

Emergency food provision for children and families during the COVID-19 pandemic: Examples from five U.S. cities

Becca B.R. Jablonski\*, Colorado State University  
Joy Casnovsky, Sustainable Food Center  
Jill K. Clark, Ohio State University  
Rebecca Cleary, Colorado State University  
Beth Feingold, State University of New York at Albany  
Darcy Freedman, Case Western Reserve University  
Steven Gray, Michigan State University  
Xiaobo Romeiko, State University of New York at Albany  
Laura Schmitt Olabisi, Michigan State University  
Mariana Torres, State University of New York at Albany  
Alexandra E. van den Berg, UTHealth School of Public Health at Austin  
Colleen Walsh, Cleveland State University  
Chelsea Wentworth, Michigan State University

\*corresponding author, Department of Agricultural and Resource Economics, Colorado State University, B325 Clark Building, Fort Collins, CO 80523, USA, Becca.Jablonski@colostate.edu, 970-491-6133 (tel)

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Abstract: As lockdown and school closure policies were implemented in response to the coronavirus, the federal government provided funding and relaxed its rules to support emergency food provision, but not guidance on best practices for effectiveness. Accordingly, cities developed a diverse patchwork of emergency feeding programs. This article uses qualitative data to provide insight into emergency food provision developed in five cities to serve children and families. Based on our qualitative analysis, we find that the effectiveness of local approaches appears to depend on: 1) cross-sector collaboration, 2) supply chains, and 3) addressing gaps in service to increased risk populations.

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## Introduction

Lockdown, stay-at-home, and school closure policies in response to the spread of the novel coronavirus and its associated disease, COVID-19, have the potential to exacerbate the risk of food insecurity that low-income households face. They may reduce or eliminate both income streams available to some households and programs designed to relieve child food insecurity. The National School Lunch Program (NSLP), for example, is the second largest food and nutrition assistance programs in the United States (U.S.) (Gundersen and Ziliak 2018; Guthrie and Ralston 2019), feeding 84% of low-income, food-insecure households with school-age children (Ralston et al. 2017). Most studies of the NSLP and such similarly designed feeding programs such as the School Breakfast Program (SBP) find that they are associated with significantly lower rates of food insecurity for households with children, as well as improved diet quality and academic performance (Ralston et al. 2017; Gundersen and Ziliak 2018). Thus, there is concern that when schools close, the nutrition and food security of children fed through these programs may be threatened.

When schools closed due the pandemic, federal funding and relaxation of rules that ensure reimbursement to school districts, states, and other food service providers proliferated (USDA FNS 2020a). However, there has been no federal mandate that schools offer food service during closures or federal guidance on best practices to simultaneously encourage continued participation by families and reduce the spread of COVID-19. Thus, school districts, which are not trained to design effective policy, have had to decide if and how to implement summer feeding funds despite concerns that summer feeding programs only reach 17% of children who usually receive free or reduced-price meals during the school year (Feeding America 2019). In addition, summer feeding programs do not follow the same strict nutritional standards as the

NSLP, in part because they have not been updated since 2000 (Hopkins and Gunther 2015). Accordingly, local governments and their partners quickly developed their own programming and policies, resulting in a diverse patchwork of emergency feeding programs to support children and families across the U.S. The policies and programs that were adopted and/or expanded by cities has potential consequences that are not well-understood across the food system.

These concerns recently led an interdisciplinary network of food system researchers to map the complex food system of five different urban areas across the U.S. We looked across projects to examine what the cities were doing to support emergency food service provision to children and families in need and indicators associated with the effectiveness of local approaches. We focus on families with school-aged children, given that they are particularly vulnerable (Gundersen and Ziliak 2018) and that food insecurity among children is associated with increased risks of birth defects, anemia, lower nutrient intakes, cognitive problems, and aggression and anxiety (Gundersen and Ziliak 2014).

To explore the impact on families, we conducted semi-structured interviews and focus groups with key informants who are involved with COVID-related emergency food service provision, particularly for households with K-12 aged children. We find that the lack of clear guidelines about the role of the NSLP and SBP in supporting continued feeding programs resulted in each school district and city making different decisions about their response. Our results point to several indicators of effectiveness of local approaches, including 1) cross-sector collaboration, 2) adaptable supply chains, and 3) addressing gaps in services to increased-risk populations.<sup>1</sup>

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<sup>1</sup> Note that as this paper is focused on five urban locations, its results are likely not generalizable to nonurban areas. The Center for Disease Control and Prevention importantly points out that the 26 million Americans that live in rural areas face distinctive challenges during the COVID-19 pandemic (CDC 2020b).

