



# BEYOND FOOD

Addressing Food Insecurity  
through Food Pantry Interventions

April 2023

*"Because it takes more than food to end hunger"*

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## **Beyond Food: Addressing Food Insecurity through Food Pantry Interventions**

A report prepared by Kaitlyn Parks for More Than Food Consulting

April 2023

## ACKNOWLEDGEMENTS

My deepest appreciation to the staff of More Than Food Consulting, LLC and the many food pantry leaders who provided ongoing support, guidance, and feedback through the process. I cannot thank them enough for taking the time and making this project a reality. It is my sincerest hope that this analysis will assist them in their work.

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*Cover Photo. Graduates from Kelly Center for Hunger Relief's FreshStart coaching program. Credit: Kelly Center.*

[kellyfresh.org/freshstart](http://kellyfresh.org/freshstart)

## **CLIENT PROFILE: More Than Food Consulting, LLC**

More Than Food Consulting, LLC is a research-based consulting firm advancing “organizational and systems change in the charitable food network to ensure people have economic and nutrition security.” They accomplish this through translational research, capacity building, and inspiring action. CEO Katie Martin is a thought leader with more than 25 years of experience in anti-hunger work. She is the lead researcher and co-author of over 20 publications in the food security space, including a randomized control trial assessing a comprehensive intervention of client choice, motivational interviewing, referrals, and nutrition education. In 2021 Martin published *Reinventing Food Banks and Pantries: New Tools to End Hunger* in which she synthesizes her breadth of research, promotes a paradigm shift for tackling hunger, and offers a range of solutions from providing client choice to offering job training programs and joining the fight for a living wage.

More Than Food Consulting is interested in sharing information with food pantries and food banks about the cost-effectiveness of the interventions they already recommend as well as additional alternatives and policies to address food insecurity and poverty.

## **DISCLAIMER**

The author conducted this study as a part of the program of professional education at the Frank Batten School of Leadership and Public Policy, University of Virginia. This paper is submitted in partial fulfillment of the course requirements for the Master of Public Policy degree. The judgements and conclusions are solely those of the author, and are not necessarily endorsed by the Batten School, the University of Virginia, or by any other agency.

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## EXECUTIVE SUMMARY

Food insecurity is a persistent problem in the United States. As of 2021, the US Department of Agriculture (USDA) estimates that 10.2 percent of Americans (34 million) are food insecure - lacking reliable access to enough safe and nutritious food (Key Statistics & Graphics, 2022). A large charitable network exists to address this problem. Over 370 food banks and more than 60,000 food pantries and meal programs operate across the country, distributing billions of pounds of food each year to individuals and families (Costanzo, 2020). Since the opening of the first food bank in 1967, these organizations have become an established institution in the United States in an effort to eradicate hunger. Canned food drives, company-wide fundraisers for local food banks, walks for hunger, and other community service projects have become integral to the fabric of American society.

*Issue:* Despite an increase in the amount of food and resources aimed at fighting food insecurity, the prevalence of food insecurity has remained relatively unchanged over time (*Hunger Facts / Move for Hunger*, 2021). Traditional food bank and pantry models measure success by outputs of pounds of food distributed and the number of people served, many of whom they see on a week-to-week, year-to-year basis. Increasingly, food banks and food pantries are recognizing that it takes more than food to end hunger.

More Than Food Consulting, LLC is named after this conclusion. A consulting firm focused on food banks and food pantries, More Than Food Consulting is positioned to propose interventions to food insecurity beyond food. More Than Food Consulting is interested in upstream, long-term approaches to address economic and nutrition insecurity. The following report provides policy options to the firm and broader food pantry landscape to address root causes of food insecurity beyond food-based interventions.

*Approach:* This report investigates the current charitable food landscape in the US, traditional models of success at food banks and pantries, and what existing research tells us about how to best address food insecurity. It then provides a policy analysis of five interventions to food insecurity at the pantry level, including:

1. Status Quo (Traditional Pantry Model - Just Food)
2. Client Choice
3. Warm Referrals
4. Short-Term Coaching
5. Long-Term Coaching

This report uses the following criteria to evaluate each alternative: *effectiveness, cost-effectiveness, administrative feasibility, and spillover effects*. Effectiveness is the expected food insecurity outcomes given any alternative, and cost-effectiveness compares costs to food insecurity outcomes. This report concludes with a final recommendation and implementation plan.

***Key Findings and Recommendation:*** The final recommendation is for alternative five: implement long-term coaching with motivational interviewing. Coaching with motivational interviewing is a client-centered approach where a coach helps a client explore behavior change by asking open-ended questions, affirming their strengths and abilities, reflecting on their feelings, and summarizing their statements. The coach's role is to create a safe and supportive environment that encourages clients to express their desires, values, and reasons for change, rather than imposing their own agenda or advice. Through active listening and empathetic responses, the coach aims to increase the client's motivation and self-efficacy for making positive changes while also identifying and resolving potential barriers or resistance. The ultimate goal of one-to-one coaching with motivational interviewing is to empower the client to take ownership of their own goals and create a sustainable plan for achieving them.

Existing literature provides strong evidence that one-to-one coaching with motivational interviewing positively effects individuals' food security, diet quality, self-sufficiency, financial well-being, and perceived social support (Martin K. et al., 2019; Sanderson et al., 2020). This analysis supplements existing literature to show that long-term coaching is likely to decreasing food insecurity by almost 45 percentage points compared to traditional food pantry models. In addition, a cost-effectiveness analysis finds long-term coaching to result in \$49.44 for each percentage point reduction in food insecurity per person. While this is the most cost and resource-intensive policy alternative, it has the potential to address the root causes of food insecurity and provide clients with the necessary tools and resources to achieve sustainable improvements in their overall well-being. Moreover, by empowering individuals to take charge of their goals, coaching with motivational interviewing creates a sense of agency and self-determination, leading to improved mental health outcomes and greater community engagement. Ultimately, implementing long-term coaching with motivational interviewing as a food pantry intervention provides a comprehensive approach beyond food and addresses the underlying factors contributing to food insecurity.

## INTRODUCTION

Between 2002 and 2022, food insecurity rates fluctuated around 17.3 percent for households with children and 9.8 percent for adult-only households (see Figure 1). Meanwhile, the scale of food charity efforts has skyrocketed. For example, in 1979, Feeding America, the nation's largest anti-hunger network, distributed 4 million pounds of food through partner food banks. In 2002 that number grew to 1.6 billion pounds of food, 5.2 billion pounds in 2019, and 7.5 billion pounds in 2020 (exaggerated by the COVID-19 crisis) (Lakhani & Uteuova, 2021).

**Figure 1: Trends in food insecurity in US households (2002-2022)**

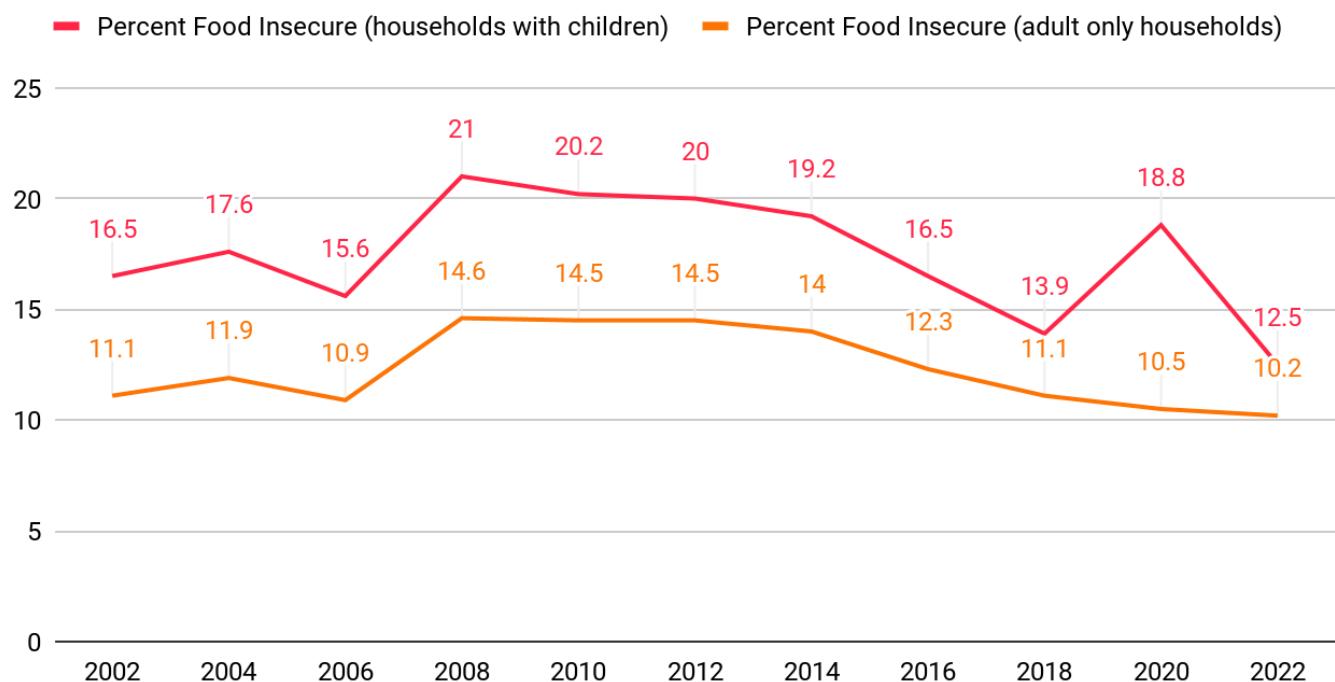


Figure 1. Trends in food insecurity in US households (2002-2022). From “USDA Economic Research Services - Key Statistics & Graphics.” [usda.gov](http://usda.gov), 2017.

