November 1, 2021

Christopher Lynch, Ph.D.
OD/Office of Nutrition Research
National Institutes of Health

Dear Dr. Lynch,

The Food Research & Action Center (FRAC) appreciates the opportunity to respond to the National Institutes of Health's (NIH) request for information, "Research Opportunities to End Hunger, Food and Nutrition Insecurity," Notice NOT-OD-21-183 (November 1, 2021). FRAC commends NIH's efforts to integrate efforts to end hunger, improve nutrition, and improve health with a focus on equity and sustainability.

FRAC improves the nutrition, health, and well-being of people struggling against poverty-related hunger in the United States through advocacy, partnerships, and by advancing bold and equitable policy solutions. FRAC's areas of expertise include

- leading efforts to identify and communicate the connections between poverty, hunger, and obesity among people earning a low income;
- conducting research to document the extent and impact of hunger and effective solutions;
- seeking stronger federal, state, and local public policies that will reduce hunger, undernutrition, and poor health;
- monitoring the implementation of laws and serve as a watchdog of programs; and
- providing coordination, training, technical assistance, and support on nutrition and anti-poverty issues to a nationwide network of advocates, service providers, food banks, program administrators and participants, and policymakers.

FRAC has a long history of advocating for the federal nutrition programs, including the Supplemental Nutrition Assistance Program (SNAP), National School Lunch Program (NSLP), School Breakfast Program (SBP), Afterschool Nutrition Programs, Summer Nutrition Programs, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and Child and Adult Care Food Program (CACFP). FRAC's advocacy work would not be possible were it not for strong partnerships with anti-hunger and anti-poverty organizations, particularly those that represent historically marginalized groups.

This comment draws on our work and partnerships. FRAC's responses are organized according to the areas that NIH is seeking input:

1) **Why hunger persists**, including how limited opportunities for economic mobility and other inequities have contributed to hunger, along with research needed to address this;

2) **Examples of effective coordination** between federal, state, counties and/or non-governmental organizations that have addressed hunger, food insecurity, and nutrition insecurity through research, policies, implementation strategies, or regulations;

3) **Experiences with strategies or innovative interventions** that are working, could be improved, or are not working to address food insecurity and neighborhood food environments, and for promoting health equity pertaining to diet-related chronic diseases, including research strategies that could be applied to examine the potential translatability of these strategies/interventions to other settings or diverse populations (e.g., racially);

4) **Implementation science research needed** to examine the efficacy of providing specific resources or approaches to eliminate hunger and food insecurity and improve nutrition security and health for all.

Sincerely,

Luis Guardia	Geri Henchy	Allison M Lacko
President	Nutrition Policy Director	Senior Researcher

1. Why Hunger Persists

Hunger persists because it is inextricably tied to other forms of hardship, including poverty and poor health. Disparities in hunger persist because of interlocking systems of oppression, including along the lines of race, ethnicity, gender, class, nativity status, disability, and geography. Stigma has been a major barrier to implementing short term (e.g., the federal nutrition programs and other safety net programs) and long term (e.g., raising the minimum wage or reducing the wealth gap) solutions to end hunger. In this section, we present a review of the research underlying persistent hunger, disparities in hunger, and stigma along with recommendations for additional research priorities.

A. Hunger, inadequate nutrition, and poor health are tied to other forms of inequity

Hunger is part of a larger, vicious feedback cycle between poor health outcomes and poverty (see Figure 1). There are not simply upstream determinants of hunger and separately of health; rather, they are reciprocally related. Note that other "social determinants of health" could be incorporated into this model, including education, housing, occupation, environmental pollutants, or incarceration. We focus on hunger, poverty, and health given the scope of this request for information.

(1) Hunger and health. The relationship between food insecurity and physical and mental health is reciprocal. Food insecurity drives poor health outcomes in two ways. First, food insecurity is associated with poor diet and nutrient deficiencies,[1,2,3,4] and depression and anxiety,[5,6,7] which all lead to an impaired immune system.[8,9] Second, food insecurity, particularly chronic food insecurity, is associated with chronic diseases, including kidney disease, obesity, cardiovascular disease, and diabetes.[10,11,12,13] In turn, poor health and disability can make it more difficult for individuals to obtain healthy foods.[14,15,16]

Food insecurity is also associated with poor health and educational outcomes among children,[17] even when children are only marginally food insecure.[18] This may be due to the direct effects of food insecurity or due to other circumstances of living in food-insecure households. This means that any prolonged food insecurity among children during the COVID-19 pandemic and its recovery will have implications over the life course for affected children.

(2) Hunger and poverty. Food is a flexible expense and, as such, is often one of the first expenses to be cut when households are faced with financial hardship.[19,20] Food insecurity rates increase due to job loss[21] or an increase in expenses, for example, rent[22] or energy bills.[23] At the same time, food insecurity can lead to chronic disease, which can make it difficult to maintain employment.[24] Food-insecure adults are more likely to be unable to maintain a reliable source of medical care, leading to a higher likelihood of hospitalization[25] and higher health care expenditures, placing a larger strain on household budgets.[26,27] Debt associated with medical bills is associated with an increased risk of household food insecurity.[28] During COVID-19, many households have been struggling with financial hardship.[29] A March 2021 survey found that 1 in 8 adults had cut back on food in order to pay for health care in the previous 12 months.[30]

Adults with low incomes report being forced to decide between food and other necessities: *"… if I paid the medical bills we wouldn't eat, and it's basically a choice between going into horrific debts and having people look at you horribly and have your credit score tank because you can't pay your medical bills or feed your child."*[31]

During COVID-19, remote learning has exacerbated these decisions for families with children facing higher food costs: *"I've had to stop taking blood pressure medication because I have to feed my kids who are now home schooling because of the pandemic."*[32]

(3) Health and poverty. Poverty has been one of the most consistent correlates of poor health. Lack of income and/or wealth (e.g., savings and assets) often signifies the lack of the material resources needed for good health, like food security, safe housing, and educational opportunities.[33,34,35] Low-income individuals are also more likely to be uninsured or underinsured.[36] When individuals require medical treatment, lack of income makes it more likely that individuals will underuse medication in order to pay bills and afford food,[37,38] making it more difficult to maintain control of a disease. Poor health, in turn, makes it more difficult to focus on education and/or maintain employment, creating the "health-poverty trap."[39,40] For example, poor mental health and chronic disease are associated with unemployment.[41]

