

Perspective: The Convergence of Coronavirus Disease 2019 (COVID-19) and Food Insecurity in the United States

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ABSTRACT

During the coronavirus disease 2019 (COVID-19) pandemic, food insecurity has doubled overall and tripled among households with children in the United States. Food insecurity and COVID-19 may exacerbate one another through bidirectional links, leading to a syndemic, or sequential disease clusters, which exacerbate one another. Experiencing food insecurity may be associated with macronutrient and micronutrient deficiencies, which can weaken host defenses, thus increasing susceptibility to COVID-19. Food insecurity is associated with chronic medical conditions, which may afford a higher risk of severe COVID-19 illness. People experiencing food insecurity may have increased exposure to COVID-19 while procuring food. People with COVID-19 may be unable to work, generate income, and procure food while quarantined, which may exacerbate food insecurity. Clinicians should screen for food insecurity during the COVID-19 pandemic and provide referrals to food-assistance programs when appropriate. Policymakers should expand benefits for the Supplemental Nutrition Assistance Program (SNAP) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) to address increases in the depth and breadth of food insecurity during the COVID-19 pandemic. *Adv Nutr* 2021;12:287–290.

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Introduction

During the coronavirus disease 2019 (COVID-19) pandemic, food insecurity is estimated to have doubled overall and tripled among households with children in the United States (1). Although there is increasing recognition that social-distancing measures may contribute to unemployment and food insecurity, less attention has been focused on how food insecurity may relate to COVID-19. Food insecurity and COVID-19 may exacerbate one another

through bidirectional links leading to a syndemic (2), where conditions interact synergistically to exacerbate negative health impacts of each.

COVID-19 May Exacerbate Food Insecurity

People with COVID-19 may be unable to work for income due to symptoms or, even if asymptomatic, due to self-isolation measures. People with COVID-19 may also accrue significant health care costs associated with testing and treatment, which may displace budgets for food. Stigma or fear of contagion associated with having the illness may lead to further isolation and an inability to rely on regular support networks, which can exacerbate food insecurity.

Widespread unemployment and reduced hours due to the public health response to COVID-19 are associated with increased food insecurity rates in the general population; the lowest-wage positions (e.g., retail, food services) are most vulnerable to job losses (3). Food banks across the country report skyrocketing demand, with upwards of 30% being first-time users of the charitable food system. California's online Supplemental Nutrition Assistance Program (SNAP) application program, GetCalFresh, provides real-time insight into the increasing demand for SNAP benefits, with a daily

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Abbreviations used: COVID-19, coronavirus disease 2019; PEB-T, Pandemic Electronic Benefits Transfer; SNAP, Supplemental Nutrition Assistance Program; WIC, Special Supplemental Nutrition Program for Women, Infants, and Children.

application rate in April nearly 4 times higher than usual; almost half of the applicants (48%) were first-time applicants, and 57% reported job loss in the last 30 d (compared with 16% in January).

Food procurement in food-insecure households often requires more time, cognitive bandwidth, and logistical coordination than in food-secure households. Quarantine, self-isolation, and shelter in place are important to protect public health, but at the same time are exacerbating these food-procurement challenges.

Food Insecurity May Lead to Susceptibility to COVID-19

Food insecurity may lead to susceptibility to COVID-19 through biological and behavioral mechanisms. First, food insecurity may lead to micronutrient and macronutrient deficiencies, which can weaken host defense mechanisms and contribute to immunologic decline. Such immunologic decline can increase susceptibility to COVID-19 and morbidity among those with COVID-19 (4). Food insecurity is associated with chronic medical conditions, including chronic kidney disease, obstructive pulmonary disease, obesity, coronary artery disease (5, 6), and diabetes (7, 8). In the case of diabetes, longitudinal studies have shown that food insecurity is prospectively associated with subsequent elevations in diabetes risk (7, 8). These same medical conditions are associated with an increased risk of severe illness from COVID-19 (9). Food insecurity also contributes to stress, anxiety, and depression (10–12), which can also impair immune function and increase susceptibility to infection (6). Finally, food insecurity is associated with smoking (11), which is also a risk factor for severe illness, intensive care unit admission, need for mechanical ventilation, and death from COVID-19 (13).

Behavioral pathways by which food insecurity can increase susceptibility to COVID-19 include needing to access foods through alternate distribution channels, such as food pantries where food may need to be obtained more frequently or potentially through more crowded venues, or needing to access food more frequently due to financial limitations. Furthermore, poverty and food insecurity are closely linked. Poverty is a risk factor for food insecurity and people experiencing poverty may have a decreased ability to self-isolate due to shared living spaces, crowded housing, or caring for dependent children or elders. People with low incomes may also work in essential jobs, which increases COVID-19 exposure (such as public transportation, food retail/delivery, and nonclinical health care workers such as hospital janitors) (14).

