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Estimates of Food Insecurity During the COVID-19 Crisis: Results from the COVID Impact Survey, Week 1 (April 20–26, 2020)

by

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INTRODUCTION

The COVID-19 crisis has disrupted our lives in a manner unprecedented in modern times, but for none more so than low-income working families with children. Unemployment has spiked sharply, and families have experienced income losses, increasing their economic hardship. Compounding this loss of income, widespread physical school closings have meant that millions of children have lost access to subsidized school meals that play a key role in helping families with children meet their basic food needs. **New evidence is emerging from surveys since the COVID-19 pandemic began that have documented dramatic increases in food insecurity as well as very low food security**—a more severe condition in which there have been substantial disruptions or reductions in food intake—among adults, children, and other vulnerable populations.

FINDINGS

In this report, we take several approaches to contextualizing current levels of food insecurity in the United States.

- We analyze data from the COVID Impact Survey to describe levels of food insecurity by race, income, and presence of children in April 2020.
- We estimate the increase in food insecurity in April by comparing it to a similar measure of food insecurity that has been collected monthly from 2011–18 in nationally representative data. From this, we make projections about the likely rates of food insecurity on the eve of the COVID-19 crisis.
- We estimate how much of the increase in food insecurity experienced in April can be explained by the increase in that month's unemployment rate. We find that the actual increase in food insecurity is substantially larger than what would have been predicted, especially among families with children.
- We describe self-reported use of emergency food assistance through food pantries.
- We provide estimates of food insecurity and food pantry use for states and metropolitan areas represented in the survey.

We find sharp increases in food insecurity in April 2020 during the COVID-19 health emergency. Relative to predicted rates for March, **in April food insecurity doubled overall and tripled among those with children**. We see that food insecurity increased by more than April's

unemployment rate increase predicted it would, especially for families with children. We find that 7% of respondents overall, and nearly 20%, or nearly 1 in 5, respondents who are experiencing food insecurity, reported receiving benefits from food pantries. But rates of food insecurity and interaction with food pantries varied widely across the states and metro areas.

Data

The COVID Impact Survey collects data on economic and health outcomes of nationally and regionally representative samples of American adults. Funded by the Data Foundation, the survey is conducted by NORC at the University of Chicago and is made publicly available to researchers.[ii] In our primary analysis below, we use the national sample and weights, which include data from 2,190 adults nationwide. Another 7,267 adults are surveyed in the subnational survey, which can be used to provide representative estimates for 18 jurisdictions (states and metropolitan areas). The overwhelming majority (93%) of surveys were conducted online, with the remaining 7% collected over the phone. In this report we use data from the first week of released data, which were collected from April 20–26, 2020. A second wave of the COVID Impact Survey is expected to be released on May 14, 2020.

Estimates of Food Insecurity

Food insecurity is a measure that indicates that a household has experienced limited access to adequate food due to a lack of money and other resources. The USDA annually reports estimates of food insecurity in the United States calculated from the Current Population Survey's Food Security Supplement (FSS), generally releasing a report in September of each year that reports measures collected the prior December. The most recently available data are from 2018. The USDA measure is based on an 18-item survey that asks a range of questions from how often the household worried about having enough food to how often a child has gone for a day without eating.

Shorter surveys like the COVID Impact Survey take the validated approach of asking only a subset of the 18-item scale.[iii] Similarly, pediatricians screen their patients for food insecurity using one or two questions. The COVID Impact Survey has two measures of food security and asks respondents to indicate whether the statements were often, sometimes or never true for them or their households over the past 30 days. The statements are as follows:

1. *We worried our food would run out before we got money to buy more.*
2. *The food that we bought just didn't last, and we didn't have money to get more.*

For the main results, we code these as "yes" if they were often or sometimes true over the past 30 days. We primarily focus on the share of families that report their food "just didn't last" and they did not have money to get more—we refer to this concept as "food insecurity."