Many leading experts in the food security field have critiqued the traditional distribution model of Feeding America and its member food banks and pantries and offer inspiration for shifting the paradigm from emergency relief to lasting change.

Andrew Fisher, author of *Big Hunger: The Unholy Alliance Between Corporate America and Anti-Hunger Groups*, suggests that “we have been handling hunger as if we were doctors, with doses of medicine in the form of food giveaways. We have been treating the symptoms and ignoring the disease. At the heart of this medical model, or hunger industrial complex - the web of connected corporations, anti-hunger groups, and government agencies that perpetuate hunger because it is profitable - sits the charity behemoth Feeding America” (Fisher, 2020)

In 2023, Brian Greene, President and CEO of the Houston Food Bank, published an op-ed that underscores food banks’ miscalculated strategy of historically treating food insecurity as a food problem and not an economic one: “In the early days of the Feeding America network, the prevailing thought was that if we just distributed enough food, we would end hunger in America. We were wrong. The network long ago reached the amount of distribution that would have theoretically eliminated the meal gap of the 1980s. Yet there is just as much hunger in the US as there was when we started” (Constanzo, 2023).

In her book *Reinventing Food Banks and Pantries: New Tools to End Hunger*, Katie Martin argues that “if handing out more and more food was the answer, we would have solved the problem of hunger decades ago...The key is to focus on the root causes of hunger. When we shift our attention to strategies that build empathy, equity, and political will, we can implement real solutions” (Martin, 2021)

These passages highlight the limitations of traditional distribution models and advocate for a shift toward strategies that address the root causes of food insecurity. This technical report underscores the need for a paradigm shift toward lasting change by addressing the following problem statement:

**Despite an increase in the amount of food and resources aimed at fighting food insecurity in the US, the prevalence of food insecurity has remained relatively unchanged for the past twenty years, putting the health, development, and normal growth of Americans at risk.**

## BACKGROUND

Activist and entrepreneur John van Hengel developed the modern food bank model in 1976 in Phoenix, Arizona. After witnessing a single mother feeding her children out of a dumpster, van Hengel was inspired to create a place where food could be stored for people to pick up rather than being discarded, similar to how “banks” store money for future use. Credited as the “Father of Food Banking”, Van Hengel opened St. Mary’s Food Bank, the first formalized food bank in the world, and would eventually establish Feeding America, a nationwide network of food banks that collect excess food from a variety of suppliers and source it to pantries, soup kitchens, shelters, and other community-based agencies (*Feeding America’s History | Feeding America*, 2023).

Feeding America and its member food banks have responded to food insecurity for almost half a century through food distribution and emergency relief. While there is just as much food insecurity today as 45 years ago, the scale of food distribution efforts has grown substantially over the past four decades. (Costanzo, 2023). Figure 2 illustrates the growth of the food banking sector.

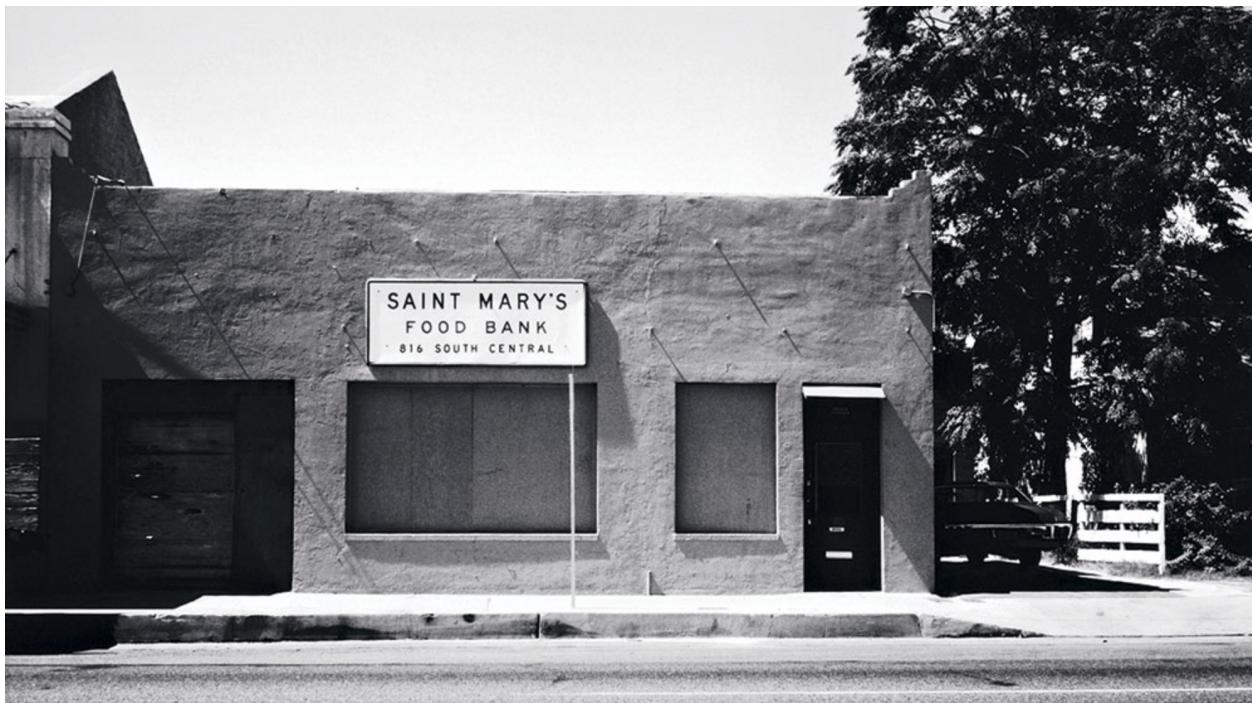


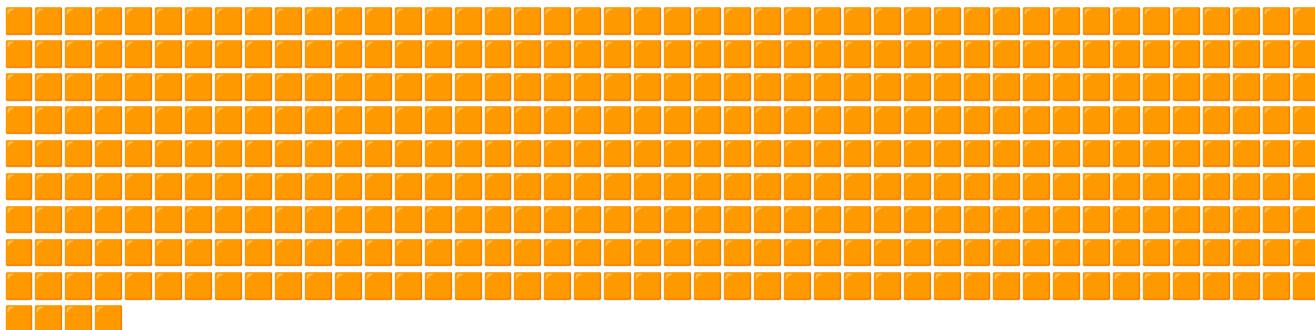
Figure 3. Image of Saint Mary's Food Bank, the first food bank established in Phoenix, Arizona. From “Our Story - European Food Banks Federation - FEBA.” [Eurofoodbank.org](http://Eurofoodbank.org), 2018.

**Figure 2: Scale of food distribution in pounds (1979, 2002, 2019) \***

In **1979**, Feeding America distributed **4,000,000 pounds** of food.



In **2002**, Feeding America distributed **1,600,000,000 pounds** of food.



In **2019**, Feeding America distributed **51,600,000,000 pounds** of food.