We make two contributions to the literature on pandemic food-assistance response. First, we document local responses to the pandemic specifically aimed at supporting households with K-12-aged children post-school closures. Second, taking advantage of our research networks' recent urban food system mapping, we draw upon existing community relationships to provide an overview of policy and programming consequences across types of emergency food intervention to understand what may impact the effectiveness of different strategies in supporting emergency food provision to children and families in need.

This article proceeds as follows. First, we present a brief review of causes and consequences of food insecurity and the effectiveness of the four largest food assistance programs pre-pandemic, followed by a review of selected national food assistance programs introduced or modified to address pandemic-related issues. Next, we discuss our methods, including providing more context on the five urban areas included in our study. Results and discussion are organized by themes that emerged based on interviews and focus groups, which help to characterize indicators of the effectiveness of different approaches. We end with conclusions and questions for future research.

### **Food Insecurity and Emergency Food Assistance Programs**

An extensive review of the causes and consequences of food insecurity and the ability of food assistance programs to mitigate it in the pre-pandemic U.S. can be found in Gundersen and Ziliak (2018). Particularly important for the current pandemic, sharp changes in asset levels negatively influence food security. Negative income shocks, income volatility, and job loss have been experienced at unprecedented scale during the pandemic and are all associated with food insecurity (Ribar and Hamrick 2003; Heflin, Corcoran, and Siefert 2007; Leete and Bania 2010; Gjertson 2016). Additionally, households at a high risk of homelessness (Gundersen et al. 2003)

and households that have chaotic meals and meal planning efforts (Fiese et al. 2016) also experience food insecurity at an elevated rate.

Food assistance programs have been found to decrease food insecurity (Gundersen, Kreider, and Pepper 2017). The four largest food assistance programs in the U.S., in terms of value, are the Supplemental Nutrition Assistance Program (SNAP); the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); the NSLP; and the SBP.

- SNAP provides benefits that can be used to purchase most foods (there are a few exceptions, such as prepared foods) based on net income and household size.<sup>2</sup>

Participation in SNAP has been found to decrease the prevalence of food insecurity in households with children by at least six percentage points (Gundersen and Ziliak 2018).

- WIC provides supplemental food, nutrition education, and health care referrals to low-income infants, children, and pregnant, postpartum, and breastfeeding women (Oliveira and Gundersen 2001). WIC has been found to reduce the prevalence of child food insecurity by about 3.6 percentage points (Kreider, Pepper, and Roy 2016).
- NSLP and SBP provide free and reduced-price lunches and breakfasts to households that meet income eligibility and have children enrolled in an NSLP or SBP school. Meals must meet national dietary standards of healthfulness. The NSLP has been found to decrease food insecurity among households with children in school by 2.3 to 9 percentage points (Gundersen, Kreider, and Pepper 2012).

#### *Selected National Food Assistance Programs Modified for the Pandemic*

Under pandemic conditions, including school closures, the U.S. Department of Agriculture Food and Nutrition Service (USDA FNS) has provided significant flexibility to

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<sup>2</sup> For a description of the design and implementation of SNAP, please see Gundersen and Zilliak (2018) or Bartfeld (2015).

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states across its 15 nutrition programs (USDA FNS 2020a).<sup>3</sup> This lack of a cohesive approach has enabled diverse approaches to meeting the changing needs of low-income households with children, but it has also led to a heterogeneity of local policies and program implementation by authorities who have had to rely solely on their limited resources and experiences to design policy responses.

The Families First Coronavirus Act (FFCA) provides supplemental federal funding for the WIC program, commodity assistance, and nutrition waivers for schools (USDA FNS 2020d). Examples of waivers in the FFCA include the Community Eligibility Provision (USDA FNS 2020e), the Meal Pattern Flexibility Provision (USDA FNS 2020c), and the congregate meal waiver (USDA FNS 2020b). The first allows school districts to feed anyone who comes to get food from one of its feeding programs, regardless of documented need. The National Meal Pattern waiver, which provides flexibility for what food is given out, allows a school district that has trouble accessing fruit one week to provide different options without risking losing its meals' reimbursable status. The congregate meal waiver enables the Summer Food Service Program and NSLP Seamless Summer Option sponsors to serve meals in non-congregate settings, enabling school food authorities to offer grab-and-go style meals, deliver meals, distribute meals for multiple days, and offer meals for parents or custodians to pick up without children present.