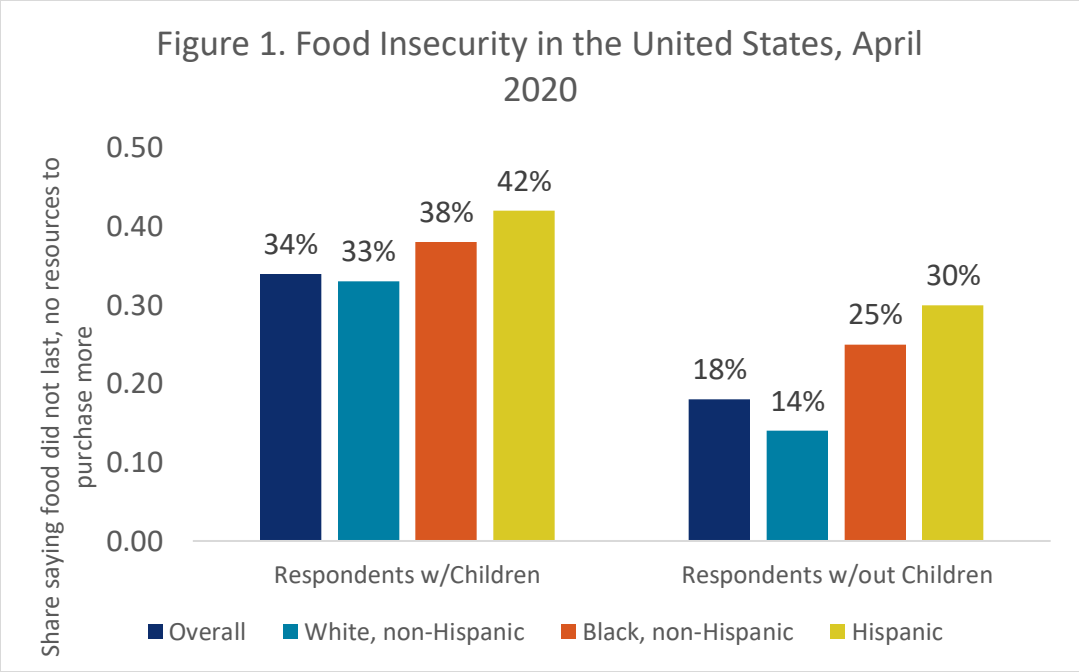


Figure 1 shows the share of respondents with and without children who reported food insecurity over the 30 days preceding their interview. Prior research has shown that households with children typically experience higher rates of food insecurity. During the COVID-19 pandemic, the loss of school meals has compounded this disadvantage. **Within families, though, adults do their best to protect children from hunger by cutting their own food intake first**. A recent survey that specifically asked whether children in a household were not eating enough because the family could not afford enough food found that 17% of mothers reported that their children were experiencing food insecurity. The level of children's food insecurity is a little less than half of the rate of food insecurity in households that contain children. The COVID Impact Survey analyzed here does not ask specifically about food insecurity among a respondent's children in a household and is limited to information about food insecurity in the household overall. As shown in the blue bars in Figure 1, more than 1 in 3 of households with children were food insecure, and approximately 2 in 5 black and Hispanic households with children were (orange and yellow bars).

Respondents without children had lower rates of food insecurity overall, at 18% their rate was just over half of the rate for those with children. Among respondents without children, both black and Hispanic respondents have higher rates of food insecurity than white respondents.

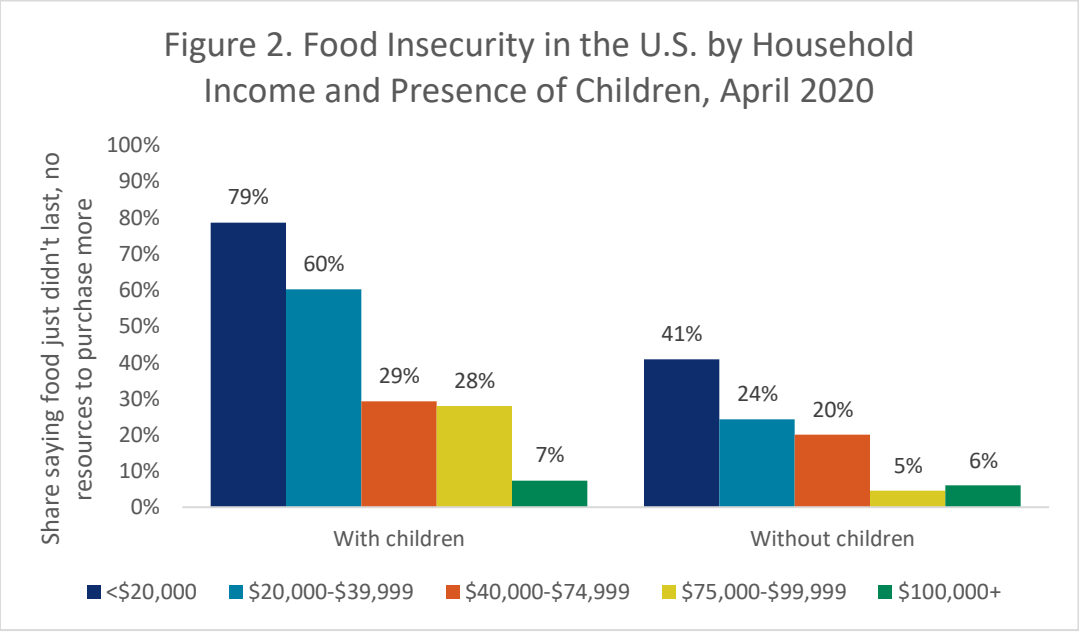
In Table 1, below, we reproduce the information in Figure 1, adding rates for respondents overall and rates of those responding that they were worried that their food would run out before they had money to purchase more. Respondents without children reported lower rates of food insecurity than did respondents overall or those with children. As is commonly found in the literature, higher shares of respondents answer affirmatively to the "worried" measure than the "didn't last" measure.