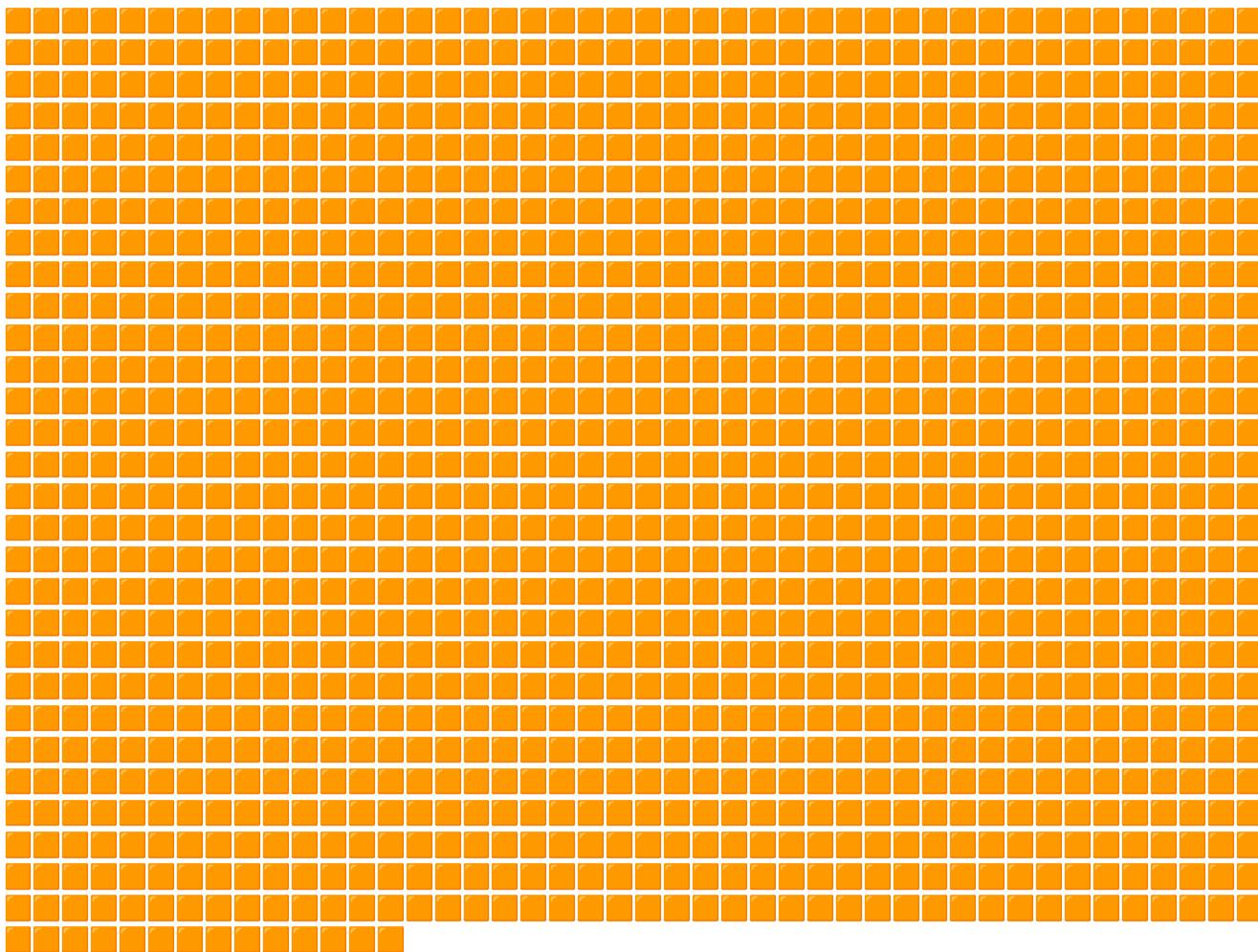


Figure 2: Scale of food distribution in pounds (1979, 2002, 2019). Adapted from "The Hunger Industry: Does Charity Put a Band-Aid on American Inequality?", by N. Lakhani, 2021, April 28. \*Each orange square represents 4 million pounds of food.

## Disparate Experiences of Food Insecurity Across Demographics

An estimated 10.2 percent or 34 million Americans, including 9 million children, are food insecure, defined by a lack of reliable access to enough safe and nutritious food (Key Statistics & Graphics, 2022). Food insecurity has disparate effects across demographics. Across the United States, people of color, low-income households, and folks living in rural areas consistently face disproportionately high rates of food insecurity. While the most considerable portion of food insecure individuals are White, Black, Native American, and Latino populations are two to three times more likely to be food insecure. The magnitude of these disparities varies regionally. In some counties, for example, Black and Latino individuals are ten times more likely to be food insecure than White individuals (*Hunger in America / Feeding America*, 2023).

These disparities have substantial implications for health outcomes in disadvantaged communities. Food insecurity negatively impacts health, cognitive functioning, ability to pay for other essential basic needs and damages a child's development and growth (*Feeding America's History / Feeding America*, 2023). On average, food-insecure individuals have higher overall health care costs when compared to food-secure individuals, likely because food insecurity is associated with a higher incidence of chronic disease including diabetes, hypertension, heart disease, kidney disease, and depression (*Impacts of Hunger on Health / Iowa Food Bank Association*, n.d.).

Healthcare costs linked to food insecurity vary across regions. Using National Health Interview Survey/Medical Expenditure Panel Survey, Map the Meal Gap, and Dartmouth Atlas of Healthcare data, Feeding America estimates the following annual healthcare costs associated with food insecurity by level (Table 1). Such variations suggest that state and local food security policies and practices could enhance health outcomes and improve associated spillover effects such as healthcare expenses.

Level	Annual Total	Low	High
State	\$687 million*	\$57.6 million in North Dakota	\$7.2 billion in California
County	\$4.4 million*	\$29,813 in San Juan County, CO	\$2.3 billion in Los Angeles County, CA
Adult	\$1,834**	\$1,395 in Hawaii	\$2,083 in New Jersey

\*State and county estimates represent the median annual total.

\*\*The adult estimate represents the per capita mean annual total.

Table 1: Healthcare costs associated with food insecurity by state, county, and adult levels. Adapted from "The Healthcare Costs of Food Insecurity Exploring Geographic Variation by State and County." by Feeding America, 2019.

Food insecurity also has implications for educational outcomes and lifetime earnings. Children experiencing food insecurity are generally undernourished, affecting school performance and requiring long-term school-based and health care spending. In addition, absenteeism and needing to repeat grades are linked with food insecurity. This means that individuals who experience food insecurity as children enter the workforce with lower levels of education, technical skills, and human capital, creating a less competitive labor pool (*Impacts of Hunger on Health* | Iowa Food Bank Association, n.d.).

### The Current Charitable Food Landscape in the US

A large charitable network exists to address food insecurity in the United States. Over 370 food banks and more than 60,000 food pantries and meal programs operate across the country, distributing billions of pounds of food each year to individuals and families (Costanzo, 2020). An estimated 53 million people received food assistance from the charitable sector in 2021 (53 Million People Visited Food Banks | Feeding America, 2021). Food banks and food pantries associated with Feeding America distributed 5.5 billion meals in 2021, 33 percent more than before the COVID-19 pandemic.

Federal food assistance programs like SNAP, Free or Reduced School Lunch, and TEFAP also exist to address the immediate need for food security but not the complex root causes such as poverty, lack of affordable housing, limited access to healthcare, and systemic inequalities. Food insecurity negatively impacts an individual's health, cognitive functioning, ability to pay for basic needs, and child development. While these programs have been successful in lifting people out of poverty, generating economic activity, and improving health, they do not solve the underlying issues that contribute to food insecurity,

### Examining Traditional Models of Success

Traditional food bank and food pantry models measure success by pounds of food distributed and the number of people served, many of whom they see on a week-to-week and year-to-year basis. While pounds of food and the number of people served are the most accessible outputs to measure (and important considerations for donors and strategic planning), such metrics may not do a good job telling the whole story and unfortunately, have potential to do more harm than good. For example, a food bank or pantry may appear successful because it distributes a lot of food to a lot of people, but the food may be in the form of low-nutrient calories (soda weighs a lot, kale doesn't). Furthermore, traditional metrics of success do little to address the root cause of food insecurity - namely, income and economic inequality. Identifying new metrics to measure lasting change can be tricky, particularly for resource-strapped nonprofit organizations. Still,

many charitable food organizations are increasingly realizing that it takes more than food to end hunger and are looking to capture more robust measures of their work.

### What does the research tell us about how to address food insecurity?

Though the charitable food system has been an established institution in the US since the early 1970s, research on the efficacy of food banks and food pantries has been lagging. Research into non-traditional interventions on food insecurity has grown in the past decade but remains modest (An et al., 2019). A systematic review of food pantry-based interventions in the United States in 2019 identified only 14 studies published since 2009 investigating food bank and food pantry interventions that met rigorous scientific criteria. These studies included pre-post study and randomized control trial designs that investigated interventions ranging from nutrition education, client choice models, food displays, and diabetes management. All studies found pantry-based non-traditional interventions to be effective, to some degree, in improving diet-related outcomes like nutrition and health literacy, food security, cooking skills, healthy food choices and intake, diabetes management, and access to community resources (An et al., 2019).