There are concerns, however, that even though additional funding is allocated for these programs, guidelines on how to utilize the funds effectively are lacking and states and local governments may utilize allocated funding to achieve different goals with varying levels of

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<sup>3</sup> Some examples of USDA FNS' Federal exemptions and waivers to existing feeding programs include: Pandemic-EBT, Nationwide Meal Times Waiver, Nationwide Non-congregate Feeding Waiver, Nationwide Waiver to Allow Offer Versus Serve Flexibility for Senior High Schools in NSLP for School Year, Nationwide Afterschool Activity Waiver, Nationwide Meal Pattern Waiver, Nationwide Parent/Guardian Meal Pick-up Waiver, Fresh Fruit and Vegetable Program Parent Pick Up Waiver, Fresh Fruit and Vegetable Program Alternate Sites Waiver, Nationwide Community Eligibility Provision Data Waiver, Nationwide Waivers of Child Nutrition Monitoring, Area Eligibility Waivers, 60-Day Reporting Waiver, Nationwide Waiver of Food Management Company Contract Duration Requirements, and Nationwide Waiver of Local School Wellness Assessments (USDA FNS 2020a).

effectiveness and coverage. As an example, the waiver may result in reduced dietary quality for meals served to children.

## Methods

A unique network of five teams of interdisciplinary, university-based food systems researchers conducted this study. The five teams are each involved in mapping their own urban food systems. Thus, in March 2020, as cities had to quickly respond to the realities of the pandemic, these researchers were well-positioned to evaluate broad, system-level changes occurring in the food systems, as they had previously demonstrated bridge-building between organizations working with the local food systems and across scientific disciplines to apply for funds to carry out their research.<sup>4</sup> Accordingly, this article uses the experiences, insights, and networks of these teams to provide information on changes that occurred within the emergency food service system due to COVID-19 and to begin to describe the effectiveness of food system interventions taken to respond to school closures and provide emergency food service support to children and/or families with children.

The five city-based project teams focus on Albany, NY; Austin, TX; Cleveland, OH; Denver, CO; and Flint, MI. Table 1 presents some comparative demographic data across each of the cities, as well as for the entire U.S. The focus cities have populations ranging from 307,117 (Albany) to 1,248,743 (Austin). Two of the cities have white alone populations higher than the

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<sup>4</sup> In 2017, the Foundation for Food and Agriculture Research (FFAR) released a Request for Applications (RFA) for its pilot Tipping Points program, part of its 'Urban Food System' challenge area. The RFA called for applications from projects that were using computational and mathematical approaches to deepen understandings of the complex relationship between the food system, health, and the environment. Applicants had to leverage at least \$750,000 worth of funding already being spent on existing food systems activities and include local nonprofits working within the local food system, as well as individuals with expertise in behavioral or social sciences and computational and systems modeling as part of the project team. Each of the five project teams included in this article received FFAR funds.

U.S. average: Flint (72.5%)<sup>5</sup> and Albany (71.6%). Only Cleveland has a population of black or African American alone (28.8%) that exceeds the U.S. average (12.3%). Both Austin and Denver have Hispanic or Latino (of any race) populations (33.9% and 29.7%, respectively) that exceed the U.S. average (18.3%). All of the cities except Flint have populations 25 years and over with a bachelor's degree or higher that exceed the U.S. average. Cleveland and Flint both have median household income levels (\$49,910 and \$48,127, respectively) below the U.S. median income (\$61,937). In addition, although none of the cities had an unemployment rate exceeding 5% prior to the pandemic (Flint had the highest rate of the five cities in January 2020), by May 2020 unemployment rates had jumped to 9.3% (Albany), 11.4% (Denver), 11.6% (Austin), 17.9% (Cleveland), and a staggering 24.5% in Flint.

[Table 1 here]

Table 2 provides the Feeding America estimates of the 2020 projected overall food insecurity rate for each of the five cities, along with the 2020 projected child food insecurity rates and projected increases in overall and child food insecurity from 2018-2020. As might be expected from its increase in unemployment, Flint has the highest projected overall food insecurity rate (21.0). More surprising, Cleveland has the highest projected child food insecurity rate (30.3), Albany has the highest projected percent increase in food insecurity (51.2), and Denver has the highest projected percent increase in child food insecurity (71.4).

[Table 2 here]

Each of the five project research teams conducted semi-structured interviews and/or focus groups from June 15 to July 1, 2020 with key informants with whom they had preexisting

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<sup>5</sup> Note, however, that if one looks at the City of Flint (rather than the County), the demographics change substantially. For example, within the City of Flint population, 53.7% identified as Black or African American alone (US Census 2019).

relationships.<sup>6</sup> Each interview or focus group consisted of five open-ended questions (figure 1) that were developed to help gain an understanding of local policy responses, as well as perceptions of effectiveness by local decision makers and emergency response providers. In addition, when available, the research teams collected and reviewed internal documentation on food needs assessments, impacts, or future plans. Using purposive sampling (Yin 2015), we selected key informants based on their intimate involvement with COVID-related emergency food service provision, particularly to households with K-12 aged children, including members of emergency food task forces and operations, city and county employees, food service leaders from city school districts or in-school feeding programs, and senior employees at food banks. Given the variation in conditions and existing policies, programs, and key institutions across sites, the positions of key informants differed. The objective was to obtain diverse experiences and perspectives on different spaces in the food system by leveraging relationships and local knowledge at each site based on the ongoing research by the five project teams.