Overall, 28% of all respondents and 42% of those with children reported worrying about food running out. Over half of Hispanic respondents with children reported worrying that their food would run out.

Table 1. Comparing Two Measures of Food Insecurity

	All Respondents		Respondents w/ Children		Respondents w/out Children	
	Food just didn't last	Worried food would run out	Food just didn't last	Worried food would run out	Food just didn't last	Worried food would run out
	(1)	(2)	(3)	(4)	(5)	(6)
Overall	23%	28%	34%	42%	18%	22%
White, Non-Hispanic	18%	22%	33%	39%	14%	18%
Black, Non-Hispanic	29%	34%	38%	38%	25%	32%
Hispanic	34%	43%	42%	52%	30%	37%
Other, Non-Hispanic	25%	29%	24%	35%	26%	25%

Food security also varied by reported income, as shown in Figure 2. Consistent with prior research, food insecurity—as measured by reporting that "food just didn't last"—declines as income increases. Among respondents with children, nearly 4 in 5 with an annual income in 2019 below $20,000 report food insecurity in April, and 3 in 5 of those with annual incomes from $20,000–$39,999 reported food insecurity. Among those with last year's income between $40,000–$99,999, just under 3 in 10 reported food insecurity. Rates are lower, but still quite high, among respondents without children. Even 6% of respondents overall with incomes greater than $100,000 reported being food insecure (30% of these high-income food insecure respondents were laid off, furloughed, or unemployed).