Reexamining traditional metrics of success requires a comprehensive evaluation of what works and what doesn't. The following evidence review explores existing literature related to non-traditional interventions on food insecurity at the food pantry level.

“

*For many years, (food banks and food pantries) stood on the sidelines of policy debates and didn't pressure the government to strengthen the social safety net. For many years, we served more people, distributed more pounds of food, built bigger warehouses, and focused on feeding people today. But change is happening. Food banks and food pantries across the country are promoting equity, creating nutrition policies, advocating for federal nutrition programs, and developing paths to stability. I want to be part of the change. How about you?*

- Katie Martin, *Reinventing Food Banks and Pantries: New Tools to End Hunger*

”

## EVIDENCE REVIEW

### CLIENT CHOICE MODELS

Extensive literature suggests that behavioral interventions can alter food choices and improve diet quality (An et al., 2019; Pruden, 2020; Wilson, 2016). Food pantries often implement choice models in an effort to address underlying causes of food insecurity while also meeting immediate food needs. The client choice model allows participants to choose their own food items, similar to a grocery store experience. Choice differs from traditional models, where perishables and fresh food are pre-boxed and selections are made by pantry staff and volunteers to distribute to the end user.

Borrowing from the nudge theory in behavioral economics, client choice pantries are more cost-effective than the pre-boxed model (Pruden, 2020; Wilson, 2016). A 2020 study published in Current Developments in Nutrition found that the client choice model reduced leftover, unused food items by 11 percentage points. Findings also indicate choice models are associated with healthier food selections (Pruden, 2020; Wilson, 2016).

The concept of client choice pantries was formally coined by John Arnold in his 2004 handbook *Charity Food Programs That Can End Hunger in America*. As Executive Director of Second Harvest Gleaners Food Bank of West Michigan (now Feeding America West Michigan), Arnold and his staff surveyed pantry guests to investigate how charitable food distribution could “work more efficiently and effectively”. They asked pantry guests which style of the following services they would prefer:

1. “Receive a standardized food box assembled completely without regard to your family’s situation or needs.
2. Assemble your own food box but only within certain pre-set guidelines, such as two items from each food group.
3. Assemble your own food box but only under the guidance and supervision of a pantry staff person walking along side you to ensure you make approved choices.
4. Pick out your own food just as you would at a store.” (Arnold, 2004)

Given these choices, most people chose number 4 with a caveat of having some idea of “how much is fair, reasonable or okay for them to take, because when given the opportunity to take as much as they want to, a vast majority of people will most fear taking more than they should have, thereby depriving some other, possibly worse-off family, of the help they need” (Arnold, 2004). Based on this research, Arnold established the Waste Not Want Not model in which

clients are able to take as much as they feel they need and are permitted to freely assemble their own food box from whatever goods are available.

Many pantries have switched from traditional models to client choice since Arnold's publication. However, research remains limited on client choice pantry's impact on food insecurity and the perceived barriers to converting traditional pantry models to choice. Barriers may include food supply and waste concerns or confusion from staff, volunteers, and clients. Researchers at More Than Food Consulting in collaboration with Feeding America, NORC, and the Morgan Stanley Foundation are currently undergoing research to measure what may make it hard to offer choice in pantry settings and the impact of offering more choice for staff, volunteers, and importantly, the people who shop at pantries (*Martin, 2022*).



*Dorothy Patterson shops the produce aisle of the Greensboro Urban Ministry's Client CChoice food pantry. Credit: Woody Marshall, News & Record.*

[https://greensboro.com/news/local/a-greensboro-pantry-is-set-up-to-look-like-a-real-grocery-store-todays-special/article\\_d2e6bf12-4b58-11ed-901a-938b308d27f9.html](https://greensboro.com/news/local/a-greensboro-pantry-is-set-up-to-look-like-a-real-grocery-store-todays-special/article_d2e6bf12-4b58-11ed-901a-938b308d27f9.html)

## NUTRITION EDUCATION

Nutrition education is the most commonly studied type of food pantry intervention. It is offered in various ways, including cooking classes, plant-based provisions, diabetes management, and general educational literature (An et al., 2019). A longitudinal cohort study found a 15 percent decrease in food insecurity after a 6-week cooking class intervention (Flynn, 2013). In addition, Seligman et al. conducted a 6-month pilot intervention providing 687 diabetic pantry clients in three states with diabetes-appropriate food, blood sugar monitoring, primary care referral, and self-management support. This randomized control study found improvements in glycemic control, fruit and vegetable intake, self-efficacy, and medication adherence (Seligman et al., 2015).

## CONNECTIONS TO COMMUNITY SERVICES

Food pantries customize their resources to meet the needs of their local communities. Food pantries usually have good reputations and strong partnerships with other local organizations and community services. In this way, they are able to connect pantry clients to additional services from health and child care providers, SNAP and WIC benefits, education, job training, and rent assistance, among others.

Comprehensive wrap-around services can provide a holistic approach to providing care and support to individuals, particularly those with needs beyond food, like mental health issues, substance abuse, or developmental disabilities. While research has shown that comprehensive community connections are most successful with the support of a one-to-one coach (discussed in the next section), many community service providers take a less comprehensive approach in the form of warm referrals (Martin et al., 2016).

The customer service industry coined the term “warm handoff” to categorize a service or support when someone introduces an individual to another person or opportunity. Also called warm referrals, these handoffs occur when a referrer provides a personal recommendation. This contrasts with the concept of a cold referral when connections are more impersonal. Warm referrals are likely more effective because there is already trust and familiarity between the parties involved (*Creating Patient-Centered Team-Based Primary Care in PRIMARY CARE RESEARCH*, n.d.). Little research exists studying the effects of warm referrals on food insecurity at food pantries. However, warm referrals are effective in the healthcare industry as a beneficial approach for home health, drug uptake, care treatment, and helping people navigate local systems of care (Goldberg et al., 2018; Patel et al., 2022; Taylor & Minkovitz, 2021). This suggests that warm referrals have the capacity to empower people with knowledge, skills, and other information needed to be more self-sufficient.

## COACHING & THE MORE THAN FOOD FRAMEWORK

One-to-one coaching is an intervention similar to case management that involves pantry staff and volunteers helping guests set goals and navigate complex systems like social services or legal help. Coaches are responsible for assessing individuals' needs, developing action plans, coordinating services, and evaluating progress toward goals. Coaching aims to ensure that pantry guests receive personalized services that lead to improved outcomes.

Foodshare, the Chrysalis Center, and the University of Connecticut Health Center conducted a randomized control trial of a comprehensive food pantry intervention that incorporated coaching along with client choice, motivational interviewing, referrals, and nutrition education (*Martin K. et al., 2019*). The original pilot study, implemented in 2010 at a pantry called Freshplace in Connecticut, concluded with the first study of its kind to measure outcomes from a food pantry intervention. The pilot documented significant food security improvements at 3 and 9 months. Based on these findings, a similar framework was scaled and replicated at seven food pantries in Texas, Rhode Island, and Connecticut. Despite the diverse settings, results were significant and consistent with the original Freshplace results. The premise of the More Than Food framework is that addressing food insecurity requires more than just food. Guided by core values of empathy, dignity, and equity, More Than Food offers a toolkit for food pantries to reimagine their operations, programming, and strategic direction. This approach includes the provision of a welcoming culture, healthy food choices, and connections to community services and resources, all with the support of a coaching program. Unique to the framework is its emphasis on data collection and evaluation (*Martin K. et al., 2019; Sanderson et al., 2020*). The program involves a detailed training process and surveys administered at baseline, four, and nine months. Using bivariate regression models at each time point, Martin et al. found significant improvements for the following outcomes, identified by the corresponding survey method. Evaluation of these outcomes is increasing in the literature and indicates the growing interest and value of interventions beyond food.

- Food security (USDA Food Security model)
- Diet quality (Block Fruit/Vegetable/Fiber screener)
- Self-sufficiency (Missouri Community Action Family Self-Sufficiency Scale)
- Self-efficacy (General Self-Efficacy Scale)
- Financial well-being (Consumer Financial Protection Bureau scale)
- Multidimensional Scale of Perceived Social Support

The regression model below shows outcomes for food insecurity, self-sufficiency, fruit/vegetable/fiber consumption, and perceived social support. Findings from an initial sample size of 484 showed that the More Than Food framework decreased the odds of being food insecure by 65 percent in four months and by 82 percent in nine months. Self-sufficiency scores and fruit and vegetable consumption also increased at significant rates for both time periods (Sanderson et al., 2020). These findings indicate that the implementation of More Than Food framework determinately addresses the root causes of hunger.

