



Enough to Eat: The Impact of COVID-19 on Food Insecurity and the Food Environment in L.A. County April 2020 – September 2021

Recommendations from the First 18 Months of the Pandemic
to Strengthen our Food Systems



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Disclaimer

The views expressed herein are those of the authors and not necessarily those of Los Angeles County, the USC Dornsife College of Letters, Arts and Sciences, the Keck School of Medicine, or the University of Southern California as a whole.

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Introduction

The onset of the COVID-19 pandemic in March 2020 posed unique and significant challenges for urban areas. The high concentrations of economic activity and population density made these regions hotspots for infections. With nearly 10 million residents accounting for 27% of California’s population, Los Angeles County was no exception. The county has been one of the hardest-hit urban areas in the United States throughout the course of the pandemic. Over the 18-month period from March 2020 to September 2021, the county has navigated through several infection “waves” that, to date, have caused more than 1.4 million recorded COVID-19 infections and 25,000 deaths.

To reduce the transmission of the disease and save lives, local authorities responded with a range of mitigation efforts, such as “safer at home” emergency orders that closed many public buildings and transitioned schools and workplaces online and “social distancing” protocols that minimized the number of people who could congregate in indoor spaces. A byproduct of these mandates was job loss and economic upheaval.

The mandates also led to changes to the local food landscape and where people accessed food. Some mandates required the adoption of new safety procedures in food outlets, such as grocery stores reducing their customer capacity to 20-50%, while others required the cessation of indoor service at bars and restaurants. For example, on March 16th, 2020, indoor dining in L.A. County was suspended, it resumed at the end of May 2020, and it was suspended again from July 1, 2020 through to March 12th, 2021, when second and third waves of infection took hold (see Appendix 1). At times, residents also lost access to meals at schools and community centers and were cut off from their social networks and the food support they provide. Broader disruptions to national and international food production and distribution systems also led to shortages and increased prices for some staple foods. All of these disruptions likely reduced food accessibility, particularly for low-income residents who are vulnerable to food insecurity.

Food insecurity refers to disruptions in food access and regular eating because of limited money or other resources. Although food insecurity often results in hunger, it is also linked to a host of negative physical and mental health outcomes for children and adults, including poor nutrition, problems with mental health, cognition, and sleep, and greater risk for diet-related diseases such as obesity, diabetes, and hypertension (Dhurandhar, 2016; Gundersen & Ziliak, 2015).

Our team of experts in public health, nutrition and food systems, spatial sciences, psychology, and public policy formed a strategic partnership with L.A. County’s Emergency Food Security Branch in April 2020 to monitor food insecurity, food access and diet in the county. The county established the Emergency Food Security Branch at the beginning of the pandemic as part of its emergency operations to address food security. For the past 16 months, our USC team and L.A. County have been working together to understand the impact of COVID-19 on the ability of county residents to access food.

Under this partnership, we documented a large increase in rates of food insecurity in 2020, particularly in the early stages of the pandemic, from April to May. We profiled those who experienced food insecurity and identified socioeconomic and racial and ethnic disparities, as well as key risk factors for food insecurity that included: low household income, recent unemployment, being 41–50 years old, and living in a larger household. We examined changes in diet during the pandemic and found that dietary changes, both healthy and unhealthy, were most commonly observed among those who experienced food insecurity. (See [de la Haye et al., 2020](#); [de la Haye et al., 2021](#); [Miller et al., 2021](#).)

We also sought to understand the impact of the many initiatives that help people access healthy food. At the onset of the pandemic, existing charitable and government food assistance programs expanded and adapted to meet changing needs, and new programs were launched. For example, CalFresh (also called the Supplemental Nutrition Assistance

Program, or SNAP, a critical food safety net for low-income families) benefits were expanded, and L.A. County programs were tailored to elderly adults to deliver meals to their homes and offer free delivery of pre-paid foods. Our research found that residents used a range of these community and government resources to mitigate food insecurity. These findings helped inform L.A. County's [COVID Food Assistance Grant Program](#) and guided various [L.A. City](#) initiatives to raise awareness of financial and food assistance resources for specific target audiences.

Following our earlier reports, **this final report summarizes the current state of food insecurity in L.A. County.** We find that rates of food insecurity have declined since the onset of the pandemic, but 1 in 10 households remained food insecure in the first half of 2021. This report also **describes access to food outlets and food assistance during the pandemic, and variability and vulnerability in food access,** using innovative data and analytics to understand the complexity of the L.A. County food environment. We conclude with recommendations based on this analysis and our 16 months of research.

In October 2021, L.A. County will build on the work it started with the Emergency Food Security Branch by joining with philanthropic partners to launch a Food Equity Roundtable, with the goal of increasing the resilience and equity of the food system and food access across the county. Reducing household and community vulnerabilities to food insecurity is critical as we transition into a post-pandemic world. At the same time, we must also promote nutrition security. This will be achieved when all people have physical, social, and economic access to food that is consumed in sufficient quantity and quality to meet their dietary needs and food preferences and is supported by an environment that allows for a healthy and active life (Ingram, 2020).

This work would not have been possible without the dedicated partnership and steadfast determination of the team at the L.A. County Emergency Food Security Branch as well as private sector partners Yelp and findhelp.org who generously shared a wealth of data on the L.A. County food environment. Our hope is that our work will continue to help community and government stakeholders identify outstanding needs and vulnerabilities in food access and food and nutrition security in the county, and inform strategies that strengthen the local food system, ensuring it is equitable, resilient and provides all people with sufficient access to healthy food.



Measures

In this report, our findings are based on the following data sources:

Understanding Coronavirus in America tracking survey

Our research uses data from USC Dornsife’s Understanding Coronavirus in America tracking survey to understand food insecurity among adults (18 years and older) during the COVID-19 crisis. Survey data were collected every 2 to 4 weeks from a representative sample of L.A. County households (N=1800). At each survey wave, participants reported on their experiences of food insecurity over the past week. We measured food insecurity using three items from the validated Food Insecurity Experience Survey that assess behavioral markers of mild, moderate, and severe levels of food insecurity experienced over the past 7 days (Cafiero, 2018). As is standard in research on food insecurity, a household is classified as being food insecure if they report experiencing moderate or severe levels of food insecurity. This report presents our key results after 31 waves of survey administration, assessed between April 2020 and July 2021. Other variables used in these analyses are measured at each wave (where indicated), or assessed at regular intervals to ensure they are current. For example, household income is assessed quarterly, and our analyses use the most recent indicator.

Yelp

Our team partnered with Yelp, the local search and review platform, to gather information about businesses labeled as food outlets within L.A. County from January 2019 to June 2021, including which ones have closed or stayed open. Their data includes information about all types of businesses that provide food, including street food vendors, farmers markets, convenience stores, fast- and full-service restaurants, supermarkets, and large big-box food retailers. The data used in the analysis for this report includes specific information about each food outlet: business name; location (geo coordinates and street address); descriptive “tags” that identify the type of business (e.g., restaurant, convenience store); and the dates between January 2019 to June 2021 when the business was permanently closed, temporarily closed, or had special operating hours.

Findhelp.org

Our team also partnered with findhelp.org, which provides a free search and referral platform (findhelp.org) to connect people seeking help with local free and reduced-cost programs, with dignity and ease. In December 2020, Findhelp.org shared their database of L.A. County food assistance providers. The data used in this report includes specific information about each food assistance program: the business/organization name; location (geo coordinates and street address); and descriptive service tags that categorize the type of food assistance provided (“meals,” “food pantry,” “emergency food,” and “food delivery.”)

Interviews with L.A. County Food Pantries

To understand the experience of food pantries during the COVID-19 pandemic, our team interviewed representatives of 12 food pantries in South L.A., a region of the county that experienced disproportionately high rates of food insecurity and that has a high ratio of food deserts and “food assistance deserts.” Interviews, which included closed-ended and open-ended questions, were conducted in Summer 2020.

Key Findings: L.A. County Residents

1. 1 in 3 L.A. County households experienced food insecurity during the COVID-19 pandemic in 2020, and they faced different challenges

Our research found that **1 in 3 households (34%)** in L.A. County experienced food insecurity between April and December 2020 (de la Haye et al., 2021). Those **with the greatest risk for food insecurity** were living in poverty or with low incomes. There were also other factors that increased vulnerability to food insecurity, including unemployment, young adulthood (18–50 years old) and living in a single-parent household. Food insecurity was much more common among Latino and African American residents compared to non-Hispanic White and was more prevalent in particular geographic regions. Our research also documented **many challenges with broader food access** among people experiencing food insecurity in L.A. County. A lack of personal transportation, food outlet closures or limited hours, and the inability to use food delivery services were common barriers reported among those experiencing food insecurity (de la Haye et al, 2020).