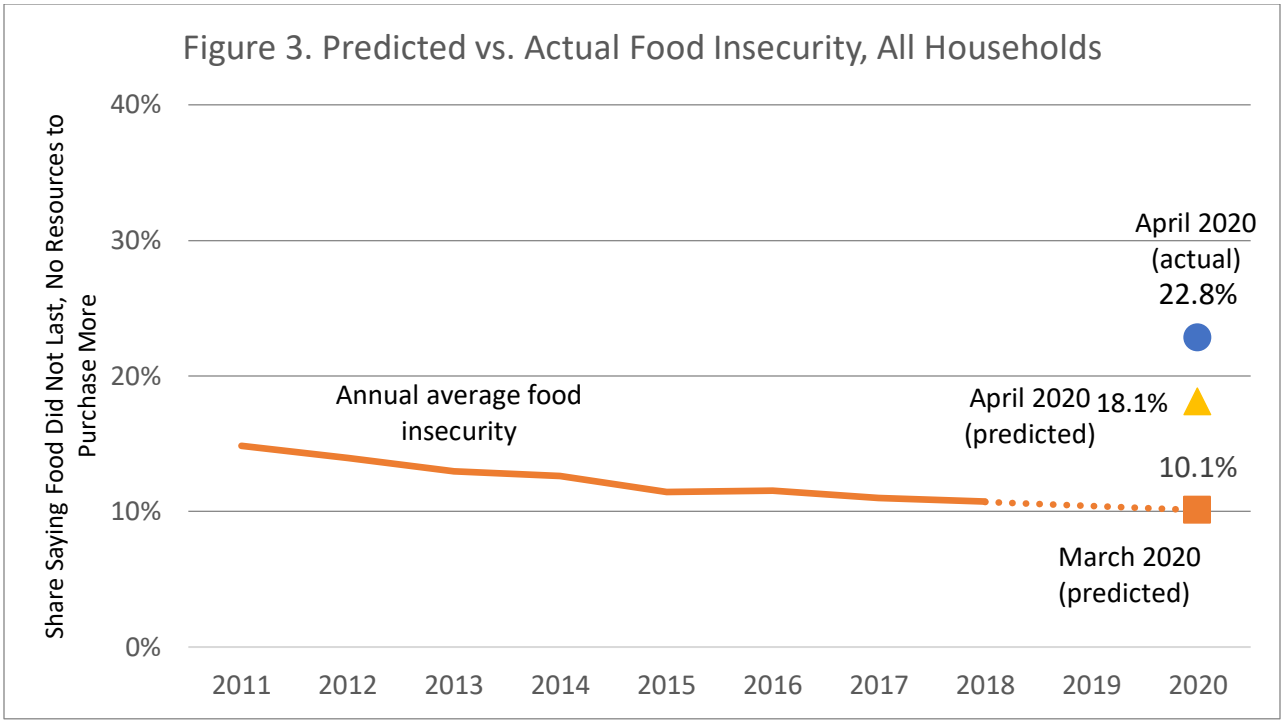


How Much Did Food Insecurity Increase in April 2020?

In order to estimate the increase in food insecurity that has accompanied the COVID-19 crisis, we compare the April 2020 COVID Impact Survey estimates to a set of estimates and predictions from the National Health Interview Survey (NHIS), a monthly survey that collects data on a broad range of health topics. The NHIS food insecurity module is comparable to the COVID Impact Survey because NHIS asks two questions which are very similar to the COVID Impact Survey, including our focal measure that over the past 30 days the food "just didn't last" and the household lacked resources to get more. NHIS interviews are conducted across all 12 months of the year, and data are available from 2011–18. The NHIS measure is preferable to the FSS in this case because it is measured across all months, and the FSS is only collected in December. **Our analysis indicates that there are important differences in food insecurity across months, with food insecurity typically lowest in March, April, and May.**

Figure 3, below, displays annual average food insecurity, measured from the NHIS, from 2011–18. Over this period, food insecurity rates were falling as the economy improved after the Great Recession. The downward trend in food insecurity likely would have continued through 2020 as the unemployment rate continued to fall. Since monthly unemployment rates are available through the first months of 2020—even though monthly food insecurity from the NHIS is not yet available past December 2018—we can predict what the food insecurity rate would have been based on a regression analysis model. To do so, we fit a linear regression model on the monthly NHIS food insecurity data, overall and for families with children, and for white, black and Hispanic subgroups. Explanatory variables include the own-group seasonally adjusted monthly unemployment rate for all workers ages 16 and older (e.g., overall unemployment for the model on food insecurity for the overall population, black unemployment for the model on food insecurity among black families, and so on), and calendar-month fixed effects.[iv] Note that the NHIS data allow us to estimate the extent to which food insecurity rates vary across months.

Food insecurity tends to be lowest in March, April, and May, possibly due to increases in disposable income in the weeks after lower-income families receive tax rebates. Food insecurity was predicted to hit its lowest point, 10.1%, in March 2020, 0.6 percentage points lower than the 2018 average and represented in the graph by the orange square.[v] **The food insecurity rate from the April COVID Impact Survey is 22.8%, represented by the blue dot on the graph, and is more than double the predicted level for March.** As described in more detail further below, the predicted food insecurity rate for April—based on the spike in unemployment that month—was 18.1%, shown in the yellow triangle.



Notes: The orange line is annual average share of families reporting that their food did not last, calculated from the NHIS. The orange square predicts the trend line to its March 2020 trough, and the yellow triangle predicts the April 2020 level, using a model with NHIS data and monthly unemployment rates. The blue circle is April 2020 food insecurity reported in the COVID Impact Survey.