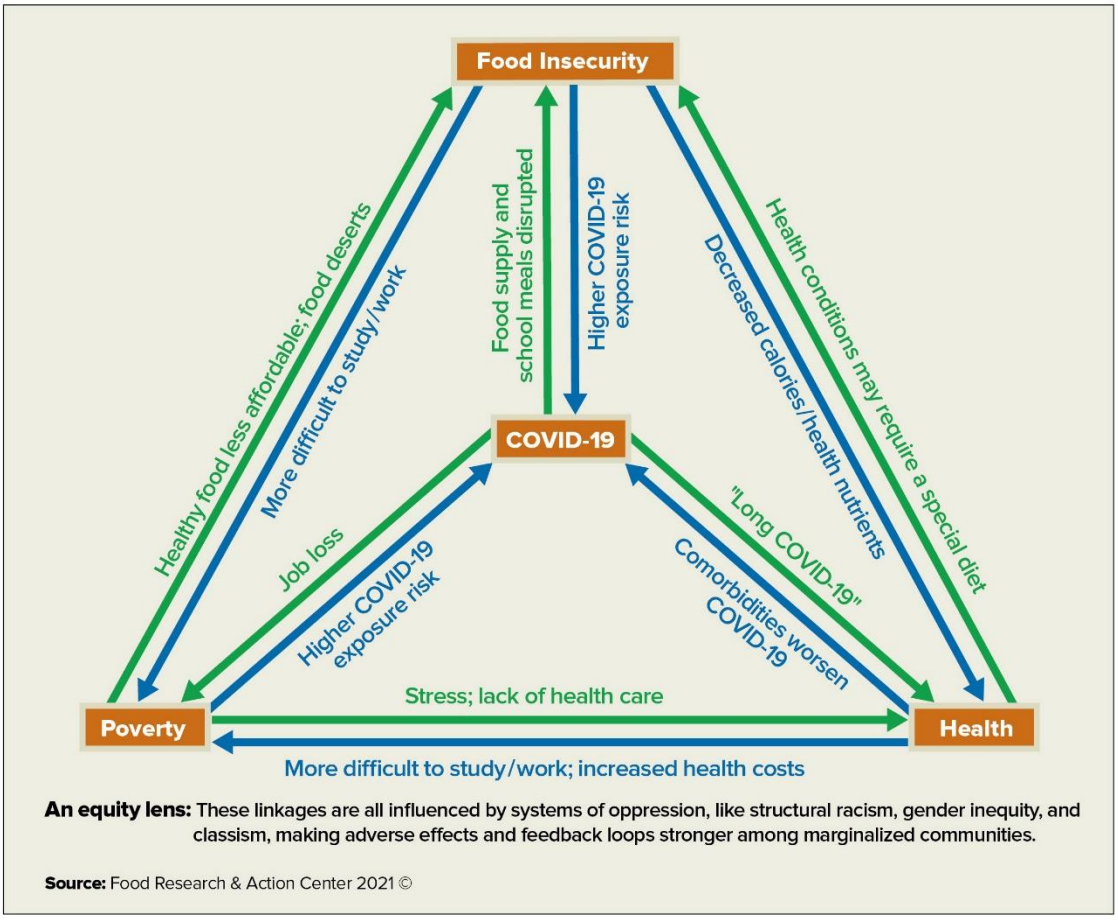
In the last year and a half, the COVID-19 pandemic has applied unique pressures to these relationships, while hunger, poor health outcomes, and poverty simultaneously have increased the risk of COVID-19 transmission, infection, and morbidity.[42,43]

For example, COVID-19 has caused people to make difficult decisions between keeping a job to maintain economic stability or sheltering in place to protect their families' health.

"It's readily apparent that [going to work] is a risk, but, you know, I have to stick my neck out for my family to make sure we can pay the bills and keep everything cranking away."[44]

"My husband […] received a 50 percent pay cut … I will more than likely need to get a job to supplement our income, but we can't put our son in daycare due to him being high risk for serious complications from COVID-19."[45]

Figure 1: Linkages Between Hunger, Poverty, and Health During COVID-19[46]



The interdependent nature of these relationships challenges the linear nature of the "social determinants of health" framework. For example, if all households were given access to and a sufficient budget for a healthy diet tomorrow, it is unlikely that hunger and poor nutrition would disappear. Unequal access to health care, along with other factors, like stress from work, lack of access to physical activity, or exposure environmental toxins, would likely still result in high rates of chronic disease. Poor health, in turn, may impact a person's diet or ability to process foods, or may result in a disability that impacts educational or employment opportunities and results in lower wages. Large educational, living, and medical expenses would also put pressure on reallocating a budget for healthy food for other expenses, thereby impacting nutrition and/or food security.

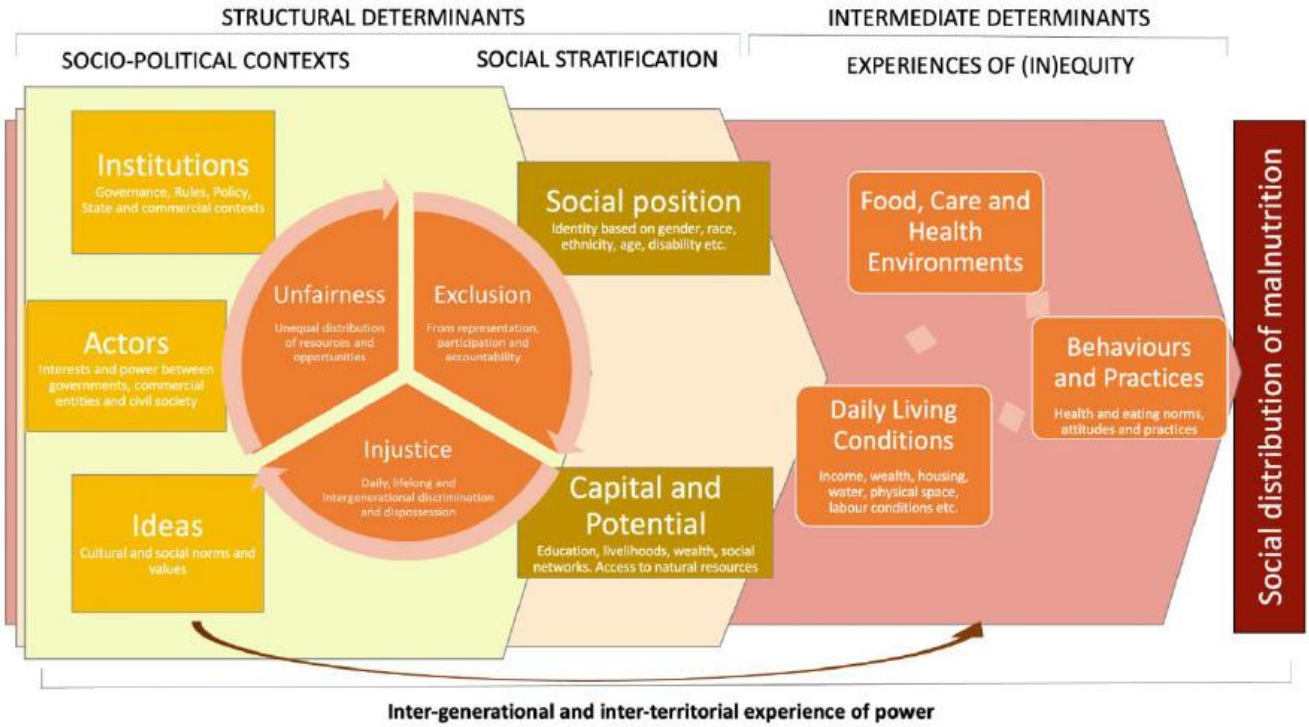
Addressing hunger in the context of these linkages requires interdisciplinary research. To be effective, interdisciplinary teams must be appropriately funded to account for the time and resources needed for coordination of these efforts, and different funding expectations should be clearly communicated across all relevant organizations (universities, non-profits, think tanks, etc). Funding sources also should consider publishing expectations across different disciplines (for example, in an academic setting, manuscript authorship expectations and the time needed to publish differ across fields) and tools needed to communicate research findings to different audiences (for example, publishing a report for communities or policymakers must include the cost of graphic design and/or interactive data visualization).

Interdisciplinary research topics should include the evaluation of policies that target multiple hardships at the national or local level, multilevel interventions, and the study of how successful interventions may or may not be transferrable to other communities. Mixed methods research should be prioritized to understand the tradeoffs that people face, how these tradeoffs and family circumstances impact the degree to which healthy food is seen as a flexible expense, and how the receipt of (or uncertainty around) income and social programs impacts these tradeoffs and the consumption of adequate and nutritious food. In addition to the collection of qualitative data, the leadership and needs of people with lived expertise should be centered throughout the research process using community-based participatory research methods.