[Figure 1 here]

Researchers from each site conducted the interviews and focus groups. Once all the interviews were complete, they compiled notes and asked follow-up questions for clarification. Using a structural coding method (Saldaña, 2015), we then coded data into themes focused on perceptions of effectiveness.

### **Local Responses to School Closures: Meeting Children's Emergency Food Needs**

As schools closed due to COVID-19, the case study school districts developed different strategies to support emergency feeding programs for kids and families, given that there were no clear federal mandate to continue feeding students and no guidelines for effectively executing

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<sup>6</sup> This research (Protocol ID 19-8659H) was approved by the Colorado State University Institutional Review Board on June 26, 2019.

feeding programs (Kinsey, Kinsey, and Rundle 2020). Further, the relaxation of federal rules provided incredible flexibility in the types of reimbursable programs that local education authorities could implement. Here we document some of the ways in which our focus cities responded.<sup>7</sup>

Several of the case study cities' school districts decided to focus on feeding programs at selected school sites. Cleveland Metropolitan School District, for example, established emergency food service provision at 22 of their 91 sites. Similarly, Denver Public School District set up feeding sites at 24 of 162 school locations.

However, the districts quickly realized that with limited feeding locations, they needed to support enhanced access to transportation. Denver, realizing it was only reaching about 25% of the free and reduced-price lunch eligible children that they usually fed as part of the NSLP, decided to add 36 delivery locations (drop-off sites), which were strategically determined based on the highest concentrations of student populations eligible for free or reduced-price meals. Cleveland started utilizing its school busses to pick up students each day (between 11:30 am and 1 pm) to take them to the sites; if no students show for an entire week, then the route is cancelled. The City School District of Albany added a home delivery option but became quickly overwhelmed by demand and had to close new registrations.

As an alternative to limiting the number of sites available, some districts offered meals on selected days of the week. The Flint Community Schools, for example, was initially designed to feed kids every day, but the program transitioned to distributing three breakfasts and three lunches on Tuesdays, and four breakfasts and four lunches on Thursdays. However, there was

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<sup>7</sup> Working with our key informants, our research team tried to estimate the meal gap during COVID as a measure of how these emergency feeding strategies impacted effectiveness. We focused on the number of kids that were eligible for free and reduced priced meals through the NSLP that continued to receive meals post-school closures. However, starting in March 2020, the school districts all received waivers from the USDA FNS that allowed them to feed all students under 18 without any documentation. Accordingly, the answer to this question is unknowable.

concern in some cities that limiting the days of feeding programs left gaps. Accordingly, Cleveland and Albany started to provide backpacks filled with food on Friday to meet weekend food needs. Initially the backpacks were limited to students, but the school district quickly made the decision to open the meals to any in need. Denver initially provided only breakfasts and lunches through its on-site and delivery locations but quickly developed a partnership with Denver's Office of Children's Affairs to expand the program to include dinner.

### **Indicators of Effective Local Programs**

Based on the responses of key informants, we identified three themes that appear to indicate the effectiveness of different local approaches to emergency food service policies and programming during the pandemic: 1) cross-sector collaboration, 2) adaptable supply chains, and 3) addressing gaps in services to increased-risk populations.

#### *Cross-sector Collaboration*

The pandemic brought a proliferation of public and private programs and services to support emergency feeding programs. Informants noted wide variation in the effectiveness of collaborations across city partnerships, based in part on the level of partnering prior to the pandemic, as well as the ability to support effective communication.

Both Denver and Austin reported strong networks that have supported effective cross-city and cross-sector coordination of emergency food service provision. Prior to the pandemic, the City and County of Denver participated in calls with food rescue organizations to support coordination of efforts to address improved food security outcomes. Although these pre-pandemic meetings were limited in scope, they built trust across food rescue organizations. Once the pandemic started, the City and County of Denver organized an Emergency Operations Center, including a child food security sub-team that focused on "needs" and "haves"

coordination. For example, which of the partners need or have access to transportation, storage, food, bags and boxes, sanitation supplies, and so on. Key informants noted that coalescing this group was made easier because many in the group had pre-existing relationships through the pre-pandemic group, and this cross-sector collaboration has helped address gaps in emergency food service provision across neighborhoods while also supporting new collaborations and partnerships.

The Austin-Travis County Food Policy Board has been in existence since 2008 and has several working groups, including a Healthy Food Access Working Group. While pandemics and emergency response were not necessarily a key focus of the Working Group, its existence prior to the pandemic has helped to create and foster a transdisciplinary network. Once the pandemic started, Austin Public Health and Austin's Office of Sustainability began leading the Food Access Task Force as a strategy group within the Social Services Branch of the Emergency Operations Center. Informants noted that the pre-existing network of the Healthy Food Access Working Group has been incredibly helpful for learning about and coordinating initiatives and supporting the diffusion of information and resources in a pandemic environment. The Food Access Task Force now includes over 75 participating organizations, with a distribution list of over 200 individual contacts. Like Denver, key informants note that this type of collaboration and trust has facilitated "needs" and "haves" coordination related to emergency food access and enhanced communication of critical food access needs. Further, informants report that broad, inclusive collaboration built upon longstanding relationships has helped to support strategic placement of additional emergency food sites in underserved areas.