Figure 4, below, repeats the prediction exercise for families with children, which tend to have higher rates of food insecurity than families overall. From 2011–18, the food insecurity rate in the NHIS among families with children declined from 19.1% to 12.0%. The March 2020 rate, predicted based on monthly unemployment and month fixed effects, was predicted to fall to 11.6%. The April level predicted by the unemployment rate increase was 24.4%. **Food insecurity in April from the COVID Impact Survey was 34.5%, a level more than three times the rate predicted for March.**

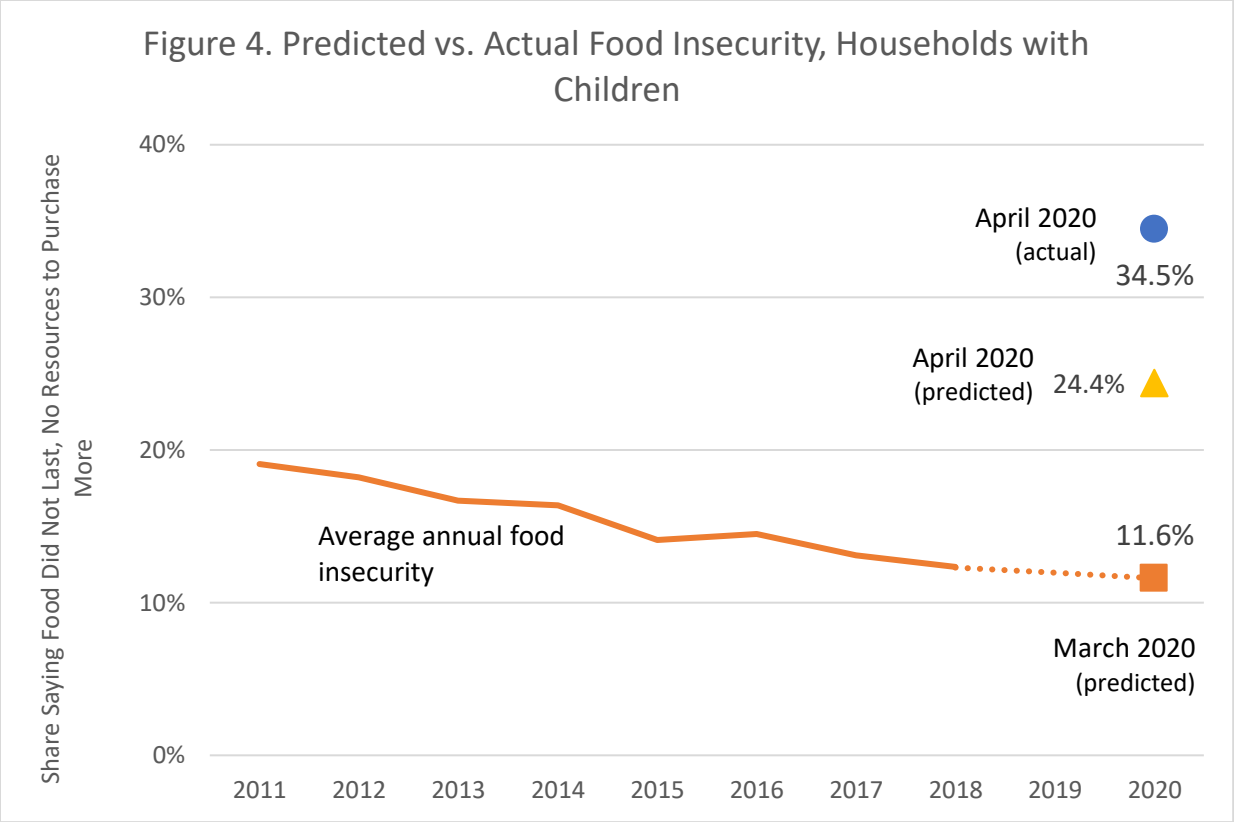


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Table 2 documents actual and predicted food insecurity for major racial/ethnic groups, with and without children:

- Column 1 presents April food insecurity rates from the COVID Impact Survey.
- Column 4 presents the 2018 average food insecurity from the NHIS.
- Column 3 presents predicted food insecurity in March 2020 based on monthly unemployment and fixed effects (fit separately for each row, regression results in the appendix).

Note that food insecurity was predicted to continue to fall across most groups, with the exception of Hispanics (for whom rates of unemployment had been starting to increase even before COVID-19).

The unemployment rate increased from 4.4% in March to 14.7% in April. A natural question is how much of the increase in food insecurity can be predicted by the increase in unemployment rate.

- Column 2 predicts the level of food insecurity based on the model and April unemployment rates.

Since April's unemployment rates were substantially higher than any monthly rate used in the model, this is an out-of-sample prediction and relies on strong assumptions about the relationship between food insecurity and unemployment being linear.

Food insecurity was predicted to increase in April to between 15% and 37%, depending on the subpopulation.