B. Interlocking systems of oppression lead to inequity.

The above "linkages" framework must be viewed through an equity lens. While the connections between poverty, access to healthy food, hunger, and poor health impact all people, these conditions disproportionately impact historically and currently marginalized groups along the lines of race, ethnicity, gender, class, ability, and geography. Disparities in rates of hunger persist because these underlying systems of oppression continue to exist. These systems of oppression operate through governing processes and economic and social policies that distribute resources (e.g., wages, working conditions, access to housing and food) unjustly by race, gender, social class, sexual identity, and more[47] (see Figure 2). Policies may be political, economic, religious, cultural, or legal in nature.[48]

Figure 2: Inequities across Nutrition



Source: Nisbett, et al., *in press* [49]

The dominant system of oppression that operates in the U.S. is structural racism, which produces inequities between White communities and Black, Latinx, Native, Asian, and Pacific Islander communities. Structural racism refers to the ways society historically and currently fosters racial discrimination and the unjust distribution of resources through mutually reinforcing systems (i.e., education, jobs, housing, credit, health care, and the criminal justice system).[50] This mutual reinforcement across systems makes structural racism self-perpetuating.[51] Structural racism is a fundamental cause of poor health,[52,53] obesity,[54,55] and food insecurity.[56,57,58]

Importantly, structural racism operates through different laws, policies, and institutions for different racial and ethnic groups.[59] Research should elucidate the pathways most relevant to hunger, nutrition, and health. Furthermore, the unique structural context that shapes the experience of different racial and ethnic groups should be considered when establishing community partnerships and when designing, implementing, and evaluating possible interventions.

Structural racism also has been associated with disparities in COVID-19 mortality at the state[60] and county[61] level. Further research is needed to understand how the disproportionate impact of COVID-19 on survivors (e.g., long COVID-19) affect hardships like poverty and hunger or how long COVID-19 may be mitigated through nutrition interventions.

In addition to structural racism, other systems of oppression include classism or structural sexism.[62] It is important to consider how different identities carry overlapping risk factors for hunger, poverty, and health.[63] Intersectionality considers how interlocking systems of oppression result in unique challenges on more than one level for individuals with multiple

identities that have been and continue to be discriminated against.[64] Intersectionality is a framework that should be incorporated into more research around hunger, nutrition, and health. More innovative research methods are needed. While it is important to measure group differences that reflect inequities, the ultimate goal of research through an intersectionality framework should be to understand and intervene on the social and structural factors that drive inequities.[65]

In research, when categories like race and ethnicity are used, the underlying social processes that affect different groups and lead to disparities in hunger, nutrition security, and health should be made explicit in the research design and the interpretation of findings. These mechanisms should be elucidated in the context of their specific place and time. Methodological tools are needed to understand the specific ways that structural racism and other systems of discrimination operate in order to identify where the opportunity for intervention exists. Furthermore, the development of social science tools used to better understand these mechanisms should be afforded the same funding opportunities as the biological sciences that help us understand the physiological effects of hunger, nutrition, and stress on health.[66]

To be clear, this does not mean that data should not be collected by race and ethnicity. In fact, quite the opposite — "data equity" should be an explicit goal of data collection, particularly for American Indian, Alaska Native, Native Hawaiian, and Pacific Islander communities.[67] Best practices for data collection include allowing the category "multiracial" to be disaggregated or employing more intentional sampling strategies.[68] Without the ability to measure disparities in hunger, nutrition, and health, these communities are less able to advocate for resources and plan interventions.[69] In addition, averages may mask disparities within subpopulations. In data collection and reporting, data should be disaggregated by characteristics, like race, ethnicity, gender, and rurality, and also by their intersection.[70] For example, centering the experiences of Latinx individuals in rural America will help clarify the unique challenges they face in attaining food and nutrition security. However, when data are reported by different demographic characteristics (e.g., racial and/or gender identity), when demographic characteristics are included in regression models, or when models are stratified by demographic characteristics, justification must be provided. The underlying social processes that are posited to lead to differences or disparities between groups must be made explicit. This is necessary to prevent the false notion of fundamental, biological differences between racial and ethnic groups.

At a policy level, uprooting systems of oppression will require prioritizing interventions that are positioned to reduce disparities in multiple systems, such as programs that improve access to quality education, housing, and/or food, or that provide additional income to households with modest economic resources.[71] One area for research is to evaluate community investment projects. Each year, about $300 billion dollars are invested through tax credits that focus on small business development and community reinvestment.[72] Researchers should partner with businesses to collect quantitative and qualitative data to evaluate these natural experiments.

Finally, methods to assess causality in epidemiology must be strengthened. Nutrition epidemiology and social epidemiology rely heavily on observational studies, like cohort studies and natural experiments. We must be able to make reliable inferences using observational data to design interventions with some certainty. More methodological tools are needed to assess missing variables, measurement error in exposures, confounders, and outcomes, and how differences between the study population and target population impact transferability and generalizability. For an excellent review of how "causal reasoning and effect estimation [...] should always be enveloped by a thorough understanding of how systems and the social exposome shape risk factor and health distributions" and what is needed for progress, see Jackson and Arah, 2020.[73]

C. Stigma against people earning a low income shapes social policy and impedes progress.

The persistence of hunger is tied to the persistence of poverty. Stigmatization of people earning a low income perpetuates inadequate policy intervention and is a key driver of inequities.[74] Stigma operates at individual and structural levels.[75,76] In their recent book *Poorly Understood*,[77] authors Mark Rank, Lawrence Eppard, and Heather Bullock argue that widely held stereotypes about who is poor and why they are poor have led to the political choice to have a weak social safety net. Despite the widespread perception that poverty is a problem of "other" people, the authors use data from the Panel Study of Income Dynamics to show that a significant proportion of Americans will experience living below the poverty line or will use a means-tested social safety net program (e.g., Medicaid). For example, between the ages of 20 and 75, 60 percent of Americans will live below the poverty line for at least one year, and between the ages of 20 and 65, 65 percent of all Americans will at some point reside in a household that receives benefits from a means-tested social program.

Rather than view poverty as systemic to our economic structure, most Americans attribute poverty to individual shortcomings. Surveys show that Americans believe people experiencing poverty are high school dropouts, live in inner cities, are mothers with too many children, are addicted to drugs, or are individuals with a mental disability and who are experiencing homelessness. In addition, non-White people are more strongly associated with poverty than White people, even though 66 percent of all people living in poverty are White. People experiencing poverty are pathologized as not working hard enough, not having the necessary skills or education, having bad morals, or being unable to make responsible decisions. This stigmatization results in the beliefs that poverty happens to "other" people, that people can pull themselves out of poverty through hard work, which also reinforces deep-rooted racism, and the myth that government assistance fosters dependence.

Current social safety net programs reflect the political choices made about who are "deserving" (children, older adults, and people with a disability) and "undeserving" (able-bodied adults of working age) of help. This social stigma has resulted in pressure to limit eligibility for programs and to tie the receipt of federal benefits to work. Consequences of these restrictions include the disincentive for people earning a low income to build up savings so that they can stay below an asset limit or increased economic burden when the loss of a job also results in the loss of government assistance.

However, most research shows that a majority most people experience poverty for one to two years and that the main causes of entering poverty are universal experiences. The shocks that cause people to enter poverty are the loss of a job or a cut in hours, a health condition or disability, changes in family size through divorce or child birth, regional employment conditions, etc. However, households closer to the poverty line are more vulnerable to these shocks. Furthermore, the longer one experiences poverty, the more difficult it is to escape.

The authors highlight research that shows how expansions to the social safety net in the United States have reduced poverty rates (e.g., the 1960's "war on poverty") as well as cross-country research that shows that groups vulnerable in the U.S., like single-parent female-headed households, have low poverty rates due to more generous social programs.

The stigma of poverty affects the behaviors and well-being of groups being targeted. Anticipation of stigma may cause individuals to engage in behaviors to conceal stigmatized characteristics, like adults refusing to enroll in federal programs or youth refusing free school meals. In addition, stigma between individuals manifests as prejudice (e.g., discomfort with or dislike of people in poverty), stereotypes (e.g., people in poverty are lazy and take advantage of the welfare system), and discrimination (e.g., unfair or unjust treatment of individuals, such as

the failure to offer healthy foods due to the belief that people earning a low income dislike fresh fruits and vegetables). These interactions may be a result of explicit and implicit biases.