Key informants in Flint, on the other hand, noted a lack of coordination across efforts, even though many organizations were working towards similar goals. Some of these challenges,

particularly a lack of trust in government and external actors, date back to the Flint Water Crisis that began in 2014. During the water crisis, organizations were forced to work together in order to successfully navigate the influx of media attention and financial resources coming into the city. In the context of the pandemic, however, informants reported limited outside resources incentivizing collaboration. In addition, they hypothesized that the inability to get together in-person hindered efforts in collaboration that had previously been navigated at in-person events centered around the faith community; many residents lack access to the technology necessary for virtual communication. The lack of coordination has reportedly resulted in the inefficient use of resources. Informants reported that the primary request from pandemic-related small grant programs was funding to support transportation for emergency food service delivery. Many of these efforts were funded in Flint without a requirement for coordination across projects, and Flint lacked a forum for this conversation. As a result, groups designed and implemented their own plans, resulting in redundant efforts.

#### *Adaptable Supply Chains*

Two supply chain issues emerged that appear to impact the effectiveness of emergency feeding programs in the five studied cities. First, larger networks with more buying power appeared less likely to experience supply chain challenges relative to smaller programs with more limited buying power. As an example, at the beginning of the pandemic, several cities reported that food banks faced challenges with their supply chains. Part of the challenge was that donations from grocery stores declined as consumers hoarded products. Flint informants noted that they had to source food from much further away and pay extra transportation fees, and Cleveland respondents reported that the food bank required increased lead time to get food to Cleveland because truckers were backlogged and access to freight was less certain. Perhaps due

to these supply chain issues, several cities reported that Feeding America, the nation's largest domestic hunger-relief organization, issued advice and emergency operations plans to its national network of more than 200 food banks recommending that they move to a system that focused on their bigger partners so they could move food more efficiently; inherently, moving a small amount of food to a food pantry is not very efficient.<sup>8</sup> Anecdotally, this likely contributed to the closure of 35-50% of the small pantries across the larger U.S. cities.

In Denver, the food bank was able to move double to triple more food than usual, even though as of April, 2020, only 62 (58%) of its pantries operating before the pandemic were still in operation (prior to the pandemic there were 106 food pantries in the City of Denver) (see figure 2). Part of the reason that many of these smaller pantries closed was their inability to access food through their food bank partners. Key informants noted that the fact that the food banks and pantries could move much more food through just over half the number of pantries says something about the inefficiencies of these pantries. Additionally, if food banks are seeing increased demand and making up the gap between what families are able to afford and what they need, then more food bank distributions mean that the gap has widened.

The other challenge that reportedly emerged from these supply chain issues is that nutritional quality may have suffered, particularly relative to the strict standards of the NSLP. Flint Community Schools, for example, noted that they had to rely on frozen food items, as sometimes up to half of the products they ordered from suppliers did not arrive.

[Figure 2 here]

Second, feeding programs that rely on volunteer labor or were unable to develop cross-sector partnerships to fill gaps appeared to experience challenges in their ability to provide

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<sup>8</sup> Food banks tend to act as distributors for such local food programs as food pantries, where families can receive food (Waite 2019). Accordingly, food banks tend to be larger and have more buying power than food pantries.

emergency food. Each city noted that despite increased need, fewer of their volunteers and food service workers were available because they are often older or particularly vulnerable to COVID-19.<sup>9</sup> This led many people to stop volunteering or step away from their jobs because of personal health and safety concerns. Cleveland informants noted that the lack of a volunteer or paid workforce was likely the reason that the school district was one of the few summer meal programs, out of 187, that was operating during the pandemic. In Albany, the food bank opted not to participate in the summer food service program because it was too demanding for its staff and they did not feel they had the capacity to implement it in a safe way (the food bank opted to increase its backpack program instead). Flint informants noted that before the pandemic there were about 95 food service employees preparing and serving breakfasts and lunches for Flint Community Schools. Due to health concerns of an elderly workforce, they are now operating with 42 employees despite the increased number of meals served.

Both Albany and Cleveland noted that they leveraged their highly successful new cross-sector partnerships to make up for the lack of food service workers and volunteers. The National Guard, for example, has stepped in to provide support with meal service provision in both cities. Cleveland informants noted that there are over 70 National Guard members providing support, including making 500 meal deliveries per week to families who are homebound.