Federal, state, and local governments, as well as community-based organizations, responded to increased food needs — despite many challenges — by providing emergency food relief and stable food and financial assistance to low-income residents. Based on our survey data, we found that adults in L.A. County who experienced food insecurity accessed a variety of resources, including food pantries and other charitable food assistance, help from family and friends, and a range of government programs includ-



1 in 3 households (approximately 1.2 million households) in L.A. County experienced food insecurity between April and December 2020.

ing CalFresh (SNAP), WIC, Pandemic-EBT and other forms of financial assistance. We found that receipt of CalFresh benefits was associated with a lower risk for food insecurity (de la Haye et al, 2020), in line with historical literature on the benefits of SNAP. However, of the people who experienced food insecurity, the majority (78%) were not enrolled in CalFresh, and we estimated 38%–48% were likely eligible for CalFresh but not enrolled.

Overall, there are likely no “silver-bullet” solutions that will ensure equitable access to food, and food and nutrition security for all L.A. County residents. Transformation of the broader food system — by addressing multiple vulnerabilities — is likely to be more effective at reducing food insecurity in the future.

Note: The high rates of food insecurity found in our research are aligned with multiple reports that documented high rates of food insecurity and food insufficiency (the latter defined as whether a household had enough to eat, akin to very low food security) in the U.S. and California during the pandemic (e.g., Wolfson & Leung, 2020). The results are largely based on representative population surveys that include brief assessments of the past week or past month experiences of food insecurity or food insufficiency, measured at several time points during the pandemic. However, a recent U.S.D.A. report stated that food insecurity rates in the U.S. had not increased during the pandemic, but remained stable at 10.5% in 2019 and 2020 (Coleman-Jensen et al., 2021). They also reported a small decline in the average annual rates of food insecurity in California: an average of 9.8% from 2018 to 2020, compared to an average of 11.2% in 2015–2017.

One difference in the methods used in this U.S.D.A. report, compared to others, was that participants completed one survey in December 2020 and reported on their experience of food insecurity *over the past 12 months*. It is possible that participants who experienced food insecurity in the early months of the pandemic (April, May), and then transitioned to food security, were less likely to recall their experiences by the time they completed the survey in December, given decays in human memory over time. Differences in the survey measures of food insecurity used across the studies (e.g., measures of food insecurity vs. food insufficiency, or with single or multiple questions) may also contribute to some of the differences in estimated food insecurity rates. Future research should address these questions.

2. 1 in 10 L.A. County households remained food insecure in the first half of 2021

One in 10 (10%) households in L.A. County experienced food insecurity in the past week at some point from January to June 2021. When considering low-income households only (i.e., those with incomes below 300% of the federal poverty line [FPL]), 15% experienced food insecurity, while 4% of higher-income households ($\geq 300\%$ of FPL) experienced food insecurity.

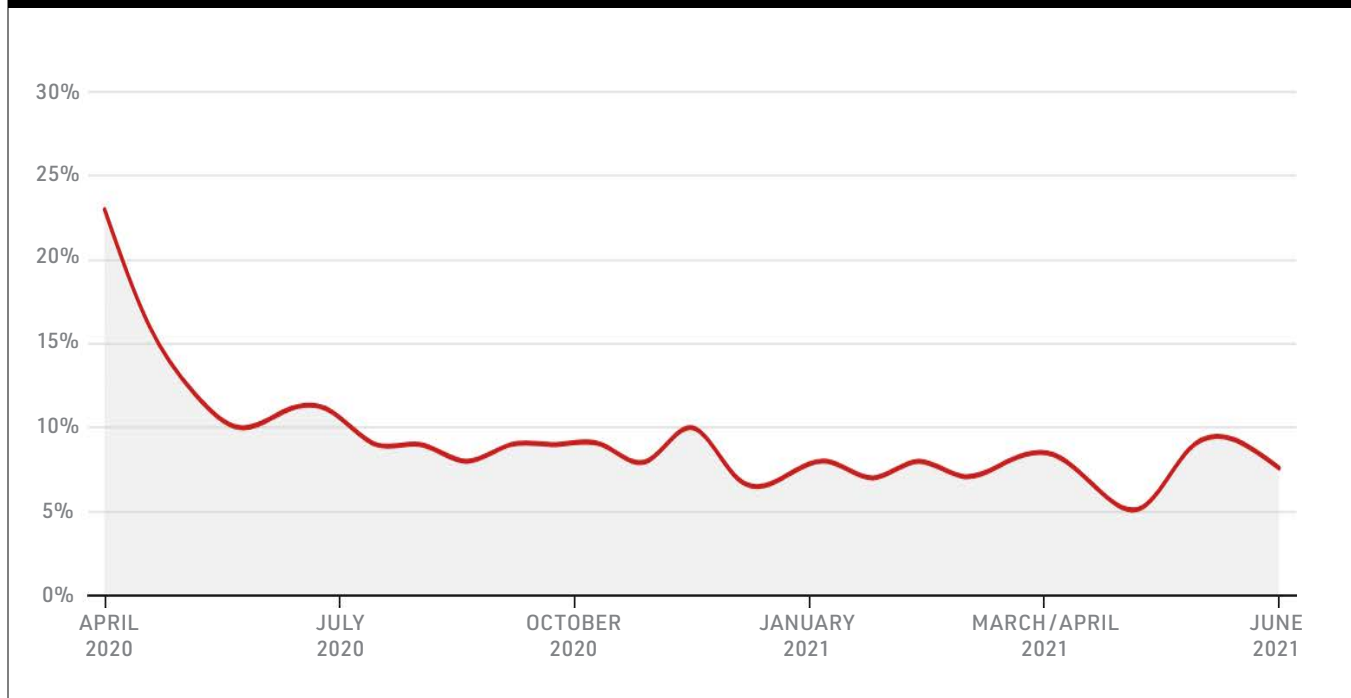
The rates of past week food insecurity for a given survey wave also fluctuated between 5% and 9% between January and June 2021, although these were not statistically significant differences. Additionally, we found that it was largely *the same households* fluctuating in and out of food insecurity over the 6 months, resulting in a total of 10% of households experiencing food insecurity over the full 6-month period.

These rates of food insecurity in the first half of 2021 were notably lower than rates at the onset of the COVID-19 pan-

dem. In April 2020, when we started our tracking survey, rates of past week food insecurity peaked at 23% and dropped to 10–12% by May.

The current rates of food insecurity in 2021 may be even lower than pre-pandemic levels. In 2018, 27% of *low-income* households experienced food insecurity at some point during the previous 12 months (LAC DPH, 2018). This is almost double the 15% of *low-income* households we have observed experiencing food insecurity in the first half of 2021. Given we found that it is largely the same households that have transitioned in and out of food insecurity in 2021, it seems unlikely that the proportion of low-income households with food insecurity would reach 27% by the end of the year. This positive transition may be attributable to the broad range of government and charitable food assistance initiatives that were launched or expanded in the initial months of the COVID-19 pandemic.

Figure 1. Rates of past week food insecurity in L.A. County households were highest in April 2020, when we started our tracking survey, and then fluctuated around 10% from June 2020 to June 2021.



3. Adults who remained food insecure in the first half of 2021 are predominantly low-income, Hispanic/Latino, and < 40 years old

Of the 1 in 10 (10%) of L.A. County adults who experienced food insecurity in the first half of 2021, the majority are low-income (82%), Hispanic/Latino (59%), 18–40 years old (59%), and female (61%). **Figure 2** summarizes their demographics.

In statistical models that test for multiple factors that could increase or decrease someone’s risk of food insecurity, several factors are independently associated with significantly higher odds of being food insecure from January to June 2021. We tested several factors, including gender, age, household income, education level, employment, status, and household size. The following characteristics all predicted food insecurity risk:

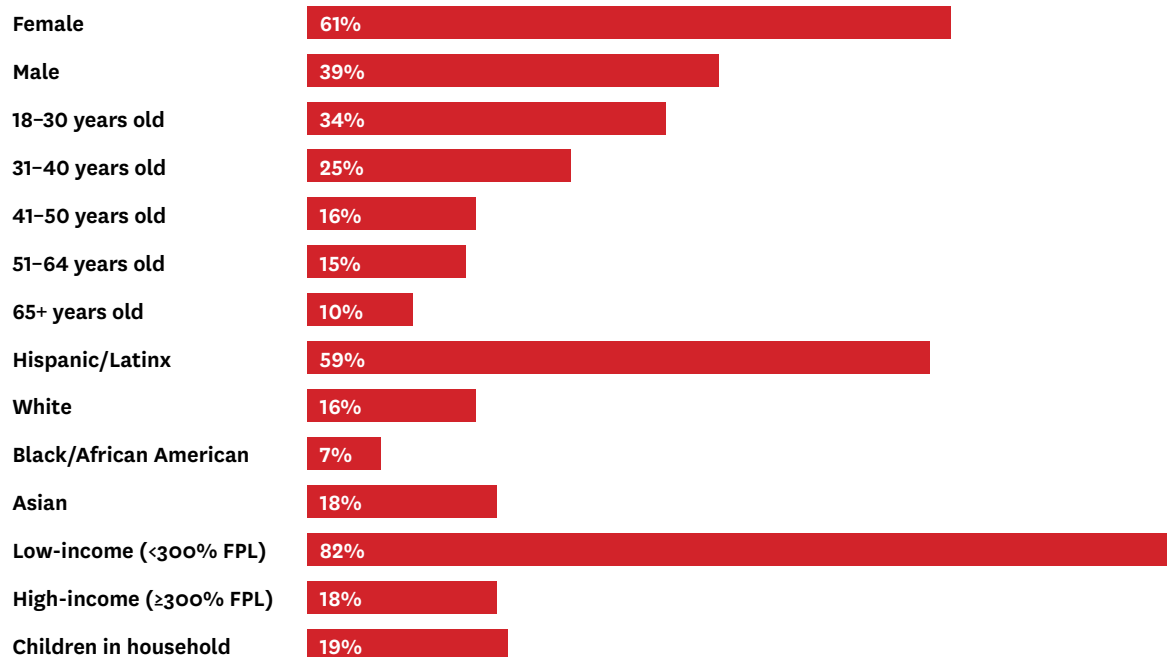
- As expected, and as we found during 2020, being **low-income** significantly increased the odds of being food insecure: People with a household income < 300% FPL had 2.8 times the likelihood of experiencing food insecurity compared to people with higher incomes. Over and above the effects of income, people who were

unemployed had 2.0 times the likelihood of being food insecure compared to people who were employed.