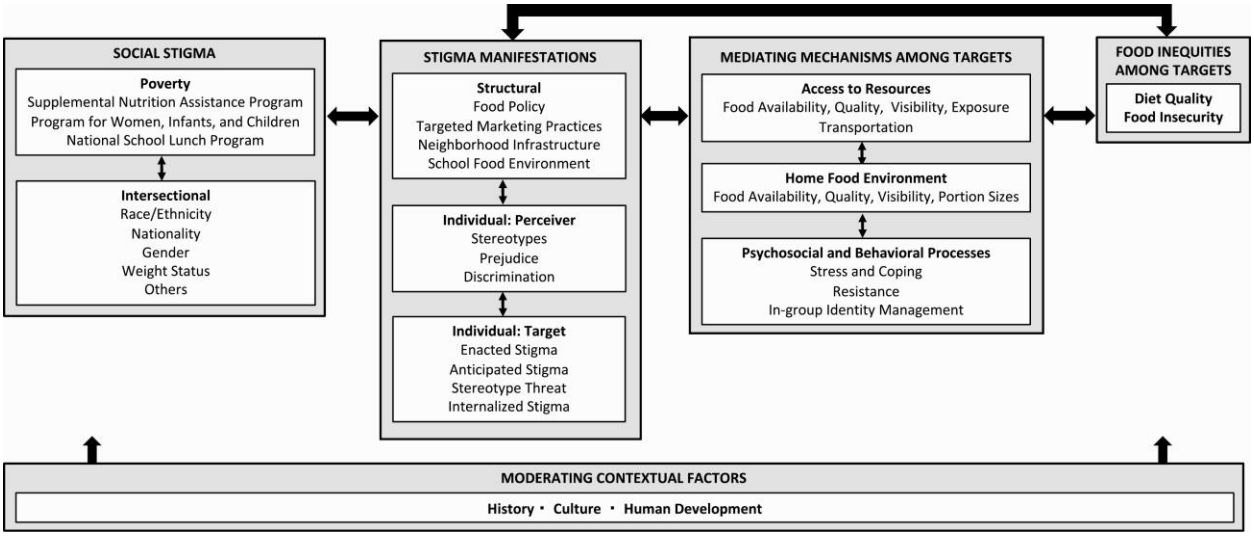
Importantly, people may live with a range of overlapping stigmatized identities, including race, gender, and poverty, which means that stigma disproportionately impacts racial minority groups. Black adults report higher levels of interpersonal stigma for participating in welfare programs (e.g., from family, friends, service providers, program administrators) than White adults, particularly Black adults who live in communities with few racial groups represented.[78]

The wider stigmatization of people experiencing poverty is reflected in the structure of the federal nutrition programs and the way participants are treated. For example, SNAP includes asset limits and work requirements when determining eligibility. Stigma also has been shown to reduce enrollment and participation in federal programs.[79,80] The same beliefs about individual ability and self-reliance that have led to a weak social safety net also cause eligible individuals to not apply for "government handouts" like SNAP.[81] Individuals who do apply for SNAP report feeling judged and devalued.[82] In WIC, shoppers often encounter stigma when purchasing food due to confusion over eligible items in the WIC food package, discrimination, or both.[83] This confusion is compounded for participants with limited English proficiency. As another example, school-age children may experience shame for relying on free or reduced-price meals or for having unpaid school meals debt, leading them to forgo breakfast or lunch.[84,85,86]

More research is needed on how to shift cultural stigma rooted in myths about who is deemed "poor" and why, and how these cultural shifts are related to social policy decisions.

The Stigma and Food Inequity Conceptual Framework, developed by Valerie Earnshaw and Allison Karpyn, is an important foundation for applying this work specifically to food and nutrition security (see Figure 3).[87] Importantly, this framework identifies stigma at the structural and individual level, as well as recognizes that the stigma associated with poverty intersects with stigma related to race, nationality, gender, obesity, etc., which all contribute to inequities in hunger and nutrition.

Figure 3 : Stigma and Food Inequity Conceptual Framework



Source: Earnshaw and Karpyn, 2020[88]

In addition, more research is needed around the design, implementation, and efficacy of the social safety net in reducing poverty and hunger and improving nutrition. For example, ongoing research is evaluating the impact of minimum wage increases on health and dietary outcomes.[89] Early evidence from the implementation of the 2021 Child Tax Credit indicates that it reduces food insufficiency among households with children by 7.5 percentage points, or by 25 percent.[90] Research also indicates that receipt of social programs in early childhood have long-term impacts on a variety of outcomes, including improved educational attainment and health.[91] More research is needed on whether the interaction between programs is additive or synergistic, as well as how the effect of social safety net programs differs between those who only experience short-term poverty compared to those who experience long-term poverty. Evidence of who benefits from these programs and the short- and long-term effects on health and well-being may reduce the stigma of participating.

2. Examples of Effective Coordination Between Organizations

FRAC has convened and participated in various coalitions to advocate for changes to the federal nutrition programs that address hunger and nutrition. In addition, FRAC has provided technical assistance to various state agencies and network partners to facilitate their own implementation of government programs and in turn has provided feedback to federal agencies. This has been crucial during COVID-19 in the implementation and continuation of waivers and flexibilities. Lastly, FRAC has partnered with other organizations to conduct timely, policy-relevant research on hunger and nutrition.

We have organized examples of effective coordination between organizations by topic, along with recommendations for future research, as follows:

A. Partnership with national and community organizations that represent all constituencies, especially those that are marginalized;
B. Sustainable strategies can be used to engage individuals with lived expertise to help improve policies;
C. Community coalitions lead to sustainable and equitable solutions;
D. Coordination between state and local SNAP and WIC agencies and program participants can ensure adequate access to administrative offices, clinic locations, and retail stores;
E. Pandemic Electronic Benefit Transfer (P-EBT) innovation and implementation; and
F. COVID-19 waivers and flexibilities in the federal nutrition programs.

A. Partnership with national and community-level organizations that represent all constituencies, especially those that are marginalized.

Data collection, research, and policy interventions must include culturally responsive and linguistically appropriate outreach, education, and enrollment to ensure that programs reach all eligible children and families and meet the diverse needs of communities. Outreach, coordination, and connections in a shared language and culture are meaningful, compelling, and necessary: in 2017, almost 26 million people reported being limited English proficient (LEP), including 60 percent who speak Spanish.[92] For example, effective outreach by community partners can help overcome barriers to recruitment for community-based research or to program participation, including widespread misconceptions about eligibility, concerns expressed by immigrant families, and limited access to information.

For the federal nutrition programs, agencies should support state and local program offices with appropriate funding to support outreach efforts and provide guidance on prioritizing marginalized racial, ethnic, and other populations. These efforts should include research opportunities to evaluate outreach efforts and collect qualitative data to improve program access.