#### *Addressing Gaps in Service to Increased-risk Populations*

COVID-19 has highlighted how long-standing systematic health and social inequalities have put some racial and ethnic minority groups at increased risk (CDC 2020a). Further, although the relationship between race/ethnicity and food insecurity is intertwined with other established determinants of food insecurity, including poverty, unemployment, incarceration, and

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<sup>9</sup> Note that the higher than average levels of at-risk food systems workforce have been demonstrated through data analysis (Maher et al. 2020).

disability, the concentration of social and economic disadvantage among people of color over the life course is a significant driver of higher rates of food insecurity (Odoms-Young 2018; Coleman-Jensen et al. 2019). Accordingly, all key informants were asked if they saw differences or gaps in emergency food service provision based on neighborhood demographics. Several cities could not respond to this question or noted the need for additional data in order to respond accurately. In Albany, although informants highlighted challenges – for example, dietary restrictions (e.g., for those with diabetes, which disproportionately impacts Black, Asian, and Hispanic Americans, CDC 2020c) – the City of Albany determined that considering dietary needs and restrictions would be a hurdle for getting food to people quickly.

Both Denver and Austin, however, discussed the prioritization of documenting unmet and emerging needs and identifying plans to meet those needs as part of their Emergency Operations Centers. We postulate that the enhanced ability of Denver and Austin to confront this important issue may be due to strong cross-sector collaborations. The inability to understand and address gaps in service indicates less effective emergency food service provision.

In Austin, the Office of Sustainability food team is using data to inform food access planning and policy initiatives. With its partners, the city created a map of emergency food resources to document the availability and location of emergency feeding operations and school meal sites. Staff are currently working to further identify populations with the highest food access needs. In the first phase, analysis of United Way 2-1-1 call data identified areas and populations with food needs that have increased significantly in response to COVID-19. Results from this analysis, along with a data scan and gap analysis of existing data collection efforts, will inform primary data collection in the coming months. The second phase will prioritize targeted outreach to ensure that the needs of hard-to-reach communities and other high-need populations

are captured and documented. Utilizing March and April 2020 data, most emergency food services are located in lower-income, predominantly racial/ethnic minority, and urban zip codes.

In each of the Denver internal food assessments that the research team reviewed, Denver calls out that “gaps in City-sponsored, and community-based food programs likely now exist for socially vulnerable populations that are in isolation or quarantined, those without internet access to food resource information, English Language Learner populations, and undocumented immigrants or refugees.”<sup>10</sup> As of June 2020, Denver’s plan to support the food needs of these populations included 1) developing a food security recovery plan in concert with a broader plan for socially vulnerable populations, 2) incorporating an equity approach into the food insecurity strategy for COVID-19 recovery, and 3) developing a comprehensive strategy to meet the basic needs of socially vulnerable home-bound populations.

### **Conclusion and Future Research**

Geographic diversity and variation in COVID-19 prevalence require solutions for feeding children that are flexible. Federal guidance on best practices for handling meals to simultaneously ensure continued program participation and reduce the spread of COVID-19 is also needed. In the absence of federal guidance, cities quickly developed their own programming and policies, leveraging additional resources and waivers provided by the federal government to result in a diverse patchwork of emergency feeding programs to support children and families across the U.S. While local officials adapted to rapidly changing conditions, school officials in particular are not trained to design effective food policies, and the patchwork approach may have

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<sup>10</sup> One Denver key informant mentioned that a challenge in serving the immigrant and refugee population is that early in the pandemic, personnel from the U.S. Immigration and Customs Enforcement were waiting for undocumented individuals outside of one of the Denver Public School feeding sites. The informant believes that despite the lack of media attention, word about this incident spread throughout several of the immigrant and refugee communities, inciting fear in these populations and making it more difficult for the city and community-based feeding programs to effectively serve these populations.

left some families with children behind. This article uses interviews, focus groups, and a document review to provide insight into local emergency feeding programs and policies developed in five cities to serve kids and families during the pandemic. Based on our qualitative analysis, we find that the effectiveness of local approaches appears to depend on 1) cross-sector collaboration, 2) adaptable supply chains, and 3) addressing gaps in services to increased-risk populations.

Although we agree that the heterogeneity of needs and food environments across the U.S. necessitates a decentralized approach, more direct guidance from the federal government on best practices to support the system of emergency food service provision may have improved the effectiveness, or at least the efficiency, of local programming and policies. For example, the fact that at least three of the cities' schools started with a specific feeding plan before changing course is indicative of the fact that their initial strategies were not effectively meeting the needs of their populations. Further, although the relaxation of Federal nutrition standards may have been necessary given supply chains and other challenges, there are likely trade-offs given the dependence of some households with children on emergency food service provision. As data becomes more widely available post-pandemic, quantitative assessments and complex system modeling evaluating the strategies of different localities in providing emergency food to children and families are needed to help better reflect upon best practices and recommendations for the future, including potential trade-offs between emergency food service provision and dietary quality.