- After household income and employment status were accounted for, two other factors predicted food insecurity risk: (i) People **aged 18 to 30** had 1.7 times the likelihood of experiencing food insecurity compared to people 65 and older. (ii) People with **children in their households** (children of any age, from 0 to 18 years) had 2.4 times the likelihood of experiencing food insecurity compared to those without children. Importantly, this effect is significant even when accounting for household poverty level, computed based on household income relative to the number of people living in the household.

This 10% of L.A. County households who have remained food insecure in 2021 appear to face several barriers to food access and assistance. Just 1 in 4 (25%) of these households were receiving CalFresh benefits as of June 2021, and 37% of these households live in “food deserts” — low-income areas with poor access to grocery stores.

Figure 2. Demographic characteristics (%) of L.A. County adults who remained food insecure in the first 6 months of 2021 (N=108).



4. COVID-19 temporarily reduced the number of places L.A. County residents could buy food, particularly restaurants, affecting food access for low- and high-income residents

1 in 4 residents of L.A. County live in a “food desert,” meaning they live in a census tract where many residents are low-income and do not have close access to a supermarket (U.S.D.A., 2020). Although spatial access to a supermarket is just one of many possible barriers to accessing food, research prior to the COVID-19 pandemic found that living in a food desert reduces one’s access to quality, healthy foods and in some studies is associated with poor diets or related diseases (Walker et al, 2010). Our team heard anecdotes from local community organizations that the pandemic has exacerbated peoples’ difficulties in accessing food, especially when they are low-income and living in a food desert. However, getting data about the food environment, and how it has changed throughout the pandemic, has been a major challenge.

Our analyses of data from Yelp, the local search and review platform, revealed the richness of the food environment in L.A. County and provided *real-time information* about how it has changed. Using both business names and descriptive tags associated with the food outlets, we identified **111,451 food outlets** located in L.A. County between January 2019 and June 2021. This is more than

three times the number of food outlets (30,257) listed in L.A. County by traditional business listings (InfoUSA proprietary business listings from 2018). This may reflect a more comprehensive and diverse set of food sources captured by the crowdsourced Yelp data. These 111,451 food outlets were found to be concentrated in key “food corridors” across the county (**Figure 3**).

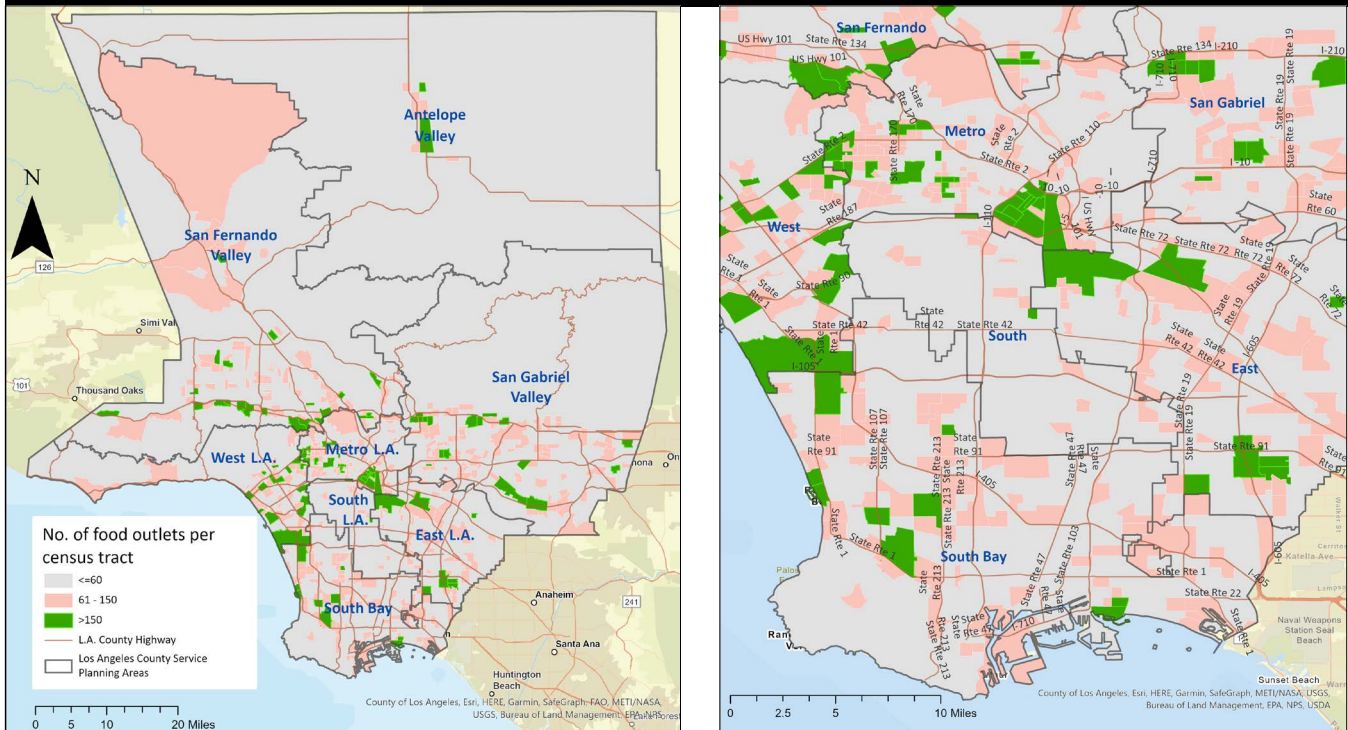
Of these 111,451 sources of food:

- The majority (90,428, or 81%) are restaurants, and of these, we identified 5,536 (6%) as known “fast food” chains.
- 15,592 (14%) are retail food outlets, and of these, the majority (12,529, or 80%) are grocery stores and supermarkets (including specialty markets and grocers). Other types of retail food outlets included convenience stores, big-box or ‘club’ stores (e.g., Walmart, Costco), and drug stores.
- The remaining 5,431 “other” food outlets include liquor stores (2,717, or 50%) and businesses whose primary focus was not food sales, but who nonetheless were tagged as a source of food (e.g., art stores, water stores, other shopping outlets).

Table 1. Of the 111,451 food outlets identified in L.A. County, the majority are restaurants (81%), and about 1 in 7 (14%) are retail food outlets.

| Primary Category | Total Number | % of All food outlets | Sub Category | Number | % of Primary Category |
|--------------------|--------------|-----------------------|-------------------------------------|--------|-----------------------|
| Restaurant | 90,428 | 81% | Bar/lounge | 3,974 | 4% |
| | | | Fast food | 5,536 | 6% |
| | | | Beverage/Bakery | 19,956 | 22% |
| | | | All other restaurant | 60,962 | 67% |
| | | | Grocery/supermarket | 12,529 | 80% |
| Retail Food Outlet | 15,592 | 14% | Big box | 186 | 1% |
| | | | Convenience | 2,131 | 14% |
| | | | Drugstore | 645 | 4% |
| | | | Other (e.g., discount store) | 101 | 1% |
| | | | Liquor store | 2,717 | 50% |
| Other | 5,431 | 5% | Other store (e.g., smoking lounges) | 2,714 | 50% |
| All food outlets | 111,451 | | | | |

Figure 3. The number of food outlets per census tract in L.A. County varies, with many of the 111,451 food outlets in the county concentrated in key “food corridors” – census tracts with more than 150 food outlets – that are depicted in green.



[Click here to view the interactive map](#)

We observed changes to the L.A. County food environment during COVID-19 due to an increase in food outlet closures, largely among restaurants.

As L.A. County navigated through multiple waves of the pandemic, mandates prohibiting indoor (and sometimes outdoor) dining, implementation of new safety protocols, and other disruptions to the economic and food system impacted the operations of many food businesses. However, it was unclear if or how this affected the closure of restaurants and retail food outlets — and thus residents’ food access — given that many food outlets pivoted their operations to provide delivery or “contactless pickup” options for groceries and prepared food and beverages, and many restaurants set up outdoor “alfresco” dining options.