For example, USDA recently released guidance for State Outreach Plans for SNAP, which identifies four priority areas for outreach: racial equity, students, immigrant communities and mixed-status families, and veterans.[93] Federal-matching funds reimburse state agencies for SNAP outreach, including for contracting with community partners. Funding community-based trusted messengers and leaders to connect people and communities to programs is particularly important for immigrant, Tribal, and other underserved communities with lower access to resources and often underfunded community-based organizations. Under the George W. Bush administration, 100 percent federally funded competitive grants were available to support innovative SNAP outreach that were launched by the Clinton administration. As FRAC and UnidosUS leaders have written to USDA, the federal government should again dedicate resources for such efforts.[94]

An example of a successful partnership between a national and community-based organization breaking down barriers to health and social services is the collaboration between UnidosUS and the Latino Community Development Agency (LCDA) in Oklahoma. Using *Comprando Rico y Sano,* a program developed by UnidosUS that centers *promotores de salud* (community health workers), LCDA has become the primary agency responsible for assisting Latinos with SNAP enrollment in Oklahoma City. A UnidosUS report on community-driven strategies to reduce food insecurity includes details of LCDA's culturally responsive implementation strategy.[95]

Another example of coordination between organizations to reduce hunger is between FRAC, a national nonprofit, and the American Academy of Pediatrics (AAP), a professional organization. FRAC and AAP have partnered together to develop "Screen and Intervene," a toolkit for pediatricians to address food insecurity. The toolkit leverages the trust and expertise of health care providers to connect families to federal nutrition programs. This connection is especially important for immigrant families. Children in immigrant families experience higher levels of food insecurity, and pediatricians are positioned to help families become more comfortable accessing programs and addressing concerns about immigration status. Local organizations that serve immigrant communities are also great partners in this work.[96]

Research Recommendations

- NIH grants should provide adequate federal funds for researchers and state agencies to partner with community organizations to conduct data collection, research, outreach, and enrollment to immigrant, Tribal, rural, and other marginalized communities.
- To facilitate community engagement, employ social media, web-based advertisements and websites as updated marketing tools. Prioritize easy-to-use, inclusive materials in multiple languages. Engage the power of positive word-of-mouth recommendations.
- Trusted community members include locally owned businesses. Give providers, like SNAP- and WIC-authorized food retailers, a role in the research to improve the healthy options available in the retail market and in recruiting for SNAP and WIC.
- In Native communities, when engaging in research and data collection, support the leadership of Native-led research organizations and allow extra time for appropriately navigating more complex Institutional Review Board processes. When developing policy, engage Tribal leaders through the consultation process. The Biden administration has recommitted itself to centering Indigenous voices through consultations;[97] these consultations will center on the needs of Tribal communities. Consultations with Tribal leaders and Tribal organizations must take place in accordance with E.O. 13175: Consultation Coordination with Indian Tribal Governments and "Dear Tribal Leader" letters and other calls for consultation must be provided to Tribes, at a minimum, 30 days before the consultation is scheduled to take place. These announcements must be widely publicized.
- To maintain trust among community organizations and members, research results should be disseminated through community reports.

B. Sustainable strategies can be used to engage individuals with lived expertise to help improve research and policies.

In the case of the federal nutrition programs, fostering productive dialogue around program strengths and opportunities for improvement from the perspectives of the diversity of current and past participants, as well as those who have been eligible for programs but never participated, is crucial. Their expertise should be used to inform why disparities in enrollment or outcomes exist and how to innovate and improve policies and procedures. To do so, participants must be engaged in a way that is authentic, values their expertise, and is minimally intrusive.

One example is soliciting feedback through apps that provide services for program clients. For example, Propel administers an app called "Providers" that helps SNAP participants monitor their EBT balance, receive important updates about program changes, and access linkages to other resources.[98] During COVID-19, the app has been used to field surveys to track hardship and access to programs among Fresh EBT users. Survey results can be disaggregated by gender, race, and ethnicity, and are published in reports and shared through monthly webinars hosted by FRAC. This type of rapid survey data could be used to assess the impact of policy implementation at the federal level, or could leverage changes in state-level policies using a natural experiment framework.

As another example, advocates in Pennsylvania and Georgia have focused on ensuring that WIC parents' perspectives are heard and inform decisions on how WIC will operate.

- Just Harvest in Pittsburgh, Pennsylvania, works closely with community members, including WIC parents. They provide the parents with advocacy training to empower them to testify at WIC listening sessions and other opportunities.
- In Georgia, the Atlanta Community Food Bank conducted focus groups with WIC parents and parents who are eligible but are not participating. The participants represented the racial and ethnic makeup of eligible families in Georgia. The findings have informed the WIC state agency and a community coalition formed to promote WIC improvements.

Another successful strategy to solicit participant feedback is through periodic summits, meetings, listening sessions, and/or task forces. These organized events provide an excellent forum to hear from providers, clients, those likely eligible for programs, and a full range of partners about the facilitators and barriers to participation and success. These efforts should center the needs, feedback, and leadership of individuals with lived expertise and employ a racial equity framework.[99] Summaries, key findings, and actions can be written in reports and widely distributed at the local, regional, and national level.

For example, in partnership with The Food Trust and local anti-hunger organizations, FRAC has convened several task forces across the country to assess barriers and solutions to enrolling participants in SNAP.[100,101,102,103] As another example, FRAC's WIC recommendations are based on a multi-year investigation of the barriers to WIC participation and benefits, and effective strategies for maximizing WIC participation and the use of benefits. FRAC conducted a comprehensive background research and literature review; an in-depth analysis of WIC participation, WIC coverage, and related factors; and discussions with national, state, and local stakeholders.[104] These findings that center participant expertise serve as an important compliment to symposiums that convene research experts, such as those organized by the National Academies of Sciences, Engineering, and Medicine, when evaluating future research and policy directions for programs, like WIC,[105] or for the study of food and nutrition science.[106]

Research Recommendations

- Partner with organizations, like Propel, In.c, or agencies, like USDA, that offer program participants services through mobile applications. The apps can be used to field survey questions and solicit feedback from users.
- Partner with community organizations to conduct listening sessions.

- Engage community members in activities, such as photovoice or community mapping, to understand community assets, barriers, limitations, and opportunities around food security, nutrition security, and health.

C. Community coalitions lead to equitable and sustainable solutions.

Local task forces or coalitions bring together stakeholders from a variety of organizations to strengthen social services. Coalitions can include nonprofits, state agencies, faith-based organizations, emergency food providers, community health clinics, researchers, and more. These stakeholders should serve all populations, especially those that are marginalized, and regularly seek client feedback. Coalitions also provide opportunities for sharing information, training, and the coordination of services.

An example of a community-level collaboration with a public health focus is the Greensboro Health Disparities Collaborative (GHDC). The GHDC was founded in 2004, and includes community leaders and advocates, public health researchers, university faculty and staff, clergy, healthcare professionals, and other members of the Greensboro community. They have received several NIH grants for the work reducing disparities in cancer care.

Other examples of community coalitions that focus on hunger and health include the Community Quality Councils, established in 2004 by the Illinois Hunger Coalition and the Illinois Department of Human Services, and the Community Partner Program, established in 2012 by the Texas Health and Human Services Commission. Finally, food councils are another example of community coalitions; they are focused on improving nutrition, the food environment, and health through research and policy. Many anti-hunger and public health partners sit on local food councils. For example, D.C. Hunger Solutions sits on the D.C. Food Council.

Research Recommendations

- Fund community coalitions to support the expertise of community organizations that are often strapped for resources.
- Researchers should seek involvement in broad coalitions. Trainings should cover structural discrimination, historical processes specific to a particular community, and discussions of the distribution of expertise and power between members of the coalition.
- Researchers should aim to establish long-term relationships in coalitions that extend beyond any single project.

D. Coordination between state and local SNAP and WIC agencies and program participants can ensure adequate access to administrative offices, clinic locations, and retail stores.

The ability to access resources is an important factor in assessing the equitable impact of the federal nutrition programs. Whether a participant can access resources impacts their cost-benefit decision when enrolling. The research community can play a role in identifying gaps in access and disseminating best practices.

For example, co-locating WIC clinics with maternal and child health services offered in clinics and hospitals allows coordination of appointments and reduces the number of separate trips. An effective example in Maryland and D.C. is Mary's Center,[107] a community health center with a WIC program, which operates a community outreach van, also known as the Mama and Baby Bus. The WIC program relies on the trained Mama and Baby Bus staff to do WIC outreach on an ongoing basis.