In addition, each of the local approaches illustrates the importance of a systems perspective in emergency food service provision. For example, several cities noted that separate programs for people out of work and kids makes it more difficult for local entities to figure out

how to feed entire families and pull together the requisite resources. Lockdown and shelter-in-place policies impact volunteers and food service employees, which reduces the availability of programming; increases the burden on schools, food banks, and pantries; creates the need for additional cross-sector partnerships, such as with the National Guard; and exacerbates mental health concerns for those still at work.

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Accepted Article

**Figure 1.** Semi-structured interview and focus group questions

**Figure 2.** Denver food pantries operating during the pandemic (total is 62 of the 106 in operation prior to the pandemic)

**Table 1.** Demographic data by city (county)

	Albany, NY (Albany)	Austin, TX (Travis)	Cleveland, OH (Cuyahoga)	Denver, CO (Denver)	Flint, MI (Genesee)	United States (N/A)
Population <sup>1</sup>	307,117	1,248,743	1,243,857	716,492	406,892	327,167,439
Race <sup>2</sup>						
White alone	71.6%	48.7%	58.5%	54.3%	72.5%	60.2%
Black or African American alone	11.4%	7.9%	28.8%	8.5%	19.6%	12.3%
American Indian and Alaskan Native alone	0.1%	0.2%	0.1%	0.5%	0.3%	0.7%
Asian alone	7.0%	6.8%	3.0%	3.7%	1.0%	5.6%
Native Hawaiian or other Pacific Islander alone	0.3%	0.0%	0.0%	0.2%	0.0%	0.2%
Hispanic or Latino (of any race)	6.1%	33.9%	6.2%	29.7%	3.5%	18.3%
Some other race alone	0.2%	0.1%	0.3%	0.2%	0.1%	0.3%
Two or more races	3.2%	2.4%	3.0%	3.1%	3.1%	2.5%
Population 25 years and over with a	42.0%	51.9%	33.9%	51.3%	22.2%	32.6%

bachelor's degree or higher <sup>3</sup>						
Median age <sup>1</sup>	37.9	34.5	40.4	34.6	40.9	38.2
Median household income (\$) <sup>4</sup>	64,435	76,392	49,910	68,377	48,127	61,937
Change in unemployment rate, January-May, 2020 <sup>5</sup>	5.4	9	13.2	8.6	19.5	9.7
Unemployment rate, January 2020 <sup>5</sup>	3.9	2.6	4.7	2.8	5.0	3.6
Unemployment rate, May 2020 <sup>5</sup>	9.3	11.6	17.9	11.4	24.5	13.3

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Data Sources:

<sup>1</sup> U.S. Census Bureau. 2018. Age and Sex. American Community Survey.

<sup>2</sup> U.S. Census Bureau. 2018. Demographic and Housing Estimates. American Community Survey.

<sup>3</sup> U.S. Census Bureau. 2018. Educational Attainment. American Community Survey.

<sup>4</sup> U.S. Census Bureau. 2018. Income in the Past 12 Months (In 2018 Inflation-Adjusted Dollars). American Community Survey.

<sup>5</sup> U.S. Bureau of Labor Statistics. 2020. Local Area Unemployment Statistics Map.

All data accessed June 17, 2020.

**Table 2.** Projected food insecurity rates, by city and county

City	County	2020 projected overall food insecurity rate <sup>1</sup>	2020 projected child food insecurity rate <sup>2</sup>	Projected % increase in food insecurity (2018- 2020) <sup>3</sup>	Projected % increase in child food insecurity (2018-2020) <sup>4</sup>
Albany, NY	Albany	15.4	24.9	51.2	58.7
Austin, TX	Travis	18.0	26.2	39.8	53.0
Cleveland, OH	Cuyahoga	20.8	30.3	31.1	40.1
Denver, CO	Denver	16.1	21.5	46.2	71.4
Flint, MI	Genesee	21.0	28.3	33.6	49.6

Note: These data are calculated using the model developed by Feeding America for their *Map the Meal Gap*, which applies projected changes to annual unemployment and poverty rates to develop their food insecurity estimates. They argue that while the *Map the Meal Gap* regression model does include other variables that will change in magnitude over time, the most significant changes due to COVID-19 will be in unemployment and poverty, as jobs are lost and incomes decline (Gundersen et al. 2020).

Data sources:

<sup>1</sup> "2020 Projected Overall Food Insecurity Rate." Feeding America, 3 June 2020, [www.feedingamericaaction.org/the-impact-of-coronavirus-on-food-insecurity/](http://www.feedingamericaaction.org/the-impact-of-coronavirus-on-food-insecurity/).

