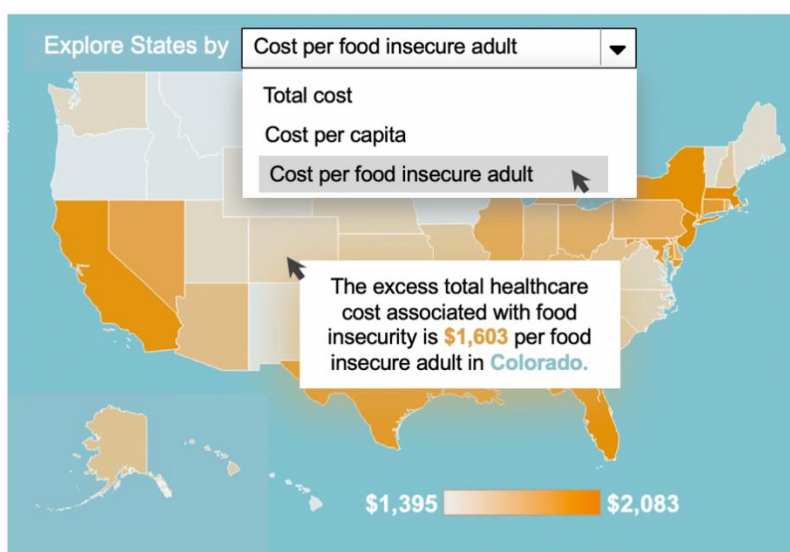
8. Why have some costs been calculated for adults only but not for children only?

In the study, the authors estimated healthcare costs associated with food insecurity separately for adults and children over a two-year timeframe. The annual healthcare costs for food-insecure adults was significantly higher than the costs for food-secure adults (a difference of \$1,834). The annual healthcare costs for food-insecure children were only slightly higher than food-secure children (\$80), and the finding was not statistically significant.

While this study cannot determine why the finding for children was not significant, previous work suggests that healthcare costs associated with food insecurity may be most related to increased prevalence of chronic disease. If that is the case, the additional healthcare costs for children may be low because children are at low risk of developing these conditions, regardless of food security status.

9. What do the three options in the dropdown menu in part 2 mean?

Cost per capita refers to the total additional healthcare costs associated with food insecurity, divided by the entire (food-insecure + food-secure) state population. For cost per capita, both the additional healthcare costs associated with food insecurity and the state population include both adults and children. *Total cost* refers to the total additional healthcare costs associated with food insecurity, based on the state-level food-insecure population, including both adults and children. *Cost per Food-Insecure Adult* refers to the additional healthcare costs that would be expected to be incurred if the food-insecure adult population increased by one adult.

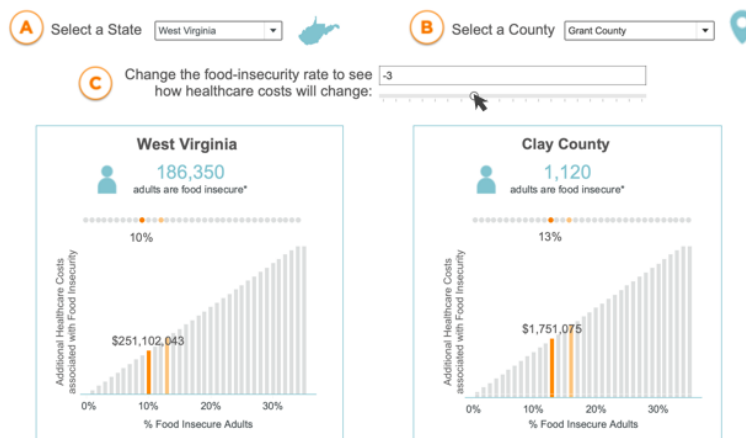


10. In part 2, why are there three options in the dropdown menu?

Cost per capita will be higher in states where the food insecurity rate is greater than average, or in states where healthcare is more expensive. It is important to consider the per-capita cost because *Total cost* will tend to be higher in more populous states (for example, Texas and California), even where the food insecurity rate may be lower than average. *Cost per Food-Insecure Adult* is an indicator of the relative expense of healthcare in each state and does not reflect the prevalence of food insecurity there.

11. In part 3, how was the county-level change in healthcare costs resulting from a change in the county-level food insecurity rate calculated?

The total costs are the annual healthcare costs associated with food insecurity in the chosen state and/or county. For each percentage point change in the slider, (i) 1% is multiplied by the total adult population to calculate the additional food-insecure adult population, (ii) the additional food-insecure adult population is multiplied by the local healthcare costs associated with each food-insecure adult (this is \$1,834 nationally), (iii) this product is added to the annual healthcare costs associated with food insecurity in that state/county to calculate the “new” healthcare costs associated with food insecurity.



12. In part 3, when the percentage point slider is set to 0, the estimated healthcare costs include both adults and children. But if I move the slider, the change in healthcare costs only includes the change in the adult food-insecure population. Can you explain this difference?

In the study, the authors estimated healthcare costs associated with food insecurity separately for adults and children over a two-year timeframe. The annual healthcare costs for food-insecure adults was significantly higher than the costs for food-secure adults (a difference of \$1,834). The annual healthcare costs for food-insecure children were only slightly higher than food-secure children (\$80), and the finding was not statistically significant.

For the dashboard, we erred on the side of being conservative in estimating the additional healthcare costs associated with a change in food insecurity. Even though we are demonstrating that working to improve food security may help reduce healthcare costs, we want to avoid exaggerating the effect a change in food insecurity can have on the additional healthcare needs of the population. In order to be as conservative as possible, we restrict the additional cost prediction to multiplying \$1,834 (and the local healthcare cost factor) by the additional food-insecure adult population.

13. How much of the additional healthcare costs per food-insecure adult, \$1,834, can be tied directly to food insecurity vs. poverty or other economic factors?

Food insecurity and poverty are entangled in complicated ways. As an observational study, this study was not able to completely disentangle the two. However, the analysis tried to account for differences in exposure to poverty between food-secure and food-insecure households by adjusting for age, sex, race/ethnicity, income, education, health insurance, metropolitan residence, and region of residence within the country. To the extent that this adjusting adequately controls for poverty, the findings reported are associated with food insecurity independent of poverty. That is, the findings try to isolate the impact of food insecurity from the impact of poverty more generally.