Time	Percentage (N)Food Insecure	McNemar's test	Mean, SD (N)Self-Sufficiency Scores	Paired t-test
		(vs. baseline)		(vs. baseline)
<b>Baseline</b>	70.2% (340/484)		37.8, 5.9 (N = 481)	
<b>4 Months</b>	42.6% (87/204)	P <.0001	42.2, 5.5 (N = 205)	P <.0001
<b>9 Months</b>	25.3% (38/150)	P <.0001	45.1, 5.6 (N = 150)	P <.0001
Time	Mean, SD (N)Fruit Vegetable Fiber Score	Paired t-test	Percentage (N)High Social Support	McNemar's test
		(vs. baseline)		(vs. baseline)
<b>Baseline</b>	15.8, 7.8 (N = 473)		75.6% (366/484)	
<b>4 Months</b>	18.5, 8.0 (N = 203)	P <.0001	82.9% (170/205)	P = .012
<b>9 Months</b>	21.2, 8.0 (N = 146)	P <.0001	88.7% (133/150)	P = .0027

*Table 2. Changes in key outcomes at each time point. Reprinted from An Outcome Evaluation of Food Pantries Implementing the More than Food Framework by Sanderson et al., 2020.*

## LIMITATIONS & RESEARCH GAPS

A potential limitation of studies investigating interventions on food insecurity at food pantries is the inherent noisiness of the setting. In other words, food pantries have a lot of variation that might obscure attempts to isolate variables. Food pantries typically operate out of small nonprofits with limited resources and rely, in large part, on in-kind donations, so they offer different food and products from session to session. High reliance on volunteer capacity can make coordinated, uniform interventions difficult. In addition, most of the studies included in the evidence review include low sample sizes and are short in follow-up duration, making generalizability challenging.

Missing from the literature are cost analysis data of food pantry and food bank interventions on food insecurity. Ensuring that effective food insecurity interventions are scalable and financially feasible is critical to advancing the goal of addressing root causes of food insecurity. Cost-effectiveness research combines cost information with relevant measures of effectiveness to design constructive uses of resources and improve outcomes with available resources. Standardized and accurate cost data are valuable for the provision of effective interventions at scale in order to make the case for more and better investments. To this author's knowledge, no cost-effectiveness research exists exploring cost-effectiveness of specific interventions at a food pantry or food bank level.

There is, however, significant cost-effectiveness research about global-scale interventions on diet-related health, including child nutrition, food security, and malnutrition (*Gelli et al., 2009*). In the US, extensive research explores investments to improve nutrition and health, such as school feeding programs, healthcare services, and federally funded nutrition assistance programs (*Berkowitz et al., 2017*). Notably, analyses of SNAP and WIC find that these are cost-effective programs for improving nutrition and other meaningful outcomes like healthcare costs, quality-adjusted life years, and academic achievement (*Carlson & Neuberger, 2017*). Based on these findings, SNAP and WIC support should be an integrated toolkit for any community service organization, especially at food banks and food pantries.

## METHODOLOGY

This report aims to propose, analyze, and evaluate intervention options that address food insecurity at food pantries. The following section introduces four criteria that evaluate the proposed interventions, herein referred to as “alternatives.” The following sections focus on five alternatives designed for More Than Food, LLC to implement and provide consultation for partnering organizations. Each alternative section presents a description and evaluation of the proposed alternative using standard criteria. After introducing and evaluating each alternative, the analysis explores tradeoffs, advantages, and disadvantages through a direct comparison outcomes matrix. The final section concludes with a recommendation and considerations for implementation.

## EVALUATIVE CRITERIA

This analysis evaluates the proposed alternatives according to specific criteria to provide the best estimates of outcomes most relevant to More Than Food Consulting, LLC. Comparing the alternatives systematically allows for the provision of an evidence-based recommendation.

Drawing upon the existing literature and in partnership with More Than Food Consulting, the following alternatives are selected and evaluated based on their ability to meet the following criteria: *effectiveness, cost-effectiveness, and administrative feasibility*. The five alternatives are:

- Alternative 1: Status Quo (Traditional )
- Alternative 2: Client Choice
- Alternative 3: Warm Referrals
- Alternative 4: Short-Term Coaching
- Alternative 5: Long-Term Coaching

The chosen criteria aim to reduce food insecurity, be cost-effective and feasible for pantry implementation, and improve outcomes beyond food like health, financial well-being, and self-sufficiency. These criteria reflect the values of More Than Food Consulting as well as the constraints and opportunities faced by pantry organizations and guests. The projected outcomes in these categories are determined by the extent to which an alternative addresses the problem statement. Criteria are quantified where possible, and for criteria where qualitative metrics are most relevant, the alternative is ranked on a given scale. A description of each criterion and the methodology for scoring and weighting criteria is defined in detail below. A scored ranking system provides a useful tool to compare and evaluate different alternatives for reducing food insecurity, considering cost-effectiveness and feasibility, and improving additional

“spillover” effects. By using a standardized approach, it allows for a more objective and transparent assessment of the effectiveness of different interventions

## EFFECTIVENESS

Effectiveness is the extent to which policies achieve the benefits they are supposed to achieve. For this analysis, effectiveness evaluates the likelihood of the alternative to successfully reduce food insecurity. Food insecurity is the most relevant criterion by which to gauge the success of any given intervention. The USDA has a variety of validated tools with which to measure food insecurity. The most comprehensive is the US Household Food Security Survey Module, an 18-item three-stage design questionnaire. There is also a six-item short-form survey module that uses a subset of the 18-item module. These surveys can be used to evaluate changes in food security over time, based on any given alternative and are uniform across the literature evaluated.

Food insecurity outcomes are pulled from the literature (all of which rely on the aforementioned survey tools) and are represented in the analysis quantitatively by reduction of food insecurity because of the alternative compared to the traditional model baseline percentage.

Additionally, outcomes are ranked on a scale of 1-5. If the alternative has a likelihood of reducing food insecurity by 0 to 5 percentage points, it is given a rank of 1; 5 to 10 a rank of 2; 10 to 20 a rank of 3; 20 to 30 a rank of 4; and 30 and above a rank of 5. The outcomes are ranked from 1-5 to provide a standardized way of evaluating the effectiveness of different alternatives in reducing food insecurity. The ranking system is designed to be easy to interpret and clearly indicate the relative effectiveness of different alternatives. Using a five-point scale allows for a more nuanced analysis than a simple binary choice (e.g. effective vs. not effective).

The weights given to the scores reflect their importance in addressing the problem statement. In this case, reducing food insecurity is the primary goal and is therefore given a high weight of 40 percent.

## COST-EFFECTIVENESS

A cost-effectiveness analysis considers costs to program providers as well as projected outcomes with a goal of strengthening More Than Food's consulting services and of informing food pantry leaders' of the financial implications of these interventions. The cost-effectiveness analysis supplements existing research supporting the implementation of the alternative by offering economic clarity around costs which is critical to nonprofit strategic decision-making about resource allocation.

The cost-effectiveness analysis compares relative costs to food insecurity outcomes for each alternative. An “ingredient method” is used to identify all resources or ingredients required to replicate the effectiveness of the intervention (Levin & McEwan, 2001). Costs are calculated based on market prices of ingredients required for each alternative and are supported by interviews with pantry organizations and author assumptions. Costs are then divided by the reduction of food insecurity which is a measurement taken by subtracting the percentage of those experiencing food insecurity *because of* the alternative from the traditional model baseline percentage.

The final cost-effectiveness metric quantitatively represents the cost per percentage point reduction in food insecurity per person. The analysis ranks outcomes on a scale of 1-5 based on their capacity to more strongly reduce food insecurity. If the alternative is projected to cost between \$0 and \$15 for each percentage point reduction in food insecurity, it is given a rank of 5; \$15 to \$30 a rank of 4; \$30 to \$35 a rank of 3; \$35 to \$45 a rank of 2; \$45 and above a rank of 1. Cost-effectiveness is given a weight of 30 percent in the outcomes analysis.

The rationale for the 1-5 ranking system is to provide a standardized and objective way of comparing the cost-effectiveness of different interventions to reduce food insecurity. By assigning a numerical score to each intervention, More Than Food Consulting and pantry organizations can easily compare the cost-effectiveness of different interventions and make informed decisions about which interventions to prioritize. Using predefined cost ranges for each ranking helps further standardize the system and ensure consistency in decision-making. The higher the rank, the more cost-effective the intervention, making it more likely to be prioritized for implementation.

The program's size, cost, and potential outcomes are all based on one-year evaluations of each alternative. Extending a cost-effectiveness analysis over a span of three to ten years would enhance its accuracy by making it easier to demonstrate long-term trends. However, the analysis could become less predictable and weaker the further the analysis is carried out.

## ADMINISTRATIVE FEASIBILITY

Administrative feasibility is a qualitative criterion to assess the practicality and ease of implementing the proposed alternative for a food pantry. Administrative feasibility takes into account organizational resources, capacity, funding, technology, and other internal processes necessary for the successful implementation and management of each alternative. Administrative feasibility will help More Than Food Consulting evaluate how viable an alternative is within the constraints of food pantry organizations. This criterion is measured on a scale of

low (1), low-medium (2), medium (3), medium-high (4), or high (5). This criterion is given a weight of 20 percent in the final outcomes analysis.