- Column 7 calculates the share of the observed increase in April that can be predicted by the model.

Most notably, food insecurity among those with children increased substantially more than what would be predicted based on the unemployment spike. **Overall, April 2020 food insecurity for children is 40% higher than it was predicted to be. Across subgroups, the unexplained share of the increase in food insecurity ranges from 70% among whites with children to 12% among Hispanics with children.** Some of the larger-than-predicted spike for those with children is likely explained by the loss of school meals. Since the COVID Impact Survey was conducted, there have been several policy responses that are expected to help address food insecurity among children. This includes the adoption in many states of the Pandemic-EBT (P-EBT) program that provides food benefits to children who have temporarily lost access to free and reduced-price school meals, and temporary emergency supplemental benefits to many SNAP participants. Future waves of the COVID Impact Survey will be able to measure to what extent food insecurity has stabilized or come down.

Table 2. Increase in Food Insecurity: Actual vs. Predicted, Various Models

	Measured Food Insecurity, April 2020	Predicted Food Insecurity, April 2020	Predicted Food Insecurity, March 2020	Measured Food Insecurity, 2018	Increase: April 2020 vs. Annual 2018	Increase: April 2020 vs. Predicted March	Increase: April 2020 vs. Predicted April
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: All Respondents							
Overall	22.8%	18.1%	10.1%	10.7%	213%	226%	126%
White	18.2%	14.5%	7.2%	7.7%	237%	252%	126%
Black	29.0%	26.7%	20.6%	21.4%	136%	141%	109%
Hispanic	34.2%	33.6%	17.0%	16.3%	210%	202%	102%
Panel B: Respondents with Children							
Overall	34.5%	24.4%	11.6%	12.3%	280%	297%	141%
White	32.9%	19.4%	8.7%	9.1%	360%	376%	170%
Black	37.7%	29.6%	19.8%	21.5%	176%	190%	127%
Hispanic	41.6%	37.1%	17.7%	16.3%	256%	235%	112%

Early Policy and Charity Responses to the COVID Crisis

It is important to have a safety net that responds, quickly, in time of crisis to help families continue to afford the things they need. The response of the safety net has been put under

great stresses in the short run—in part due to difficulties faced by agencies processing an historic surge in applications complicated by the need to implement social distancing among agency staff as well as outdated technology. As mentioned above, there have been some important policy measures adopted recently (including P-EBT and temporary emergency supplemental SNAP benefits) that may not yet be reflected in the food insecurity rates to the extent that the survey was collected prior to the implementation of these policies. Future waves of the COVID Impact Survey should be able to help track the impacts of policy changes.

The COVID Impact Survey collects information on those who reported that they applied, or tried to apply, for SNAP or Unemployment Insurance (UI) benefits in the prior seven days, as well as those who went to or attempted to go to a food pantry. An important limitation of the COVID Impact Survey when it comes to measuring SNAP and UI use is that the survey is better designed to measure recent flows onto SNAP and UI than to measure the share of the population currently on the program. The survey asked respondents whether they had received, applied for, or tried to apply for a number of programs *in the past seven days*. Since SNAP payments are made monthly, and the dates of payment within the month varies widely across states, it is likely that a substantial share of current SNAP recipients did not receive benefits within seven days and may have accurately answered no to this question. Indeed, our estimates based on administrative data suggest that 14.4% to 14.6% of households were on SNAP prior to COVID, but only 10% reported they were currently on SNAP in the COVID Impact Survey.

Similar concerns are present for UI. This limitation stems from the particular manner in which the question was asked, as is distinct from the well-documented understatement in participation in benefits programs on surveys in other contexts. The data indicate that 6% of respondents applied or tried to apply for SNAP in the prior week, and 12% applied or tried to apply for UI. Because of these limitations, we do not analyze SNAP or UI in detail in this report.