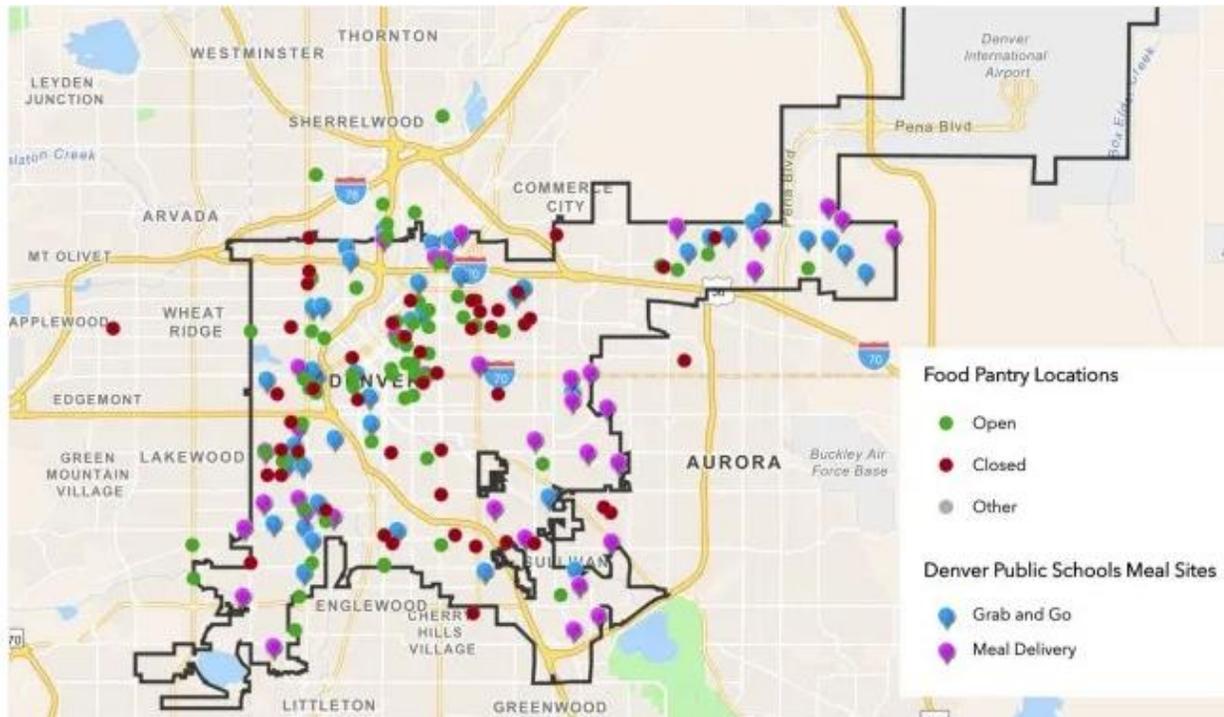
<sup>2</sup> "2020 Projected Child Food Insecurity Rate." Feeding America, 3 June 2020, [www.feedingamericaaction.org/the-impact-of-coronavirus-on-food-insecurity/](http://www.feedingamericaaction.org/the-impact-of-coronavirus-on-food-insecurity/).

<sup>3</sup> "Projected percent increase in food insecurity (2018-2020)." Feeding America, 3 June 2020, [www.feedingamericaaction.org/the-impact-of-coronavirus-on-food-insecurity/](http://www.feedingamericaaction.org/the-impact-of-coronavirus-on-food-insecurity/).

<sup>4</sup> "Projected percent increase in child food insecurity (2018-2020)." Feeding America, 3 June 2020, [www.feedingamericaaction.org/the-impact-of-coronavirus-on-food-insecurity/](http://www.feedingamericaaction.org/the-impact-of-coronavirus-on-food-insecurity/).

1. What emergency food service provision for families with children in your city has been provided due to COVID-19?
2. Are any of these emergency food service systems targeted to children or families with children new for COVID-19? Have existing emergency food service systems changed? (e.g., funding, partnerships, type of food provided, supply chains, locations of food service provision)
3. Do you have any evidence (data or anecdotal stories) of the effectiveness of preexisting, new, or changed emergency food service programs in meeting changing needs of families with children in your city? Do you have evidence that kids who were accessing free or reduced-price meals in schools accessing the emergency food system?
4. Do you see differences in emergency food service provision based on neighborhood demographics?
5. Is there anything else you want to tell us about emergency food service provision aimed at children or families with children in response to changing needs due to COVID-19?

**Figure 1** Semi-structured interview and focus group questions



**Figure 2** Denver food pantries operating during the pandemic (total is 62 of the 106 in operation prior to the pandemic)

Source: The City and County of Denver, July 2020. <https://www.denvergov.org/content/denvergov/en/COVID-19/support-services/food-assistance.html>