Using Yelp data on openings and closures of 111,451 food outlets in L.A. County, **we found an increase in the number of food outlet closures during the pandemic.** As shown in **Table 2**, there was an average of 3,845 food outlet closures (temporary and permanent) per 12 months during the pandemic (calculated using data from March 2020 to June 2021), compared to an average of 3,289 food outlet closures per 12 months pre-pandemic (calculated using data from January 2019 to February 2020). This is a 17% increase in the average number of annual closures for

all food outlets.

Table 2 also shows that **the increase in food outlet closures occurred largely among restaurants:** There was a 20% increase in the average number of annual restaurant closures during the pandemic (3,526 during the pandemic vs. 2,940 pre-pandemic). For retail food outlets, the average number of annual closures did not meaningfully change (256 pre-pandemic vs. 244 during the-pandemic). Notably, the only type of retail food outlet with an increase in closures during the pandemic was drug stores (which were labeled with a “food” tag in the Yelp database); the average number of annual closures was 15 pre-pandemic, vs. 64 during the pandemic.

The increase in food outlet closures during the pandemic was attributed to a spike in temporary closures during key “waves” of COVID-19 infection in L.A. County, which varied based on the type of food outlet.

There was a 17% increase in food outlet closures during the pandemic.

Table 2. The number of food outlet closures (average per 12 months) in L.A. County was higher during the COVID-19 pandemic (from March 2020 to June 2021) compared to the 14 months preceding the pandemic (January 2019 to February 2020).

| Primary Category | Sub Category | Average Number of Closures per 12 months | | |
|-------------------------|-----------------------------------|--|--------------|-------------|
| | | Pre-Pandemic | Pandemic | Change Rate |
| Restaurant | Bar/lounge | 184 | 419 | 127% |
| | Fast food | 114 | 220 | 93% |
| | Beverage/Bakery | 657 | 759 | 15% |
| | All other restaurant | 1,984 | 2,129 | 7% |
| | All Restaurant | 2,940 | 3,526 | 20% |
| Retail Food Outlet | Grocery/supermarket | 199 | 158 | -21% |
| | Big box | 2 | 1 | - |
| | Convenience | 39 | 22 | -45% |
| | Drugstore | 15 | 64 | 313% |
| | Other (e.g., discount store) | 1 | 0 | - |
| | All Retail Food Outlet | 256 | 244 | -5% |
| Other | Liquor store | 58 | 39 | -33% |
| | Other store (e.g. smoking lounge) | 34 | 37 | 7% |
| | All Other | 93 | 87 | -6% |
| All food outlets | | 3,289 | 3,845 | 17% |

Figure 4. The percentage of food outlets with permanent and temporary closures each month from January 2019 to June 2021 showing spikes in temporary closures at the onset of the pandemic in March 2020 for restaurants and "other" food outlets and a spike in temporary closures in June 2020 for retail food outlets.

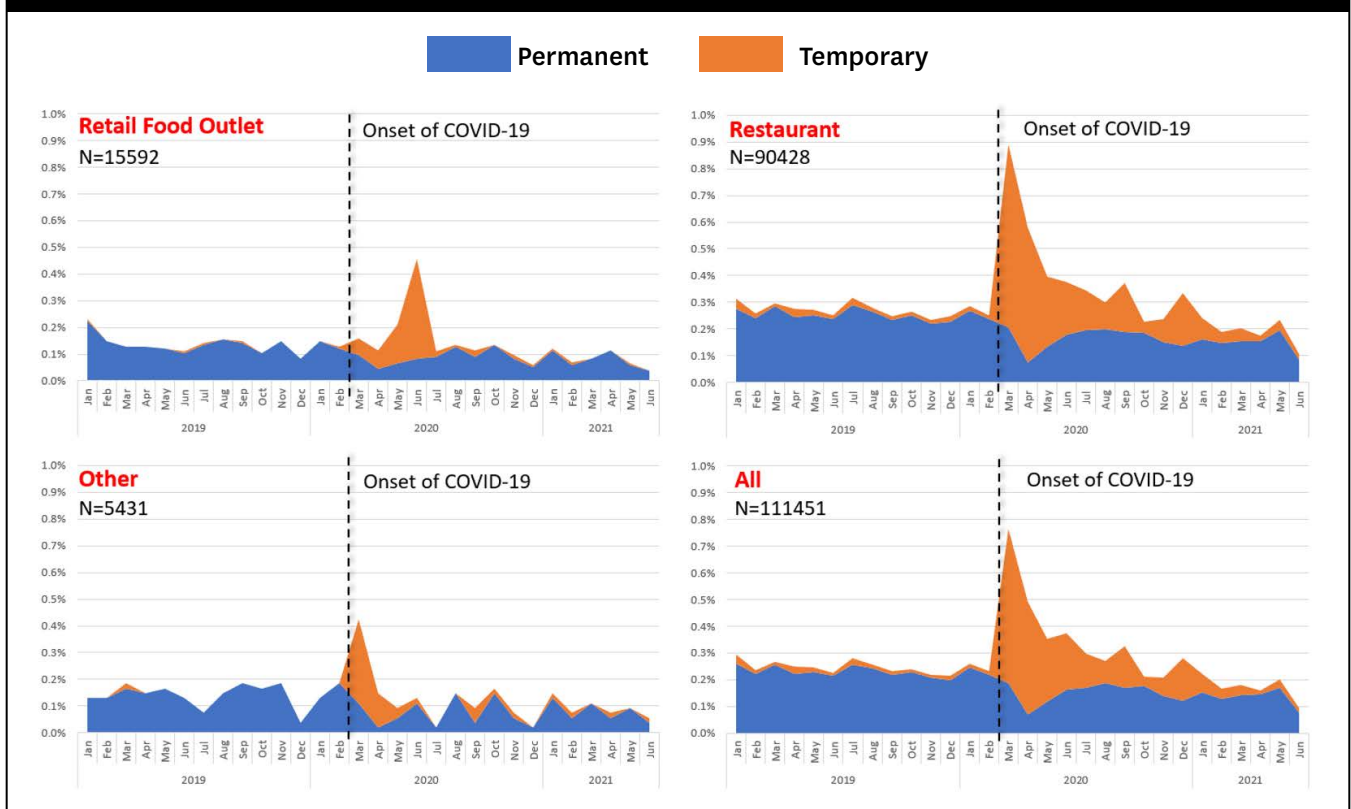


Figure 4 shows that the increase in food outlet closures was driven by *temporary closures* specifically (orange area), while the rates of *permanent closures* (blue area) were actually lower during the pandemic compared to the pre-pandemic period. **In March 2020, 852 of all food outlets were recorded as having closed: 644 temporarily and 208 permanently.** Temporary closures were found to last from 1 to 384 days, with the average time from closure to re-opening being 24 days. (See **Figure 5**).

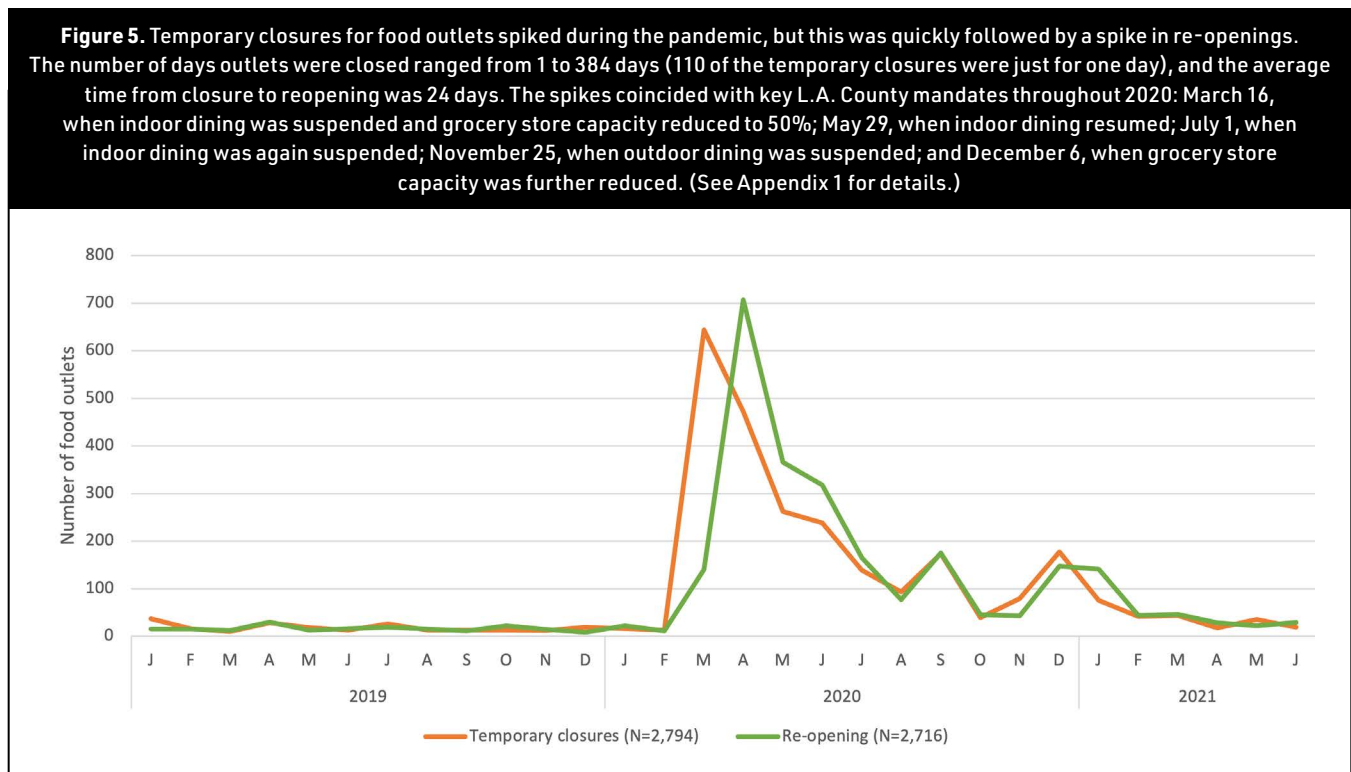
Increases in temporary closures were expected given the time-bound mandates banning indoor dining and drinking at bars at key stages of the pandemic. It is plausible that the rates of permanent closures in food outlets dropped during the pandemic while more businesses were “on hold” with temporary closures, or due to government business support and possibly fewer new food retail openings affecting competition.