Instead, we focus analysis on the share who sought help from food pantries during the seven days prior to the survey. Media reports have highlighted the prominent role that food pantries have played in assisting families during the current crisis. **Overall, an astonishing 7% of respondents reported that they received assistance from a food pantry in the prior week**. Some respondents reported that they applied or tried to apply for food pantry assistance (but did not receive it)—perhaps due to long lines or limited hours at food pantries. **When these applications and attempted applications are included to the total, fully 1 in 10 respondents interacted with food banks in the prior week.** For context, the most comparable figure available is that the USDA reports that 4.4% of households (and 6.1% of those with children) obtained emergency food from food pantries one or more times during the year 2018.[vi]

Table 3 shows the extent of reported interaction with food pantries in the week prior to the survey, by presence of children. Among respondents with children, 9% reported receiving benefits from food pantries in the week prior to the survey, and 14.4% reported any interaction. The share of childless respondents reporting receiving benefits or having interactions with food pantries was 6.6% and 8.1%, respectively. An even higher share among

those experiencing food insecurity report receiving benefits from food pantries. Surprisingly, a lower share of food insecure respondents with children report receiving benefits from food pantries, though the broader measure including applying or attempting to apply shows no differences by presence of children.

Table 3. Interaction with Food Pantries, by Presence of Children and Food Insecurity

			If Food Insecure	
	Received	Any Interaction	Received	Any Interaction
	(1)	(2)	(3)	(4)
All Respondents	7.2%	9.8%	18.4%	27.9%
Respondents w/Children	8.8%	14.4%	14.4%	30.0%
Respondents w/out Children	6.6%	8.1%	21.4%	26.5%

Notes: "Any interaction" with a food pantry includes those who report receiving, applying, or trying to apply for assistance from a food pantry.

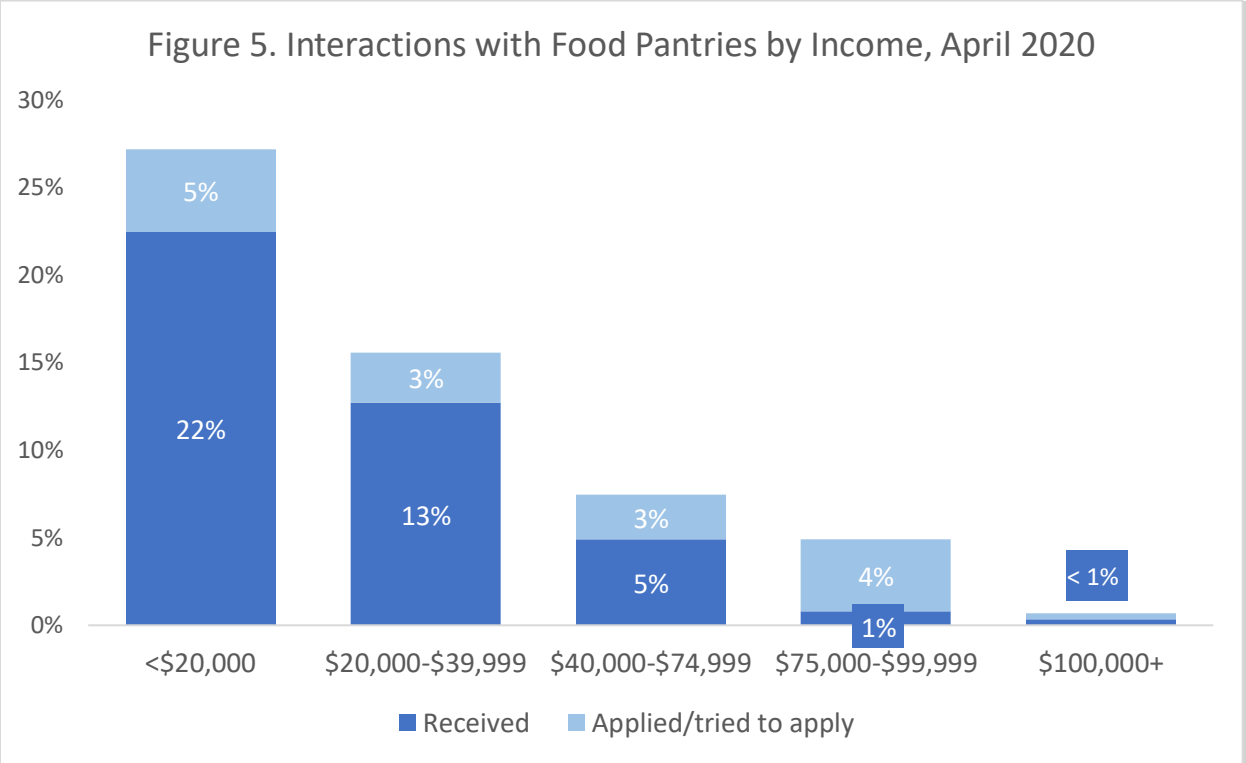

Figure 5 shows the share of respondents who interacted with a food pantry in the week prior to the COVID Impact Survey, by income level. The rates of interacting with food pantries in the prior week were quite high for all income levels below $40,000. More than 1 in 5 respondents with incomes of less than $20,000 received assistance from a food pantry, and more than 1 in 10 respondents with incomes between $20,000 and $39,999 received assistance from food

pantries. Even among households with income between $40,000 and $74,000, 5% of respondents reported receiving assistance from a food pantry.