Research Recommendations

- Evaluate geographic access for all participants. WIC clinics, SNAP offices, summer meal sites, schools that have adopted community eligibility, and approved WIC and SNAP retailers should be strategically located to extend the programs' reach to vulnerable populations. Mapping software can be used to compare these program sites in terms of access to transportation and/or to the locations of other social services, and to demographic information, including income, race and ethnicity, language(s) spoken at home, infant and maternal mortality, and overweight and obesity rates.
- Evaluate the impact of creating new services (e.g., establishing new clinics or approved retailers) compared to the impact of investing in community transportation. Planning should involve the input of community members, and cases should be evaluating using implementation science to assess transferability to other communities.
- Small vendors in underserved areas should be provided strong vendor training and technical assistance for store staff to ensure commercial viability and that minimum stocking requirements and quality are maintained. Researchers can survey different types of retailers to understand common perceptions of barriers and opportunities to selling healthy food and participating in SNAP and WIC, as well as the intersection of food retail with community economic development and health equity.

E. P-EBT Development and Implementation

School meals have important health and educational benefits. Prior to the pandemic, about 30 million children relied on free or reduced-price school meals. After school closures, districts had to find a way to get meals to students. The development and distribution of P-EBT required rapid decision-making during a time of great need and uncertainty. The initial distribution of benefits, and the processes of improving subsequent iterations of the program, required close collaboration between federal and state government agencies, school districts, and other non-governmental organizations offering technical assistance.

FRAC partnered with the Center on Budget and Policy Priorities (CBPP) to conduct research into best practices. They released a report in September 2020 that was used by many state agencies and advocates to streamline P-EBT for the 2020–2021 school year.[108] Lessons learned in the report could also be applied to address hunger and nutrition when school is disrupted due to a disaster or when school is not in session.

As part of this effort, FRAC and CBPP published a series of case studies for Alabama, Arizona, Kansas, Minnesota, New York, Pennsylvania, and Texas. FRAC published an additional case study for Wisconsin.

Research Recommendations

- Research around the effectiveness of different strategies in distributing P-EBT benefits (e.g., direct issuance versus application requirements and incorporation of newly eligible children).
- Research on effective communication and coordination between state government agencies, particularly those hat cover SNAP and the child nutrition programs.

F. COVID-19 Waivers and Flexibilities

Requiring in-person interviews disproportionately affects individuals and families with fewer resources, including time and access to transportation. Examples of external barriers include less flexible job hours, caretaking responsibilities, and the fear, among immigrant families, of being out in public.

COVID-19 has provided the opportunity to assess the effects of federal waivers that increase flexibility in enrollment and recertification. For example, the WIC program allowed participants to receive benefits remotely and complete enrollment and appointments from a convenient location over the phone. SNAP extended certification periods, waived period reporting requirements due to income changes between recertifications, eliminated telephone and in-person interviews, and allowed telephonic signatures on applications. These waivers have helped increase participation and ease benefit redemption.[109,110]

An example of a successful collaboration between community organizations, state interest groups, and state government in the implementation of waivers was the extension of SNAP emergency allotments (EA) in Maryland in October 2021. Maryland Hunger Solutions (MDHS), an initiative of FRAC, leveraged long-standing relationships with community organizations and elected officials to extend EAs for the month of October. MDHS organized a letter to Secretary Padilla, head of the Maryland Department of Human Services, which was signed by 30 community organizations. MDHS also collaborated with Delegate Valentino-Smith from Prince George's County, who has been a long-time champion of anti-hunger efforts. Together, the support from key delegates, the letter from community organizations, and additional pressure from retailer and restaurant associations influenced Governor Hogan and Secretary Padilla's decision to extend SNAP EAs. Key data used by MDHS included the number of households receiving EAs in Maryland and the amount of federal revenue the state would have lost. Future research should center on strategies to form broad, sustainable coalitions that can be leveraged to make quick policy decisions at the local level. In addition, regularly published estimates on the economic impact of SNAP are needed to argue for the program to elected officials and interest groups across the political spectrum. This includes increases in spending on food and non-food items, the estimated state revenue generated through sales taxes, and jobs supported.

The federal waivers available during COVID-19 also ensured that breakfast, lunch, and afterschool and summer meal service were able to continue. These waivers allowed meals to be picked up and taken home, instead of eaten onsite alongside enrichment activities. They allowed school districts and community sponsors to adapt and adjust operations to provide meals to children in a variety of ways that minimized contact, including delivering meals directly to homes and providing meals at pick-up or drive-through locations. To help facilitate the extension and expansion of these waivers, FRAC collected and shared waiver language across states and encouraged states to take full advantage of the waivers.

Research Recommendations

- Evaluate of how prior evidence of barriers to program participation was used to inform COVID-era waivers and flexibilities. Make recommendations on how evidence can be used quickly in future emergencies.
- Evaluate of difficulties in coordinating between federal government, state and local agencies, and local providers (schools, childcare centers, etc.). Identify barriers to timely action, sources of confusion, and potential solutions to avoid these difficulties in future emergencies.
- For advocating to policy makers and interest groups along the political spectrum, further research on the impacts of the federal nutrition programs beyond reductions in food security and improved nutrition are needed; in particular, state-by-state estimates of the economic impact of the programs, such as jobs created by SNAP or local farms supported by school meals. With respect to COVID-19, state differences in changes to the federal nutrition programs, such as emergency allotments or the distribution of P-EBT, could be used to understand the impact of these measures on food and nutrition security. Analysis

should include qualitative data from participants on how their understanding of changes in benefits impacted spending patterns.

- More research is needed to understand the coordination between programming and meals in out-of-school time programs and the implication for child nutrition and enrichment opportunities when in-person programming is not possible

3. Experiences With Strategies or Innovative Interventions

FRAC advocates for a variety of strategies that will improve access to the federal nutrition programs as a means to end hunger, improve nutrition, and boost health. Experiences with these strategies and recommendations for further research are organized as follows:

A. Investment in program administration and streamlined processes to increase access;
B. Eliminate arbitrary barriers to eligibility and improve benefit computation rules
C. Ensure that families and individuals, regardless of immigration status, have access to programs;
D. Reduce the stigma of participating in social safety net programs; and
E. Strengthen and expand the Community Eligibility Provision.

A. Investment in program administration and streamlined application processes to increase access.

Negative experiences during enrollment or program use can dissuade eligible individuals and families from participating in programs. Long wait times, burdensome paperwork, and lack of transportation have been consistently cited as top barriers among participants and outreach workers.[111,112] Barriers that exacerbate lost work time and wages are especially burdensome for non-White communities. Systemic injustices, like discrimination in hiring and job segregation, have led to disproportionate representation in low-wage jobs that require in-person work and have fewer flexibilities and time off,[113] as well as higher rates of unemployment, which increases the urgency of maintaining a job.[114] COVID-19 has exacerbated these disparities.[115] In addition, lack of control over one's time and program resources leads to disempowerment. In one study with predominantly Black women,[116] participants perceived programs were quick to sanction and punish while reinstating benefits was a bureaucratic and lengthy process.

FRAC's experience and recommendations relating to administrative systems are focused on the following three strategies: improve customer service; simplify applications and enrollment; and expand options for streamlining automatic eligibility for the federal nutrition programs (e.g., school meals) based on eligibility in other public assistance programs.

(1) Improve customer service. Supporting and, when necessary, improving customer service are essential to equitable program access and participation.

Research Recommendations

- Partner with community groups to gain feedback on customer service issues that could help inform equity assessments and civil rights compliance reviews.
- When implementing new procedures or conducting research, provide adequate funding for local agency offices to hire enough staff and provide training. When agencies are underfunded, they become understaffed, thus decreasing available assistance and increasing wait times for participants. This includes when staff are asked to dedicate time to data collection for research purposes.
- Establish metrics for staff accountability for customer service (e.g., performance reviews and client feedback), provide training and skills development, and empower local staff to offer recommendations for systemic improvements. One potential area for interdisciplinary work is with industrial and organizational psychologists.
- Collaborate with state administrators to test notices, messages, and technology tools with participants and community-serving agencies prior to implementation.