The spikes in temporary closures also varied based on food outlet type (**Figure 4**). Restaurant closures were especially high in March 2020, during the initial “wave” of virus outbreak in L.A. County, when **617 restaurants were listed as having temporarily closed.** This coincided with L.A. County mandates that suspended indoor dining on March 16, 2020. However, retail food outlet closures peaked in June 2020, with **58 temporary closures** that month, at the time of the second COVID-19 wave.

The different timing of the increased closures for restaurants vs. retail food is worth exploring in future work. The highest number of restaurant closures may have occurred in March 2020 because this was when the first indoor dining ban went into effect, and many restaurants temporarily closed. In the subsequent weeks and months, these same restaurants may have come up with strategies to stay open and provide outdoor options (e.g., alfresco dining) and/or delivery food services that helped them stay open through later stages of the pandemic, including subsequent indoor dining bans. The June 2020 spike in temporary closures among food retail outlets may have several explanations. This coincided with protests related to the murder of George Floyd, which prompted many retail outlets in L.A. to board their storefronts and temporarily close. Alternatively, there may have been a lagged effect of the pandemic onset on temporary closures among food retail, after the initial rush of grocery shopping and “grocery hoarding” had subsided, and major challenges to the food distribution systems started to ripple down to retailers.

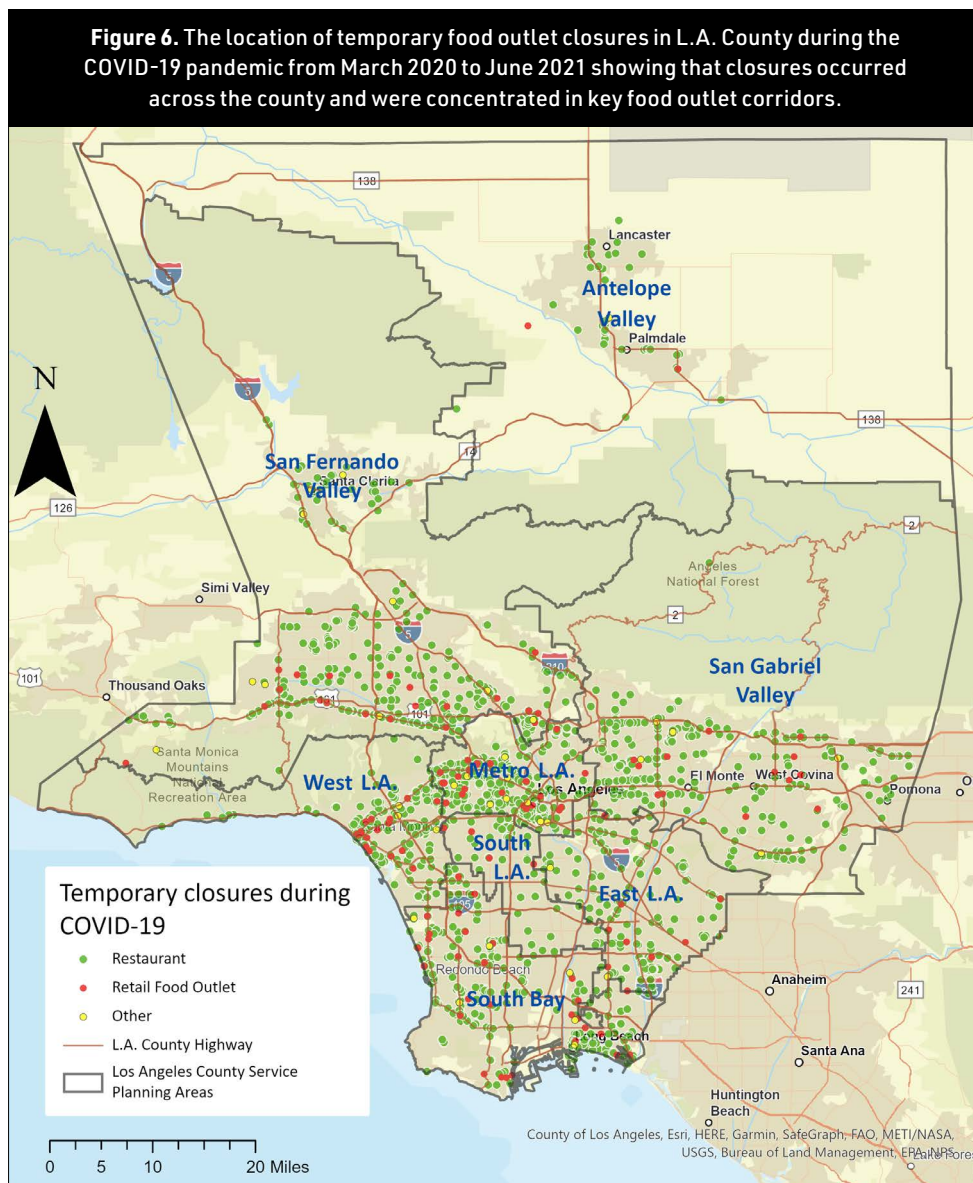
Overall, the waves of temporary closures help to identify the time periods when the impacts of the pandemic on the “last mile” of the food system were the most serious.

By examining where food outlet closures occurred in L.A. County, we found that closures impacted well-resourced and under-resourced neighborhoods.



We compared the numbers of food outlet closures in low-income vs. high-income census tracts, and within food desert vs. non-food desert census tracts. Overall, **we found that the increased number of closures during the pandemic period, compared to the pre-pandemic period, occurred in all types of census tracts.** For example, the average number of food outlet closures per month increased in low-income census tracts (128 per month pre-pandemic vs. 135 per month during the pandemic) and in high-income census tracts (145 per month pre-pandemic vs. 184 per month during the pandemic). Similarly, the average number of food outlet closures per month increased in food desert census tracts (42 per month pre-pandemic vs. 46 per month during the pandemic) and in non-food desert census tracts (231 per month pre-pandemic vs. 273 per month during the pandemic).

In sum, food outlets in L.A. County were temporarily closed at a higher rate during the pandemic, and this was largely driven by the closure of restaurants. This may present a meaningful barrier to food access because about one-third of calories that Americans with low-incomes consume comes from food prepared outside of the home, with $\approx 15\%$ of calories coming from fast food restaurants and $\approx 5\%$ coming from full service restaurants (Saksena et al., 2018). Although the reduction in access to restaurants and some other food outlets affected both high- and low-income neighborhoods, it is likely that low-income residents were the most negatively affected by food outlet closures because they are already more likely to face other challenges to food access including: food insecurity, finding food assistance, and navigating public transportation to safely pick up food.