Food Insecurity and Food Pantry Interactions, by State and Metropolitan Area

The COVID Impact Survey also collected representative information for a select set of states and metropolitan areas. These data allow us to estimate rates of food insecurity and food pantry use for 10 states and 8 metropolitan areas. Table 4 displays the results.

The state of Louisiana had the highest estimated rate of food insecurity, with more than 1 in 3 respondents reporting being food insecure. Approximately 1 in 4 respondents in California, Florida, Missouri, New York, and Texas were food insecure. Minnesota, Montana, and Colorado reported the lowest rates, ranging from 11%–16%. Colorado, Louisiana, New York, Oregon and Texas each had 1 in 10 or more respondents seeking assistance from a food pantry.

Among the metro areas, food insecurity was highest in the Birmingham, Columbus (OH), Chicago, and Phoenix metro areas. Over 10% of respondents in Cleveland, Columbus, and Phoenix sought or received assistance from a food pantry.

Table 4. Food Insecurity and Interaction with Food Pantries: Selected U.S. States and Metro Areas

	Food Insecure	Received	Applied/ Tried to Apply
California	26%	5%	3%
Colorado	16%	7%	6%
Florida	25%	2%	5%
Louisiana	36%	8%	4%
Minnesota	11%	5%	1%
Missouri	24%	7%	1%
Montana	14%	5%	0%
New York	26%	13%	2%
Oregon	21%	8%	1%
Texas	27%	10%	3%
Atlanta-Sandy Springs-Alpharetta, Georgia	17%	5%	3%
Baltimore-Columbia-Towson, Maryland	20%	4%	1%
Birmingham-Hoover, Alabama	27%	3%	4%
Chicago-Naperville-Elgin, Illinois-Indiana-Wisconsin	24%	4%	2%
Cleveland-Elyria, Ohio	22%	7%	4%
Columbus, Ohio	25%	7%	4%
Phoenix-Mesa-Chandler, Arizona	24%	11%	1%
Pittsburgh, Pennsylvania	13%	4%	1%

SUMMARY AND CONCLUSIONS

Results from the first wave of the COVID Impact Survey show that a large share of respondents experienced food insecurity in April 2020 during the COVID-19 health emergency. Relative to predicted rates for March, in April food insecurity doubled overall and tripled among those with children. Food insecurity increased by more than the April increase in the unemployment rate predicted it would, especially for families with children.

The extent of economic distress experienced by families requires an urgent and sustained response from the federal government. We will analyze food insecurity and related outcomes in future waves of the COVID Impact Survey to provide the evidence needed to track the evolution of both COVID-19's impact on the population and the response of the public and private sector.

[i] The authors thank Patricia Anderson, Lisa Barrow, Lauren Bauer, Kristin Butcher, Stacy Dean, Sheila Fleischhacker, Hilary Hoynes, Phil Levine, Joseph Llobrera, Dottie Rosenbaum, and Abigail Wozniak for helpful comments and discussions.

[ii] Abigail Wozniak, Joe Willey, Jennifer Benz, and Nick Hart. COVID Impact Survey: Version 1 [dataset]. Chicago, IL: National Opinion Research Center, 2020.

[iii] We demonstrate how the COVID Impact Survey measures compare to the USDA measures in a companion piece, Schanzenbach and Pitts (2020).

[iv] Regression models available in the appendix.

[v] The model predicts that the trough for the overall population and the white subpopulation was March 2020; for blacks and Hispanics predicted food insecurity reached its minimum in February and was predicted to start to increase in March. Evidence from an Urban Institute survey in the field at the end of March and early April found that food insecurity was already starting to spike at that point, with 22% of nonelderly adults reported their family experienced food insecurity in the prior month.

[vi] Both the COVID Impact Survey and the USDA survey likely understate the share using emergency food sources because they exclude homeless respondents and likely under-represent those who are tenuously housed.