(2) Simplify applications and enrollment. There is broad consensus that simplifying the application process and integrating online and telephone service can help increase enrollment.[117,118,119,120,121] State and local SNAP, WIC and child nutrition agencies should be allowed to offer a full range of application options, including online, by phone, and in person. Early studies during COVID-19 indicate that waivers have helped increase participation and ease benefit redemption.[122,123]

Research recommendations

- Evaluate the utility, ease of use, and comprehension of websites and apps. Involve community input to ensure material is culturally appropriate.
- Conduct further case studies assessing the impact of COVID-19 waivers and flexibilities on enrollment, churn, dietary behaviors, food security, financial security, stress, and health. Focus on potential differences by income, geography, access to broadband, race and ethnicity, and immigration status.

(3) Coordinate across social safety net programs regarding applications, outreach, and enrollment assistance. Many means-tested programs have significant overlap in eligibility criteria. Despite this, individuals and families enrolled in one program might not be enrolled in another due to burdensome paperwork, lack of awareness, and misinformation. Coordination across programs is critical because individuals often face multiple material insecurities, including income, food, housing, and health care insecurity.[124] The history of U.S. slavery, segregation, deindustrialization, migration, and social policies has resulted in disproportionately high rates of these overlapping insecurities among communities of marginalized races and ethnicities.[125]

For example, most adults and children who qualify for Medicaid, based on income eligibility, also will qualify for SNAP and WIC; however, in 2018, less than half (47 percent) of Medicaid enrollees also participated in SNAP, and 54 percent of children under 5 years old who were enrolled in Medicaid also were enrolled in WIC.[126]

Expanding streamlined eligibility for school meals, WIC, and other child nutrition programs to more families will encourage more people to apply, reduce red tape, and free up school, child care, and WIC resources. Using automatic income eligibility mechanisms, such as direct certification, community eligibility, and adjunctive eligibility, makes eligibility determinations more reliable and closely connects the nutrition and health programs that marginalized and underserved families need.

In Washington, D.C., the partnership between Community of Hope and D.C. WIC is a successful example of linking programs to reduce inequities. Recognizing that many of their patients are eligible for WIC, Community of Hope has a partnership with D.C. WIC to make sure WIC services are available at each of their clinics. D.C. WIC uses its new mobile WIC unit to create one-stop shopping for expectant mothers, infants, and children to participate in WIC.

Research recommendations

- More pilot programs are needed to evaluate the impact of data -sharing measures on program enrollment and retention, and data should be disaggregated by race and ethnicity. Examples include:
    - Express Lane Eligibility (ELE), where Medicaid and the Children's Health Insurance Program can rely on eligibility findings from other programs to identify, enroll, and renew coverage for children. ELE reduces participant burden

and administrative costs, although impact is rarely reported by race or ethnicity.[127,128]
    - SNAP, Medicaid, and Temporary Assistance for Needy Families (TANF) provide adjunctive income eligibility for WIC. A recent research brief describes how data sharing and matching with SNAP and Medicaid can be used to increase enrollment in WIC, and it includes key considerations for executing a data-sharing agreement across programs and agencies.[129]
    - School districts can use income data from Medicaid to identify students for free and reduced-price meals without a separate application. The success of the initial Medicaid pilot for direct certification should be followed by additional pilot programs in more states that allow for direct certification.
- Evaluate the impact of expanding access to SNAP through Broad-Based Categorical Eligibility (BBCE) and raising gross income limits. Because other safety net programs use SNAP enrollment, this would increase awareness of and enrollment in other programs. For example, one study found that increases in BBCE increased state-level enrollment in free and reduced-price school meals and in WIC.[130]
- Evaluate short- and long-term costs across agencies that coordinate enrollment. Increased collaboration between agencies will require up-front investments in information systems and technical assistance, but the streamlining of services is expected to save money in the long term.
- Evaluate different tools to streamline the application process for multiple programs. Examples include ONE Oregon,[131] which provides enrollment assistance for the Oregon Health Plan, SNAP, TANF, Refugee Program, and Employment Related Day Care; Los Angeles County's YourBenefitsNow! webpage,[132] which allows residents to apply for and view their benefits online for CalWORKs, CalFresh, General Relief, and MediCal; Your Texas Benefits,[133] which has application tools and navigators for SNAP, TANF, health insurance, mental health services, and WIC.

B. Eliminate arbitrary barriers to eligibility and improve benefit computation rules.

Eligibility barriers for SNAP include time limits for certain unemployed and underemployed people who are unable to document sufficient weekly work hours, bans for former drug felons, and the five-year bar that disqualifies many adults with legal permanent resident status. In addition, only certain college students are able to apply based on enrollment status, income, and work hours.[134] Food insecurity is higher among college students who represent systemically and systematically oppressed racial and ethnic groups, yet few students apply due to lack of awareness or complexity of applying.[135]

Expanding federal income and asset eligibility would also help households located in areas with higher costs of living and working families with significant out-of-pocket expenses for child care and shelter. Raising asset limits under broad-based categorical eligibility in SNAP has been associated with an increase in assets.[136,137] Stricter asset limits perpetuate systemic barriers to accumulating savings and wealth for people representing consistently marginalized racial and ethnic groups.[138]

Research Recommendations

- Mixed methods research is needed to better understand the holistic impact that eligibility restrictions have on a range of indicators, including work, health, and education. Examples include:

- How do work requirements impact students? Are parent students able to pursue their education, or do work requirements result in delaying studies?
- What happens to health and financial stress when losing a job also results in a loss of benefits (e.g., SNAP, EITC)?

C. Reduce the stigma of participating in social safety net programs.

Several strategies have been shown to reduce stigma in the federal nutrition programs. Providing EBT cards has reduced stigma for participants in SNAP and WIC, which has increased enrollment.[139] Having time for all students to participate in school breakfast after the bell has increased participation in free and reduced-price breakfast.[140] In addition, schools have been able to provide meals to all children at no charge from spring 2020 through school year 2021–2022, and this should be maintained beyond the pandemic. Healthy school meals for all supports participation among children whose families are struggling, but do not meet the current eligibility threshold to qualify for free school meals. Healthy school meals for all would eliminate the possible stigma from participating in school meals or from having unpaid school meals debt.

Research recommendations

- Conduct qualitative research with participants in the federal nutrition programs about continued sources of perceived stigma and changes to program rules that would reduce (or increase) stigma. Interventions to improve customer service or enrollment should also measure changes in perceived stigma. For example, obstructive bureaucracy (long wait times, complex application processes, etc.) and punitive processes cause federal programs to be perceived as deliberately penalizing.[141]
- Researchers can help assess and address implicit biases among program staff. Recommended strategies include providing anti-racist and cultural competency training, particularly those that provide information to refute common stereotypes.
- Researchers should engage in assessments of their own biases that may be stigmatizing to community partners or program participants.
- Partner with program staff and service providers who are from the community. For example, immigrant families often cite family child care as the best choice for receiving culturally relevant care.[142]
- More research is needed on developing stigma-reducing tools for individuals experiencing stigma (affirmation interventions, social support) and how to incorporate them within existing interventions, such as nutrition education programs.[143]
- Develop public campaigns to reduce stigma and track shifts in public opinion.[144] Successful examples include campaigns to change public opinions about homophobia, HIV/AIDS, and mental illness.[145] Encouraging stigmatized people to share their stories, particularly influential leaders who may have had to access program benefits at some point in their lives, is one strategy that can be incorporated into a campaign.

D. Ensure that families and individuals, regardless of immigration status, have access to programs.

Some immigrant families face unique barriers to federal programs due to language barriers, discrimination, fear of deportation, and misinformation about eligibility.