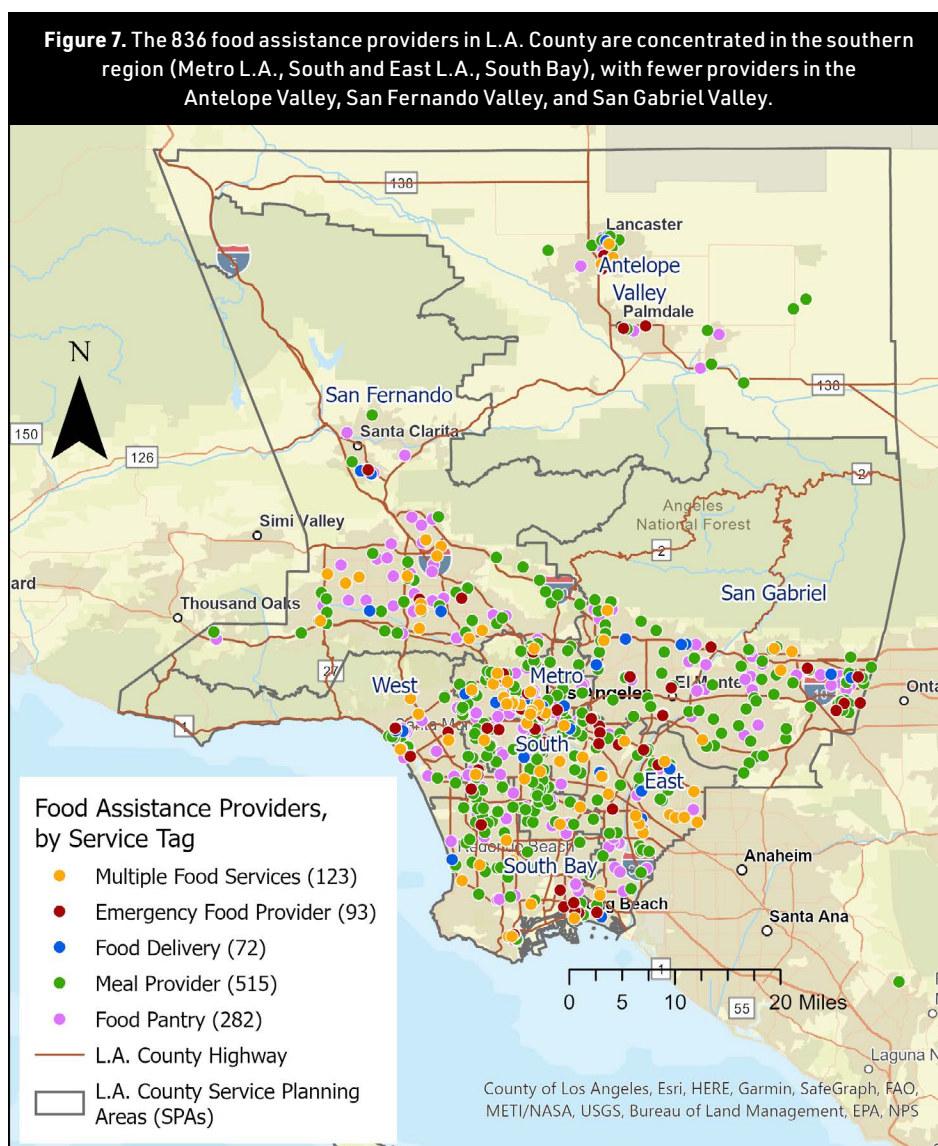
[Click here to view the interactive map](#)

5. Food assistance providers are found throughout the L.A. County food landscape, but there remain inequities in access, particularly in the Antelope Valley and South L.A.

Community-based organizations providing charitable food assistance are an essential part of the L.A. County food system and food assistance landscape, playing a key role in alleviating immediate food needs. Our survey research found that in September 2020, 8% of the L.A. County population, and 17% of households that had experienced food insecurity in the previous week, had recently used a food pantry. People use charitable or community food assistance programs for many reasons: They may not be enrolled in government food assistance programs for

many reasons, such as ineligibility, immigration concerns, lack of knowledge, and perceived stigma; or they may be receiving government food assistance but it may not be adequately meeting their households food needs.

Findhelp.org curates comprehensive networks of service providers in every ZIP code in the U.S., including organizations that provide food assistance. Using their dataset of service providers operating in L.A. County in 2020, we identified 836 food assistance organizations that had



[Click here to view the interactive map](#)

the following service tags: “Meals” (62%), “Food Pantry” (34%), “Emergency Food” (11%), and “Food Delivery” (9%). Of the 836 organizations, 15% (123) had more than one type of food service tag.

There is notable variability in access to food assistance across cities within L.A. County, given their needs. Food pantries and meal providers were unequally distributed across regions of the county with high numbers of low-income residents, who are at higher risk for food insecurity. Using data from the 2015–2019 American Community Survey 5-year estimates, we computed the number of food pantry/meal providers per 10,000 low-income residents in each city and unincorporated area.

One city, Irwindale, had more than 10 food assistance providers per 10,000 low-income residents. The majority of cities had two or fewer food assistance providers per 10,000 low-income residents, and the majority of cities in the lowest quartile of provider-to-low-income population ratio were located in the San Gabriel Valley (8 cities) and East L.A. (6 cities). The 10 cities with large low-income populations and the lowest provider-to-population ratios are listed in **Table 3**. Also, 19 of the 88 incorporated cities had no food pantries or meal services listed in the findhelp.org dataset, although the vast majority were wealthy cities.

Many L.A. County neighborhoods, particularly in the Antelope Valley, East L.A., and South L.A., face a double burden of food deserts and food assistance

Many L.A. low-income communities face a double burden of living in food deserts and food assistance deserts.

deserts, based on our dataset from findhelp.org. About 23% of L.A. County census tracts are “food deserts,” meaning they are low-income areas that don’t have good access to a supermarket (i.e., more than 20% of residents live more than 0.5 miles [in urban areas] or 10 miles [in rural areas] from a supermarket). About 1 in 4 L.A. County residents (24%) live in this type of food desert (USDA, 2020). *Note: Of the census tracts in L.A. County, only 2% (53 of 2,343) are classified as “rural” by the USDA.*

Combining this information with the data from findhelp.org, we found that **many food desert census tracts are also “food assistance deserts”**: 77% of food desert census tracts have no food pantry/meal providers within the census tract, and 24% of food desert census tracts do not have a food pantry/meal provider within 0.5 miles. Many of these areas with the double burden of low access to supermarkets *and* food assistance are located in low-income communities of color in South and East L.A. (**Figure 8**). This likely creates many barriers to healthy food access *and* emergency food access for these residents, particularly those without personal transportation.

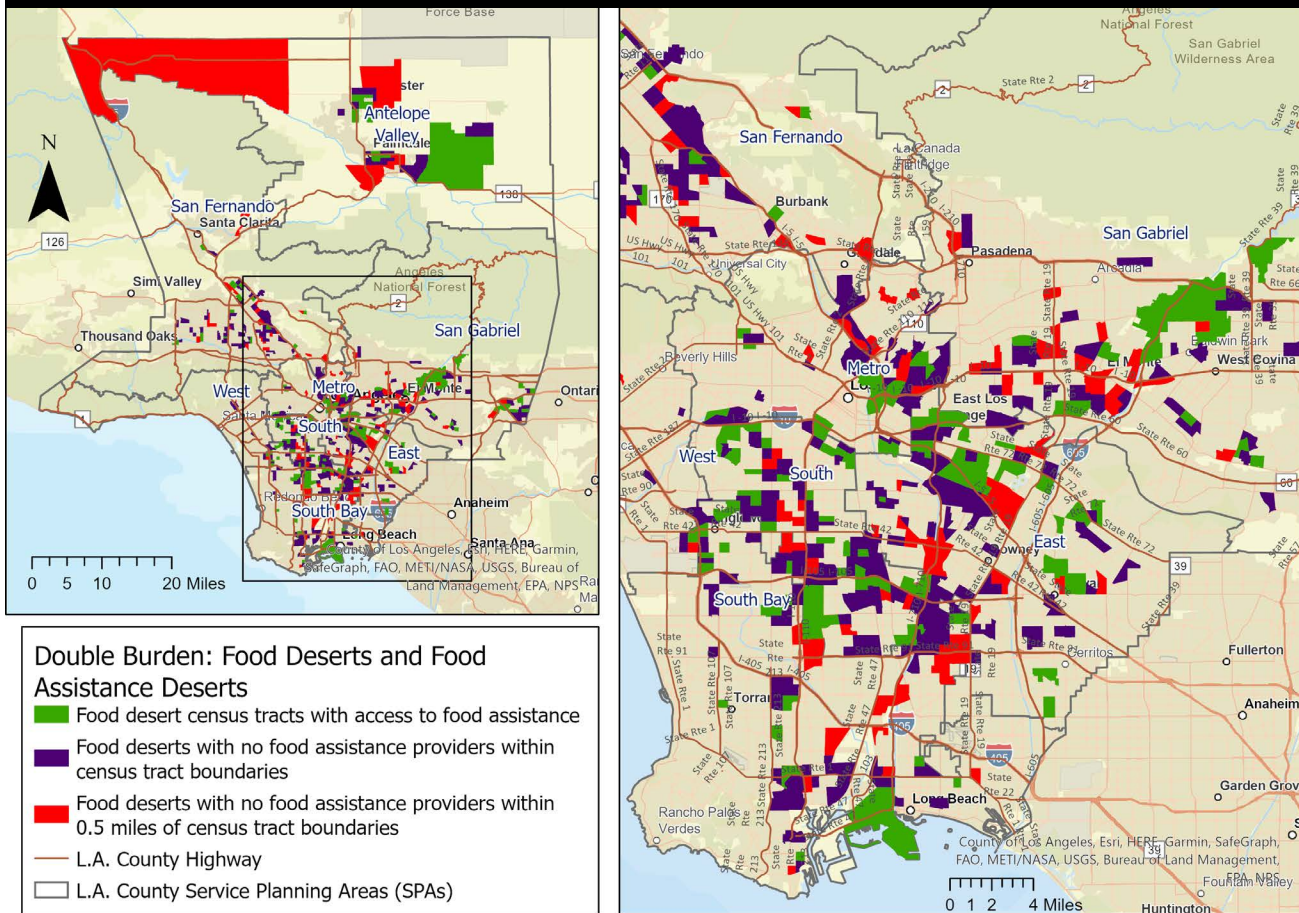
Table 3. Cities in L.A. County with the fewest food pantries and meal providers per low-income residents.