## SPILOVER EFFECTS

While food insecurity outcomes are most directly relevant to the problem statement, each alternative has the capacity to impact other positive outcomes, including social determinants of health, financial well-being, and self-efficacy. For this analysis, spillover effects are considered quantitatively as ripple effects in the life of a pantry guest interacting with any given alternative or intervention. This criterion offers a helpful way to think about the long-term sustained change of each alternative. Spillover effects are discussed specifically for each intervention and weighed on a scale of low (1), medium (2), or high (3). Because the rationale for spillover effects relies on exogenous variables, divergent sources, and author assumptions, this criterion is weighted the lowest in the outcomes analysis - 10 percent.

## ALTERNATIVES

Five alternatives are selected for More Than Food Consulting's consideration. Extensive conversations with MTFC, pantry organizations, and best practices from the literature inform the selection of alternatives. An overview of each alternative and an analysis of the criteria is outlined below.

### ALTERNATIVE 1: STATUS QUO/TRADITIONAL PANTRY MODEL - JUST FOOD

Maintaining the status quo is considered the baseline for comparing all other alternatives. In the world of policy analysis, the status quo is often referred to as "business as usual" or "allowing present trends to continue without intervention" (Bardach & Patashnik, 2015). For traditional food pantries, the status quo would involve *just* serving food to guests, likely via pre-packaged or standard bags of groceries.

From an economic perspective, it is possible that market forces can mitigate policy problems like food insecurity over time. An economic argument can be made that without policy or programmatic intervention, food insecurity will dissipate if individuals act in their best interests and independently seek employment, improved diet-quality, financial well-being, and self-sufficiency. It is also possible that food insecurity could decrease if government policies like SNAP or WIC changed outside of pantry interventions. The traditional pantry model is not likely to be recommended since the status quo has largely informed the problem of food insecurity as it currently exists. As is explored in the background section, it's evident that it takes more than food to solve hunger. At a minimum, it's valuable to embed evaluation within traditional food pantry models to assess current trends and future food security outcomes.

### **Effectiveness: 0 (1)**

Baseline food insecurity data is drawn from Sanderson et al.'s 2020 *Outcome Evaluation of Food Pantries Implementing the More than Food Framework* because of its relevance to More Than Food Consulting, LLC, the relatively high sample size of the study (N=484), and the rigor with which the study is conducted. At baseline, they found 70.2 percent of pantry guests classified as food insecure (Sanderson et al., 2020). For simplification of calculation, the analysis assumes a program size of 500 pantry guests. All other alternatives are evaluated for effectiveness based on food insecurity reduction from 70.2. Since there is no reduction at baseline, effectiveness at status quo is 0.

### **Cost: \$222.52 (1)**

A cost-effectiveness analysis cannot be determined for the status quo alternative because the analysis assumes no reduction of food insecurity levels for traditional food pantry models as a baseline. However, a stand alone cost is determined by assuming the ingredients required to operate a traditional food pantry model, including shelving, cold storage, and volunteers (see Appendix A for cost assumptions). Costs for each alternative are based on a one-year implementation. Under the assumption of a program size of 500 pantry guests, the analysis finds that a status quo pantry costs \$222.52 per person.

### **Administrative Feasibility: High (5)**

Because a traditional food pantry model is assumed to be the status quo, this alternative is given a score of high administrative feasibility.

### **Spillover Effects: Low (1)**

Since the problem statement is situated within the status quo, this alternative is given a score of low for spillover effects.

	<b>Effectiveness (FI Reduction) (40%)</b>	<b>Cost Effectiveness (30%)</b>	<b>Administrative Feasibility (20%)</b>	<b>Spillover Effects (10%)</b>	<b>Overall Score</b>
<b>Alternative 1: Status Quo</b>	1 0	1 *\$222.52	5 High	1 Low	<b>1.8</b>

\*Since there is no reduction of food insecurity levels at baseline, a cost-effectiveness analysis cannot be determined for the status quo alternative; this number represents the baseline cost.

## **ALTERNATIVE 2: CLIENT CHOICE**

Client choice is a food pantry model that allows pantry guests to select their own food instead of receiving a pre-packaged or standard bag of groceries. This way guests do not have to take items they may already have or cannot eat because of health or personal preferences. A client choice model feels more like a market or grocery store.

### ***Effectiveness: 9.2 (2)***

While the literature reveals that behavioral interventions like client choice can alter food choices, improve diet quality, and reduce leftover, unused food (*Pruden, 2020; Wilson 2016*), little research exists measuring food insecurity rates over time due to choice interventions. Analyzing the effectiveness of client choice relies on a 2012 study that investigates customer shopping behavior with store food inventory data. The study finds a positive association between fruit and vegetable variety and the probability that customer purchase fruits and vegetables (*Martin et al., 2012*). This analysis considers the variety of the corner stores explored in the 2012 study to be a comparable proxy for client choice pantries. As such, demographics of corner store customers are used to estimate food insecurity outcomes given a client choice intervention. Since 61 percent of corner store shoppers experienced food insecurity, client choice is likely to reduce food insecurity by 9.2 percentage points (a reduction from the 70.2 percent baseline). Given the extensive assumptions by which it is calculated, this number should be taken with caution .

### ***Cost-Effectiveness: \$29.96 (4)***

Costs for client choice models are derived from market prices of ingredients required for a food pantry to transition away from the status quo. Ingredients are borrowed from the Houston Food Bank's Client Choice Handbook which offers a comprehensive list and description of equipment and space needed for a "supermarket" model, including shelving, cold storage, carts to move food, and a checkout table, as well as staff and volunteer capacity (*Houston Food Bank, 2022*). (see Appendix A for cost assumptions and Appendix B for client choice ingredient methodology). Assuming a pantry can continue to serve its baseline 500 guests, the analysis finds a cost of \$266.42 per person. Dividing the cost by the 9.2 percentage point reduction in food insecurity finds that a one percentage point reduction in food insecurity would cost a pantry \$28.96 per person. In other words, each dollar spent would result in a .03 percentage point reduction in food insecurity.

### **Administrative Feasibility: Medium-High (4)**

Transitioning from a traditional pantry model with prepackaged food to a client choice model involves buy-in from organization board, staff, and volunteers to shift the layout and day-to-day processes. A pantry will need to prepare its staff and volunteers for the transition, which can occur as a phased-in process or an immediate change. Changes take time for any organization to implement. Transitioning to client choice is typically the most difficult for volunteers. It may require additional space, however, this alternative likely uses similar resources to traditional food pantry models and is therefore given an administrative feasibility of medium-high.

### **Spillover Effects: Medium (2)**

As the evidence review outlines, client choice is situated in the idea that behavioral interventions can alter food choices and improve diet quality. Choice models have been shown to reduce leftover, unused food items and are associated with healthier food choices (Pruden, 2020; Wilson, 2016). Additional benefits of a client choice alternative include

- Improved diet quality of the end user
- Limited food waste
- Upholds guests' dignity
- Reduces time spent pre-packaging food items

Little research shows sustained self-efficacy or financial well-being over time from choice models. Given these advantages and uncertainties of client choice outcomes, this alternative is ranked medium for the spillover effects criterion.

	<b>Effectiveness (FI Reduction) (40%)</b>	<b>Cost Effectiveness (30%)</b>	<b>Administrative Feasibility (20%)</b>	<b>Spillover Effects (10%)</b>	<b>Overall Score</b>
<b>Alternative 2: Client Choice</b>	<b>2</b> 9.2	<b>4</b> \$28.96	<b>4</b> Medium-High	<b>2</b> Medium	<b>3</b>

## **ALTERNATIVE 3: WARM REFERRALS**

Warm referrals are introductions or recommendations to pantry guests from pantry staff and volunteers, ideally, someone they know and trust. Warm referrals go beyond the traditional provision of food. Referrals might occur through on-site enrollment for programs and community services or comprehensive wrap-around services in which pantry staff and volunteers are trained to provide individualized support, connections, and follow-up.

### ***Effectiveness: 5.2 (2)***

The effectiveness analysis relies on a 2022 study exploring referrals to SNAP specialists from trusted clinicians which led to 17 percent of participants enrolling in SNAP (Carpenter et al., 2022). This is significant because SNAP has been proven to reduce the likelihood of being food insecure by roughly 30 percent (Ratcliffe et al., 2011). Given the positive results of these studies, a similar effect is used to estimate outcomes of warm referrals at food pantries.

If 17 percent of 500 pantry guests experience food insecurity at a rate of 70.2 percent (based on finding from the Sanderson et al., 2020 study referenced in the evidence review and the effective criteria discussion for the status quo alternative), a 5.2 percentage point reduction in food insecurity is projected (based on a 30 percent likelihood reduction) (see Appendix C for calculations).