A report released by FRAC, in partnership with the National Immigration Law Center, found that the 2019 Department of Homeland Security (DHS) public charge rule had a chilling effect on program enrollment in nutrition programs among Latino families.[146] This included SNAP, a program directly covered by the public charge rule, as well as programs not covered, like WIC,

school meals, and P-EBT. For example, more than one-quarter of the immigrant parents who were surveyed reported that they stopped using SNAP or other food programs in the last two years due to immigration-related concerns, which was echoed by nutrition service providers. Concerns stemmed from an unclear understanding of whether applying for any of the federal nutrition programs would count against them under the 2019 rule, which they did not.[147]

FRAC's findings are confirmed by other research linking uncertainty about the public charge law to reduced enrollment in nutrition assistance programs[148] and reduced enrollment of children in Medicaid before the rule even went into effect.[149]

Research Recommendations

- Engage in interdisciplinary work with researchers in media and communications, legal scholars, as well as with ethnic media sources and legal providers, to understand and counter misinformation about the federal nutrition programs and the public charge rule.[150] For example, succinct messaging on how eligible immigrant families can access programs without fear of public charge consequences can help combat misinformation. Examples of state SNAP agencies that have publicized how the public charge rule does not apply to SNAP include California;[151] Massachusetts;[152] and New York City.[153]
- Implement, publicize, and evaluate existing policies that help immigrants feel safer when seeking federal nutrition and food program assistance.[154]
- Disseminate research findings through community reports in multiple languages.
- Build relationships with immigrant communities and immigrant-serving organizations.[155] This ensures that families hear about research interventions and the federal nutrition programs in accurate and easy-to-understand terms that are culturally appropriate, in a language they are familiar with, and from those they trust. Partner with trusted organizations to craft and disseminate information about engagement.

E. Strengthen and expand the Community Eligibility Provision.

The Community Eligibility Provision (CEP) has highlighted the value of offering meals at no charge to all students. It overcomes the barriers to school meals applications, helps eliminate stigma (that participation is for "poor kids"), and ensures that all children have access to the breakfast and lunch they need to learn and thrive.[156] Children whose families are struggling, but do not meet the current eligibility threshold to qualify for free school meals, are more likely to participate in school breakfast and lunch in CEP schools compared to non-CEP schools.[157]

Research Recommendations

- More schools are eligible to adopt CEP but face real and perceived barriers to participation. USDA and the U.S. Department of Education could partner together to overcome perceived barriers (e.g., education funding and the loss of data related to a student's free or reduced-price status) and to increase outreach to schools, particularly those with limited resources, which too often includes schools that serve communities of people who have consistently been oppressed because of their race or ethnicity. Research is needed to assess barriers and strategies to overcome them.
- Ensuring access to healthy foods is important for individual students, but further research is needed to understand how universal meals improves the health and education of an entire classroom or school community. Research is needed to assess the impact of CEP on nutrition and school performance among students who would have qualified for free or reduced-price meals, students whose families have low incomes but would not have qualified, and students whose families have higher incomes.

4. Implementation Science Research Needed

Implementation science has never been more important. The COVID-19 pandemic resulted in widespread health and economic challenges that have required quick action and the use of evidence-based policies in novel circumstances. In addition, the 2020–2021 movement around racial unrest has resulted in more urgent attention to the place-based structural systems that drive inequities in population health. Implementation science is needed to understand how to apply evidence-based interventions to heterogenous contexts, because the inability to do so may result in interventions that are ineffective at reducing inequities or, worse, unintentionally exacerbate them.[158]

Last year, Lane and colleagues[159] wrote about how implementation science could be used to address child food security during the pandemic. The authors discussed how the COVID-19 pandemic has shortened the feedback cycle between research and policy by increasing the rapid mobilization of research, including expedited review processes, collaborative teams, and communication. The authors reviewed the federal nutrition programs and future directions for implementation science in addressing childhood hunger and nutrition and include a number of important recommendations for future implementation science research.

In addition to the recommendations set forth by Lane et al., FRAC has identified priority considerations for using implementation science methods:

- *Incorporate intersectionality framework into implementation science*. Research should focus on the historical processes that have led to different power structures and social determinants. These processes operate differently across multiple identities and by place. This will require interdisciplinary work, including disciplines such as social epidemiology, women and gender studies (specifically Black feminism), or sociology, and qualitative data collection from community members.[160] Explicitly defining the structures that explain inequities has important implications for policy. For example, racial residential segregation is associated with health inequities,[161] including access to healthy food. However, this does not imply that desegregation will reduce health inequities; rather, attention to the underlying structures, institutions, and decisions that drive segregation and the unequal allocation of resources will lead to different implications for interventions.[162] Lastly, incorporating intersectionality into implementation science research will require guidance from NIH. Many proposals received by NIH that claim to focus on intersectionality do not appropriately define how their research questions, designs, or data analyses are intersectional.[163] A recent project to integrate intersectionality into knowledge transformation theory in Canada can serve as a useful example.[164]
- *Involve the perspectives of decision makers (e.g., stakeholders who designed and administered programs) and community members (e.g., program recipients, community-based organizations).*[165] Partnership with local communities is especially important in historically and currently marginalized communities that have been invisibilized due to inadequate data collection. For example, see resources for American Indian and Alaska Native communities[166] and Pacific Islander communities.[167]
- *Prioritize research on interventions that reduce disparities, rather than just improve public health*. In an article in March 2021, Brownson and colleagues outlined a series of actions for making health equity a central aim of implementation science.[168] In addition, the Getting to Equity framework[169] in obesity research is an example of a way to prioritize policy, systems, and environmental interventions that reduce inequities.
- *Dissemination*. Make research digestible for communities and policy makers where relevant. Strategies include research briefs, data visualization, relationships with local

media and elected officials, including posting requests for research and responses (for example, see the Columbia University Center on Poverty & Social Policy).

- *Fund coalitions of researchers and community organizations with adequate funding to encompass necessary training to work across disciplines and build relationships across sectors*. Funding should allow for people with lived expertise to be compensated as consultants and should include the costs of multiple publication and research dissemination priorities. In addition, funding should target research labs and organizations led by historically and currently marginalized groups by race, ethnicity, gender identity, religion, geography, etc. NIH's UNITE program is a commendable initiative, and grantees should be held to the same standards of promoting diversity and inclusion within their organizations and institutions.

Specific research topics relevant to food and nutrition security include

- Partnership with community organizations that work to address food insecurity and structural racism (for examples, see recent Op-Ed by Ashanté Reese), with specific attention to how organizing efforts are tailored to different place-based historical processes and distributions of power;
- Evaluation of programs, policies, and waivers related to social policy and the federal food programs that varied at the state and local level during COVID-19;
- Developing new measurement tools tailored to different target populations to assess food and nutrition security. For example, in Native communities, measures of native food security in addition to the USDA measure of food security;[170]
- Mixed methods research on the impact of stigma on program enrollment (both stigma towards people earning a low income and stigma perceived by the same group of people);
- Evaluation of how different social policies, including but not limited to the federal nutrition programs, the increase in household economic resources and how this impacts food and nutrition security. Attention should be paid to interactions with the food environment and cost of living, as well as whether the prioritization of healthy food is modified by household composition (e.g., presence of children or individuals with chronic illness);
- Understanding different methods for improving access to healthy food. For example, research is needed to understand the circumstances under which an increase in healthy food retailers may be more effective compared to improving supply distribution networks of healthy foods to retailers that already exist, or compared to the improvement of public transportation to existing healthy retail options;
- Evaluation of online pilots in SNAP and WIC that expanded during COVID-19[171] and healthfulness of online purchasing; and
- Evaluation of disaster response strategies on rates of food insecurity and access to clean water and healthy food. Future research in this area should integrate an understanding of how climate change will impact hunger, nutrition, and equity. For example, the effects of climate change will impact hunger because changing weather patterns and sea level rise will increase natural disasters while increased land temperatures will impact the cost of food as well as population health. Climate change will impact home environments, water, sanitation, food sources, and community assets. The CUNY Urban Food Policy Institute and Hunger Free America reviewed food policy responses to emergencies from 2000 to 2020.[172] Implementation science can play an important role in applying these lessons to different contexts in future emergencies.

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