| City | # of Food Assistance Providers | # of Low-Income Residents | # of Providers per 10,000 Low-Income Residents |
|-----------------|--------------------------------|---------------------------|--|
| Carson | 2 | 37,472 | 0.53 |
| Lawndale | 1 | 19,277 | 0.52 |
| Cudahy | 1 | 19,797 | 0.51 |
| El Monte | 4 | 79,580 | 0.50 |
| Palmdale | 4 | 95,037 | 0.42 |
| La Puente | 1 | 24,440 | 0.41 |
| Bell | 1 | 27,614 | 0.36 |
| Monterey Park | 1 | 30,959 | 0.32 |
| Huntington Park | 1 | 45,844 | 0.22 |
| South Gate | 1 | 64,494 | 0.16 |

Two regions of particular concern are the Antelope Valley (SPA 1) and South L.A. (SPA 6), where about half of all census tracts are food deserts, *and* about 1 in 3 census tracts are food deserts that did not have a food pantry/meal provider within the census tract boundary (**Figure 9**). In the next section of this report, we narrow our focus to the food assistance landscape in South L.A. by interviewing food pantries in this SPA.

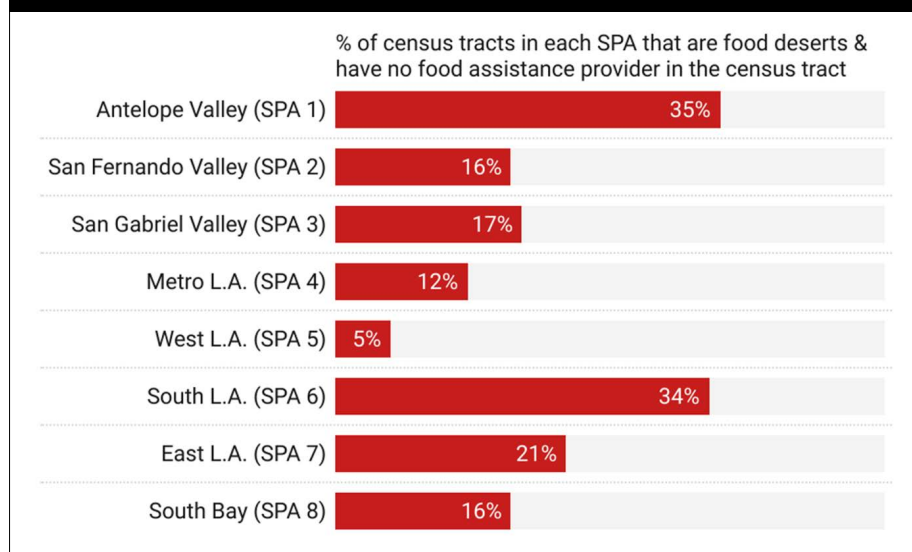
Note: The data used in this section are from findhelp.org as of December 2020. We may be updating this section in the future with additional information and data partners.

Figure 8. Census tracts that are (a) food deserts (Low income and low access to supermarkets; GREEN), (b) food deserts with no food assistance providers within their census tract boundaries (PURPLE), and (c) food deserts with no food assistance providers within their census tract boundaries or within 0.5 miles of their boundaries (RED) are primarily located in the southern region of L.A. County and clustered around the interstate highways.



[Click here to view the interactive map](#)

Figure 9. Considering these double burden food and food assistance deserts from the perspective of service planning areas (SPAs) in L.A. County, the SPAs that have the higher percentage of their total census tracts that face these burdens are the Antelope Valley (SPA 1) and South L.A. (SPA 6).



6. Many residents in South L.A. faced a double burden of food deserts and food assistance deserts, and interviews with food pantries in this area revealed the many challenges faced by providers during the pandemic.

To understand the experience of food pantries during the COVID-19 pandemic, our team interviewed representatives of 12 food pantries in South L.A., a region of the county that experienced disproportionately high rates of food insecurity and that has a high ratio of food deserts and food assistance deserts. Interviews were conducted in Summer 2020.

These 12 pantries reported that they served a diverse set of clients in terms of age, income, and needs. All 12 provided grocery pickup either by car or foot, but just 3 of the 12 provided ready-to-eat/pre-prepared meals by pickup. Delivery options for both groceries and meals were limited. L.A. Regional Food Bank, which provides food for more than 900,000 individuals monthly in L.A. County, was a primary source of food for 9 of the 12 pantries.

Key challenges at the onset of the COVID-19 pandemic. Food pantries revealed challenges faced during the pandemic that can be summarized in four major themes:

(1) Increased need: Most pantries reported a substantial increase in clients seeking food assistance in the first months of the pandemic.

| | |
|-----------|---|
| Pantry #2 | <i>“There are a lot of families that come — the number has tripled — so staffing to accommodate it is a challenge.”</i> |
| Pantry #8 | <i>“People come from all over Southern California, as far as San Diego.”</i> |
| Pantry #1 | <i>“Many have lost their jobs and are laid off, which drives up the number of families we serve.”</i> |

(2) Resource shortages: Half of the interviewed organizations reported a dearth of perishable foods. Notably, shortages also extended to a lack of operational equipment for food such as fridges and industrial freezers for pre-packaged meals.

| | |
|------------|--|
| Pantry #10 | <i>“Not enough food — there are many people that have a desperate need for assistance. People line up around the block in their cars at 8 a.m....”</i> |
| Pantry #12 | <i>“We could use more money. There is rent to pay, supplies to get, there is overhead.”</i> |

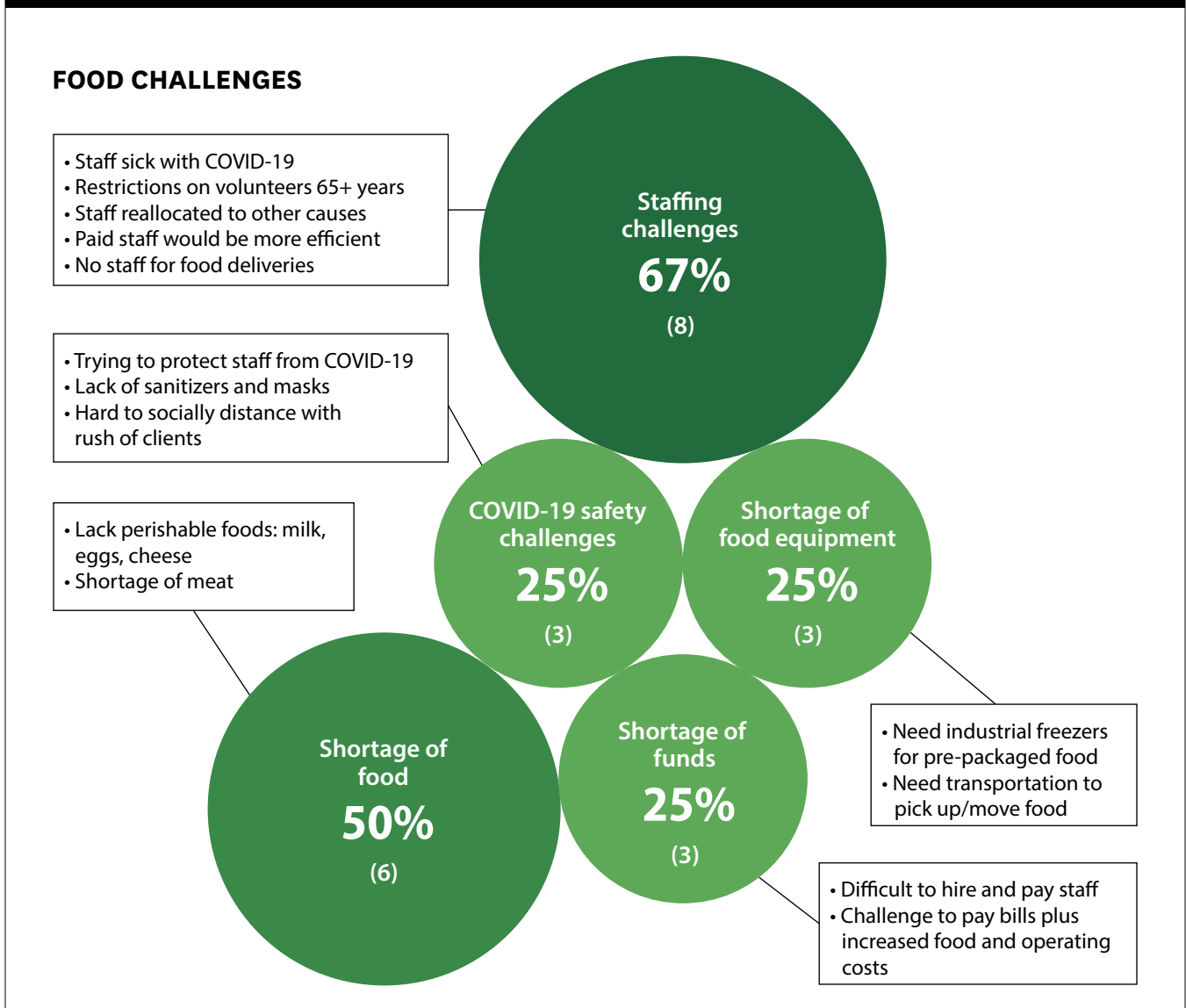
(3) Staffing challenges: Staffing and volunteer turnout were difficult for a majority of the interviewed organizations due to COVID-19 infections, age restrictions on volunteers, and a reallocation of staff towards different causes during the pandemic.