Food Insecurity in Vulnerable Populations

Vulnerable and marginalized populations are disproportionately affected by both food insecurity and COVID-19 (4). In the United States, people living in poverty and racial and ethnic minorities have been disproportionately affected by both COVID-19 and food insecurity (15). COVID-19 outbreaks have emerged in homeless shelters and prison populations. This is also true globally. Low-income countries

may be the hardest hit by food insecurity during the COVID-19 pandemic and may also lack the health infrastructure and workforce to care for a surge in patients with COVID-19.

School closures during the COVID-19 pandemic have important food insecurity implications for low-income children and their families. Over 30 million children rely on the National School Lunch Program and School Breakfast Program, and meals and snacks from schools fulfill up to two-thirds of children's daily nutritional needs (16). Without access to school meals (or a replacement meal provided by the school) during the pandemic, low-income families have the financial burden of providing additional meals for their children (16). Parents may also not be able to work and generate income while providing childcare for their children during school closures, which may exacerbate food insecurity. Early in the pandemic, policymakers recognized these concerns and responded with alternative distribution mechanisms for school meals, the Pandemic Electronic Benefits Transfer (P-EBT) program, and unemployment insurance. However, as the pandemic and school closures continue, renewals, extensions, and longer-term policies will need to be considered.

Health Care Provider Actions

Health care professionals can help address this syndemic of COVID-19 and food insecurity. Although screening for food insecurity is recommended at least annually by many professional medical organizations (American Academy of Pediatrics, American Academy of Family Physicians, American College of Physicians, and American College of Obstetrics and Gynecology) (17), clinicians should screen for food insecurity at every in-person and telehealth visit during the COVID-19 pandemic. A brief, 2-item screener has 97% sensitivity and 83% specificity for food insecurity (Table 1) (18). Dietitians or social workers can provide referrals to food resources such as food pantries; SNAP; the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); or the P-EBT program. Eligibility criteria and geographic availability vary substantially.

For people with COVID-19 or at a high risk of severe disease, clinicians and social workers can help patients navigate home food-delivery resources, leveraging innovative programming that is currently undergoing massive expansion. Such programming includes, for example, use of SNAP benefits online, home delivery of groceries from the food bank, and home-delivered meals. Again, eligibility criteria and geographic availability vary.

Policy Recommendations

The Families First Coronavirus Response Act (H.R. 6201), signed on 18 March 2020, lifted work and work-training requirements, and temporarily suspended time limits for SNAP enrollment for able-bodied adults without dependents who are not working, in recognition of rising unemployment rates (19). The Coronavirus Aid, Relief, and Economic Security (CARES) Act (H.R. 748), signed on 27 March 2020 (20), appropriated nearly \$16 billion for SNAP benefits

TABLE 1 Actions for health care providers to address food insecurity during the COVID-19 pandemic¹

- Screen for food insecurity at each clinical visit during the COVID-19 pandemic. A response of “sometimes” or “often” true to either question should trigger a clinical response.
“Within the past 12 months, we worried whether our food would run out before we got money to buy more.”
Reponses: never true, sometimes true, often true (18)
“Within the past 12 months, the food we bought just didn’t last, and we didn’t have the money to get more.”
Reponses: never true, sometimes true, often true (18)
- Provide referrals and support for programs such as community food distribution programs (21); the Supplemental Nutrition Assistance Program (SNAP) (22); the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (23); and the National School Lunch Program (24) and School Breakfast Program (25).
- Prescribe medically tailored meals to those with food insecurity and medical conditions.

¹COVID-19, coronavirus disease 2019.

for newly eligible households (SNAP is an entitlement program, meaning that anyone qualifying under program rules can receive benefits). However, these bills did not expand SNAP benefits to address increases in the depth and breadth of food insecurity. Current proposals for expansion include raising the maximum SNAP benefit by 15%. This increase would support the food security of households enrolled in SNAP while quickly pushing money into local economies, helping to mitigate the effect of the economic crisis.

For WIC, the Families First Coronavirus Response Act authorized an additional \$500 million and allowed for additional flexibility—for example, it waived the need to be physically present for enrollment (to reduce potential exposure to COVID-19 at enrollment sites) and allowed for substitution of WIC-approved products (to accommodate COVID-19–related gaps in the food supply). Congress should support the WIC Benefit Flexibility During COVID-19 Act (H.R. 6726), which would increase the cash value of WIC’s fruit and vegetable vouchers to \$35 to enable more healthy dietary intake (26). Similar to new flexibilities in the SNAP program, WIC participants should also be able to purchase groceries online and use alternative food-delivery models to mitigate COVID-19 exposure.

Conclusions

Food insecurity and COVID-19 are intertwined processes that exacerbate one another and disproportionately affect vulnerable populations. Particularly in the current crisis, clinicians should be regularly screening patients for food insecurity and supporting them in accessing food resources. Policymakers should expand legislation to address food insecurity and poverty as part of their efforts to halt the COVID-19 pandemic.

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