### ***Cost-Effectiveness: \$15.35***

Costs for warm referral interventions are derived from market prices of ingredients required to successfully connect pantry guests to community resources including informational materials like bulletin boards, educational materials, training, and staff and volunteer time (see Appendix A for cost assumptions). Given a 5.2 percentage point reduction in food insecurity due to the alternative, this analysis finds a cost of \$79.86 per person under the premise that 500 guests are referred under ideal conditions. Dividing the cost by the 5.2 percentage point reduction in food insecurity would cost the pantry \$15.35 per person. In other words, each dollar spent would result in a 0.06 percentage point reduction in food insecurity.

### ***Administrative Feasibility: Medium (3)***

Implementing warm referrals would involve one to two pantry staff or volunteers setting up a table, bulletin board, or another process by which to interact with pantry guests. In addition, they would need to undergo a training process to learn about appropriate resources and community services that would best support guests. This alternative is likely a low-lift, low-cost option for pantries and can be implemented immediately or over time as more resources are available. However, warm referrals are rooted in relationships, trust, and staff familiarity with community

connections which may be challenging and difficult to implement immediately. Therefore, this alternative is given a medium score for administrative feasibility.

### ***Spillover Effects: Medium (2)***

Warm referrals have the potential to increase pantry guests' awareness of community resources, build trust, and improve outcomes based on the success of referral connections to resources like SNAP, WIC, healthcare, childcare, or education support. Long-term, sustained change over time is contingent on whether or not the referral is "closed" or successfully followed up on. Given this uncertainty, this alternative is given a score of medium (3) for spillover effects.

	<b>Effectiveness (FI Reduction) (40%)</b>	<b>Cost Effectiveness (30%)</b>	<b>Administrative Feasibility (20%)</b>	<b>Spillover Effects (10%)</b>	<b>Overall Score</b>
<b>Alternative 3:</b> Warm Referrals	2  5.2	4  \$15.35	3  Medium	2  Medium	<b>2.8</b>

## **ALTERNATIVE 4 & 5: COACHING**

One-to-one coaching is an intervention similar to case management where pantry staff and volunteers help guests set goals and navigate complex systems like social services or legal help. Coaches are responsible for assessing individual needs, developing action plans, coordinating services, and evaluating progress toward goals. Coaching aims to ensure that pantry guests receive personalized services that lead to improved outcomes.

Coaching is an in-depth, intensive, effective way to address why individuals and families might be struggling with food insecurity. Coaches work closely with guests over several months to set goals, build relationships and connections, and provide follow-up support. Typically, a small number of guests from a food pantry are recruited to participate in a program where they will meet individually with trained coaches to set goals and enroll in additional community resources. Coaches can help build long-term food security, self-sufficiency, and financial well-being, so participants won't need to continue visiting the food pantry over time.

There are significant barriers to individuals choosing whether to participate in a coaching program including time constraints, transportation, readiness, and other opportunity costs. Short-term and long-term coaching options are examined to mitigate some of these barriers,

particularly time constraints. Short-term coaching is evaluated over a 4-month period and long-term coaching over 9-months.

#### **Effectiveness: 27.6 (4); 44.9 (5)**

Research shows positive results of coaching with trauma-informed motivational interviewing at the pantry level in tandem with a welcoming culture and healthy client choice (*Sanderson et al.*, 2020). While it is not possible to isolate coaching independently of other variables with the available research, the *Sanderson et al.* 2020 study is used to illustrate the effectiveness of coaching. Findings show coaching participants experience food insecurity rates of 42.6 percent after 4-months and 25.3 percent after 9-months, significantly decreased from the baseline of 70.2 (*Sanderson et al.*, 2020). The analysis employs these findings to compare short- and long-term coaching.

#### **Cost-Effectiveness: \$35.75 (2); \$49.44 (1)**

Costs for coaching are derived from market prices of ingredients needed to implement a coaching program as described by five coaching programs interviewed for this analysis including staff and volunteer time, additional occupancy, and incentives for program participation (K. Parks, personal communication, 2022). To simplify calculations, 20 participants are used to project outcomes, based on interviews with pantry programs and recommendations by More Than Food Consulting. Short-term coaching is estimated to cost \$986.67 per person and long-term coaching is estimated at \$2,220. These costs are divided by effectiveness outcomes, amounting to \$35.75 and \$49.44 for each percentage point reduction in food insecurity with short- and long-term coaching respectively. Both short-and long-term coaching would result in a 0.02 percentage point reduction in food insecurity for every dollar spent.

#### **Administrative Feasibility: Low-Medium (2)**

This alternative requires the most resources for implementation and would be a phased-in program with high costs. Organizations must be ready to adopt an entirely new program, hire one or more coaches, undergo rigorous training, recruit participants, execute the actual coaching process, survey participants, and evaluate the program ongoing. Because of the potential challenges to implementing a coaching program, perhaps most notably organizational buy-in, this alternative is given a score of low-medium for administrative feasibility.

The reason coaching is not given a score of low for administrative feasibility is because More Than Food Consulting is uniquely positioned as a leading expert in this field and can offer pantries intensive support for implementation.

### *Spillover Effects: High (3)*

Coaching positively impacts participants' lives long-term beyond food security (Sanderson et al., 2020). Positive outcomes include diet quality, self-sufficiency, self-efficacy, financial well-being, and perceived social support. Because participants work with a coach who is trained in motivational interviewing, participants are more likely to be able to cope with challenges and changes in their lives long after the intervention is completed. Working with a coach toward one or two goals gives participants skills to help them set future goals, without the support of a coach. Accordingly, coaching is given a score of high (3) for spillover effects.

	<b>Effectiveness (FI Reduction) (40%)</b>	<b>Cost Effectiveness (30%)</b>	<b>Administrative Feasibility (20%)</b>	<b>Spillover Effects (10%)</b>	<b>Overall Score</b>
<b>Alternative 4:</b> Short-Term Coaching	<b>4</b>  27.6	<b>2</b>  \$35.75	<b>2</b>  Low-Medium	<b>3</b>  High	<b>2.9</b>
<b>Alternative 5:</b> Long-Term Coaching	<b>5</b>  44.9	<b>1</b>  \$49.44	<b>2</b>  Low-Medium	<b>3</b>  High	<b>3</b>

## SUMMARY OF PROJECTED OUTCOMES

The outcomes matrix below provides a visual comparison of projected outcomes of the alternatives across the array of selected criteria and their given scores.

	<b>Effectiveness (FI Reduction)</b> (40%)	<b>Cost Effectiveness</b> (30%)	<b>Administrative Feasibility</b> (20%)	<b>Spillover Effects</b> (10%)	<b>Overall Score</b>
<b>Alternative 1:</b> Status Quo	<b>1</b> 0	<b>1</b> *\$222.52	<b>5</b> High	1 Low	<b>1.8</b>
	<b>2</b> 9.2	<b>4</b> \$28.96	<b>4</b> Medium-High	<b>2</b> Medium	
<b>Alternative 2:</b> Client Choice	<b>2</b> 5.2	<b>4</b> \$15.35	<b>3</b> Medium	<b>2</b> Medium	<b>3</b>
	<b>4</b> 27.6	<b>2</b> \$35.75	<b>2</b> Low-Medium	<b>3</b> High	
<b>Alternative 3:</b> Warm Referrals	<b>2</b> 5.2	<b>4</b> \$15.35	<b>3</b> Medium	<b>2</b> Medium	<b>2.8</b>
<b>Alternative 4:</b> Short-Term Coaching	<b>4</b> 27.6	<b>2</b> \$35.75	<b>2</b> Low-Medium	<b>3</b> High	<b>2.9</b>
<b>Alternative 5:</b> Long-Term <b>Coaching</b>	<b>5</b> 44.9	<b>1</b> \$49.44	<b>2</b> Low-Medium	<b>3</b> High	<b>3</b>

\*Since there is no reduction of food insecurity levels at baseline, a cost-effectiveness analysis cannot be determined for the status quo alternative; this number represents the baseline cost.

## RECOMMENDATION

Alternative 5: Long-Term Coaching is recommended as the best course of action. Long-Term Coaching has the clearest strengths in effectively reducing food insecurity as well as positive spillover effects like diet-quality and self-efficacy. All alternatives that differ from status quo rank marginally close in a final weighted score and should also be considered as supplemental interventions or stand-alone options for organizations with more constrained budgets.

## IMPLEMENTATION

More Than Food Consulting advises food pantries on implementing evidence-based best practices. To that end, the following implementation plan outlines stakeholders involved in executing a coaching program, steps to move forward with this recommendation, potential challenges, and considerations for mitigating risks from a consultation perspective.

A variety of stakeholders are involved with implementing organizational changes. Implementing one-on-one coaching at food pantries should include: More Than Food Consulting, LLC, food pantry coaches, program participants, board members, staff, and volunteers, and funders if applicable.