| | |
|------------|---|
| Pantry #5 | <i>“Some staff did not return because they didn’t know if their job will put them at risk of getting the virus.”</i> |
| Pantry #10 | <i>“Several staff members and participants have tested positive for COVID, so there has been some shifting of staff members to keep (the) program running.”</i> |

(4) New COVID-19 protocols: A challenge expressed by half of the organizations pertained to implementing new protocols to protect clients and staff from COVID-19, such as securing personal protective equipment (PPE), implementing training for social distancing, and shifting from indoor to outdoor facilities and services (e.g., drive up collection of food). These new protocols not only required more equipment, such as freezers for pre-packaged meals, but informants also expressed that they dismantled the social connection between food pantries and the communities they serve.

| | |
|-------------------------|---|
| <p>Pantry #1</p> | <p><i>[When asked about challenges faced due to COVID-19]: “Getting protective equipment, maintaining safety among staff and public (sanitizers, etc.), delays in food deliveries, providing emergency food deliveries.”</i></p> |
| <p>Pantry #6</p> | <p><i>“[We are serving] mostly pre-packaged food due to safety protocols of the pandemic, which is a less personal experience. Initially, [we] were able to converse with people picking up food, but now everyone is wearing masks, we can’t talk, and must quickly come in and out. There is no community feeling anymore.”</i></p> |

Figure 10. Gaps in resources and key needs described by South L.A. food pantries in Summer 2020 (% and number out of 12). Staffing challenges were the most commonly reported, followed by shortage of food, and shortage of funds, food equipment, and PPE.



Recommendations

These findings paint a complex and challenging picture of the L.A. County food system during a crisis. They point to several areas where policymakers, nonprofits, and private sector partners can learn from the experiences of COVID-19 and prepare for future crises and their impact on the regional food system as well as the ability of county residents to access food. Based on these findings, our research team makes the following recommendations, which aim to address key risk factors, eliminate barriers to food insecurity, and improve food system equity in L.A. County.

Addressing Food Insecurity

- Continue dedicating resources to eliminating food insecurity in L.A. County, targeting the ≈10% of households that remained food insecure in 2021 with initiatives that:
 - Promote and expand programs that **reduce poverty and increase incomes** because this is the primary factor that makes households vulnerable to food insecurity during a crisis, and causes persistent food insecurity as the crisis subsides.
 - **Increase enrollment in CalFresh** among low-income households. Many eligible residents are not enrolled, despite the program demonstrably reducing food insecurity. Resources could be dedicated to implementing research that identifies barriers to enrollment and designing communications and outreach programs, and/or creating structural program changes, based on findings to increase enrollment.
 - Promote and expand programs that **serve residents who have other risk factors for food insecurity** (unemployed, 18-to-30-year-olds, and households with children), such as CalWorks and Pandemic-EBT.

Addressing Food Environments And Food Access

- Conduct qualitative interviews with low-income county residents to **collect community perspectives** on the ways that features of the food environment — including limited access to supermarkets and/or limited access to food assistance programs — impact their lived experience of accessing food, particularly during the pandemic when there was an increase in food outlet closures.
- Provide **additional support to charitable food assistance programs** to meet the increased need for food, equipment, supplies, personnel, etc., during crises. Given the urgency of ensuring these food assistance programs work efficiently during a crisis, L.A. County might consider options like a county-wide joint procurement arrangement for key supplies, surge hiring bonuses, or other measures to support continuity of operations. There may also be new opportunities for private food companies to contribute to this network of food assistance.
- Include **equitable geographic access to healthy food and food assistance** outlets in urban planning strategies, such as:
 - Policy and planning strategies to improve access to healthy foods in food deserts, such as partnerships that incentivize food businesses to sell affordable healthy items in those areas.
 - Consider peoples' access to key food corridors — areas of the county with concentrations of food outlets — and how transportation to these areas could be facilitated for low-income residents without personal transportation.
 - Support the expansion of food assistance programs in the Antelope Valley and South L.A., for example through outreach, partnering with local organizations, or establishing new programs.

Building A More Resilient And Equitable Food System

- **Establish emergency infrastructure that monitors changes and identifies vulnerabilities in the food system during a crisis**, so that they can be quickly addressed. Key metrics include food insecurity rates, diet and nutrition, food retail landscape, changes and shortages in the food supply chain, and food assistance programs.
- **Build partnerships with the private sector before a crisis hits**. As our experience demonstrates, private companies like Yelp and findhelp.org have rich data on urban food environments. This data can be much more detailed than official sources. Therefore, private companies are critical partners in understanding what is happening to the food environment during a crisis so programs to mitigate the impacts of food outlet closures and food assistance deserts can be targeted with more precision. Developing strong relationships between the public and private sectors can pave the way for rapid response during a crisis.
- **Use a multidimensional approach**. There is no “silver bullet” solution to achieve food security and equitable access to healthy food across L.A. County. Thus, plan for transformations of the local food system that will address multiple touch points, such as eliminating food insecurity; making healthy foods more accessible, affordable, and convenient for all residents; and addressing vulnerabilities in the network of food assistance programs.

Next Steps

Our research team will continue its work on the issue of food security and healthy food access through a new project, “Smart and Connected Community Food Systems,” funded by the National Science Foundation (Award No. 21256160). Through this project, we will grow our partnership with the County of Los Angeles, and their newly established Food Equity Roundtable, as well as our valuable data partners. The project objectives are to work with these partners to co-develop a new approach to monitor and understand food systems, food access, and food security, and to build a comprehensive data portal that connects stakeholders with this information and flags the issues most in need of intervention. Our long-term vision is to pioneer a new paradigm of monitoring the complex and dynamic nature of community food systems that will ultimately help communities across the country to develop resilient food systems that support food and nutrition security for all.



Supporting Information

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Survey Methodology

Sections of this report are based on data from the Understanding Coronavirus in America tracking survey, administered by the USC Dornsife Center for Economic and Social Research (CESR). Respondents are members of CESR's Understanding America Study (UAS) probability-based Internet panel who participated in tracking survey waves conducted between April 1, 2020, and July 7, 2021. All respondents are 18 or older, and sampling is representative of all households in L.A. County. The survey is conducted in English and Spanish. All results are weighted to CPS benchmarks, accounting for sample design and non-response. The sample size for survey waves used in this report ranges from 1,082 to 1,158. Participants were recruited for the UAS Internet panel using an ABS household sample; methodological details for the UAS panel are available at <https://uasdata.usc.edu>. The Understanding Coronavirus in America Tracking Survey has been funded in part by the Bill & Melinda Gates Foundation, the University of Southern California, and many others who have contributed questions to individual waves or sets of waves.

Sample sizes and MOSE for subgroups in this analysis

Analysis of the survey data in Section 2 and Section 3 on food insecurity rates among all households had a sample size of 1,082 to 1,158 participants, with a MOSE of +/- 3 percentage points. Analysis in this section on food insecurity rates among low-income households had a MOSE of +/- 4 percentage points.

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Appendix

Appendix Table 1. A timeline of COVID-19 related dining and food outlet closures and restrictions in L.A. County.

| | |
|-------------------|---|
| March 16, 2020 | Indoor dining suspended; farmers markets prepared foods suspended; grocery stores reduced to 50% capacity |
| May 29, 2020 | Indoor dining resumed |
| July 1, 2020 | Indoor dining suspended |
| November 12, 2020 | Farmers market prepared foods resumed |
| November 19, 2020 | Outdoor dining capacity limited to 50%, and outdoor dining must be closed between 10 p.m. and 5 a.m. |
| November 25, 2020 | Outdoor dining suspended |
| December 6, 2020 | Grocery store and certified farmers market capacity limited to 20% |
| December 9, 2020 | Grocery store and certified farmers market capacity increased to 35% |
| January 29, 2021 | Outdoor dining resumes; removed outdoor dining closure requirements between 10 p.m. and 5 a.m. |
| March 12, 2021 | Indoor dining resumes at 25% maximum capacity or 100 persons, whichever is fewer; grocery store capacity increased to 50% |
| April 5, 2021 | Indoor dining capacity increased to 50% of maximum capacity or 200 persons, whichever is fewer |
| June 15, 2021 | Normal operations resume |