Figure 3 illustrates an implementation timeline for coaching programs and a description of each step that follows.

**Figure 3: Implementation Timeline**



***Organizational Buy-In:*** Pantries need to have organization-wide buy-in across staff, volunteers, and board members. Buy-in creates alignment, improves engagement, fosters communication and collaboration, supports systems change, and ultimately leads to best results for program participants. More Than Food Consulting can help advise and inspire stakeholders toward acceptance and commitment to the idea that food security goes beyond food.

***Hiring a Coach:*** The organization must allocate resources to hire a coach, ideally full-time, who can support a caseload of 10 to 20 clients. This analysis estimates an average of a \$37,000 annual salary for coaches, which would vary regionally and year-over-year. Salary and total program costs could be supplemented with support from an external funder.

*Training:* More Than Food Consulting is a leading expert in coaching with trauma-informed motivational interviewing and offers a series of trainings to orient new coaches. This allows for uniformity of program implementation which is important for consistent data collection across organizations.

*Recruiting Participants:* Food pantries should focus on recruiting participants for coaching who are already accessing food or other resources. Secondarily, they should target recruitment in areas of high need for people who are coaching "ready" and able to commit to 4 to 9 months of program involvement. [Lebanon County Christian Ministries in Pennsylvania](#) does a good job explaining their program and utilizes a Microsoft form for recruitment intake.

*Start Coaching:* Coaching involves 4 to 9 months (or longer), depending on organization capacity, in which coaches meet regularly with clients to set goals, support skill building, and community connections to achieve goals. Goals include job security or better pay, housing security, continuing education, or mental health support among others.

*Data collection and ongoing technical support:* More Than Food Consulting can support coaches with trainings for using standardized survey instruments for clients and technical assistance to best collect data with clients every 3 months.

*Evaluation:* Evaluation is an important part of any program. Program evaluation helps assess whether the program is achieving its goals and the extent to which it positively impacts participants. This information can inform coaches, funders, and other stakeholders to integrate best practices in program continuation, expansion, or modification. More Than Food Consulting and partnering pantries should work together to identify strengths and weaknesses of coaching programs and enhance accountability. More Than Food can facilitate program learning through peer support opportunities and sharing what is working and what is not.

Coaching programs can span six months to one year. Participants "graduate" from the coaching program once they have made substantial progress with one to three goals identified by participants and coaches. More Than Food Consulting supports coaches through peer support meetings to share better practices and insights. Continual data collection and program evaluation will allow MTFC to measure changes over time to support the existing research that shows positive impacts on food security, self-efficacy, perceived social support, financial well-being, and self-sufficiency.

## Potential Barriers and Risks to Implementing Coaching

Implementing coaching is radically different from status quo food pantry models that solely distribute food. It requires organizations to fully adopt the understanding that it takes more than food to end hunger. As [Brian Greene](#), CEO of the Houston Food Bank succinctly puts it: "food insecurity isn't about food, it's about income." Philosophically, this can be a big adjustment from traditional food distribution models. Even once organizations understand the problem of isolating food insecurity as its own issue, shifting organization strategy can be risky. Pounds of food going out of the door and number of people served are easier metrics to measure and more easily translatable to donors and board members than smaller (albeit more impactful) changes over time. More Than Food Consulting should prepare organizations for these risks and help communicate impact and outcomes of coaching to stakeholders. Organizational buy-in may be the most critical piece of implementing coaching. Without it, there may be resistance, apathy, or even subversion.

Recruitment is another challenge to implementing a coaching program. This may be due to barriers to participation like time constraints, transportation, readiness, and other opportunity costs. Coaches should focus on identifying participants who are "ready" for coaching. Messaging around the program structure and goals of the program can set participants up for success. In this way, coaches can emphasize the benefits of the program over the time commitment. Programs should be flexible about time commitments regardless, since committing to either a short or long-term program may be a big lift for individuals, especially for those already experiencing financial constraints and other life stressors. Programs may also find success in recruiting by offering incentives to participation such as shopping at the pantry after coaching sessions or gift cards upon survey completion.

Building relationships with local community services helps ensure program participants are connected with the resources that best meet their needs and help them achieve their goals. Community services often have their finger on the pulse of the community, and fostering these relationships can also help coaches better understand their participants' experiences and needs.

## **CONCLUSION**

Food insecurity is a persistent problem in the United States, with an estimated 10.2 percent of Americans lacking reliable access to enough safe and nutritious food. While a large charitable network exists to address this issue, traditional food distribution models have not been effective in addressing the root causes of food insecurity. This report provides a policy analysis of five interventions to food insecurity at the pantry level and recommends implementing long-term coaching with motivational interviewing. Existing literature shows that coaching with motivational interviewing has positive effects on individuals' food security, diet quality, self-sufficiency, financial well-being, and perceived social support. While this is the most resource-intensive policy alternative, it has the potential to address the underlying factors contributing to food insecurity and provide clients with the necessary tools and resources to achieve sustainable improvements in their overall well-being. However, implementing coaching requires a philosophical shift from traditional food distribution models, and organizational buy-in may be a critical challenge to overcome. Ultimately, coaching with motivational interviewing provides a comprehensive approach that goes beyond food and addresses the underlying causes of food insecurity.

## REFERENCES

- 53 Million People Visited Food Banks | Feeding America. (2021). Feedingamerica.org.  
<https://www.feedingamerica.org/about-us/press-room/53-million-received-help-2021>
- A Six-Week Cooking Program of Plant-Based Recipes Improves Food Security, Body Weight, and Food Purchases for Food Pantry Clients. (2013). Journal of Hunger & Environmental Nutrition.  
<https://www.tandfonline.com/doi/abs/10.1080/19320248.2012.758066>
- An, R., Wang, J., Liu, J., Shen, J., Loehmer, E., & McCaffrey, J. (2019). A systematic review of food pantry-based interventions in the USA. *Public Health Nutrition*, 22(09), 1704–1716.  
<https://doi.org/10.1017/s1368980019000144>
- Arnold, J., & Second Harvest Gleaners Food Bank of West Michigan, Inc. (2004). *Charity Food Programs that can End Hunger in America*. Brewer Communications, Inc.
- Bardach, E., & Patashnik, E. M. (2015). *A Practical Guide for Policy Analysis*. CQ Press.
- Berkowitz, S. A., Basu, S., Meigs, J. B., & Seligman, H. K. (2017). Food Insecurity and Health Care Expenditures in the United States, 2011–2013. *Health Services Research*, 53(3), 1600–1620.  
<https://doi.org/10.1111/1475-6773.12730>
- Carlson, S., & Neuberger, Z. (2017). *WIC Works: Addressing the Nutrition and Health Needs of Low-Income Families for 40 Years*. <https://www.cbpp.org/sites/default/files/atoms/files/5-4-15fa.pdf>
- Carpenter, A., Kuchera, A. M., & Krall, J. S. (2022). Connecting Families at Risk for Food Insecurity With Nutrition Assistance Through a Clinical-Community Direct Referral Model. *Journal of Nutrition Education and Behavior*, 54(2), 181–185. <https://doi.org/10.1016/j.jneb.2021.09.014>
- Carroll, K., & Schichtl, R. (2022). Perceived barriers to client-choice conversion among Arkansas food pantries. *Journal of Agriculture, Food Systems, and Community Development*, 1–12.  
<https://doi.org/10.5304/jafscd.2022.114.012>
- Caspi, C. E., Davey, C., Barsness, C. B., Gordon, N., Bohen, L., Canterbury, M., Peterson, H., & Pratt, R. (2021). Needs and Preferences Among Food Pantry Clients. *Preventing Chronic Disease*, 18.  
<https://doi.org/10.5888/pcd18.200531>
- Client-choice food pantry model reduces food waste and improves food distribution*. (2013, March 14). MSU Extension.  
[https://www.canr.msu.edu/news/client\\_choice\\_food\\_pantry\\_model\\_food\\_waste\\_improves\\_food\\_distribution](https://www.canr.msu.edu/news/client_choice_food_pantry_model_food_waste_improves_food_distribution)
- Comprehensive Diabetes Self-Management Support From Food Banks: A Randomized Controlled Trial. (2018). American Journal of Public Health. <https://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2018.304528>
- Costanzo, C. (2023, February 8). *Food Insecurity Isn't About Food; Here's What To Do About It - Food Bank News*. Food Bank News. <https://foodbanknews.org/food-insecurity-isnt-about-food-heres-what-to-do-about-it/>
- Creating Patient-centered Team-based Primary Care IN PRIMARY CARE RESEARCH*. (n.d.).  
<https://www.ahrq.gov/sites/default/files/wysiwyg/ncepqr/tools/PCMH/creating-patient-centered-team-based-primary-care-white-paper.pdf>
- Eicher-Miller, H. A. (2020). A review of the food security, diet and health outcomes of food pantry clients and the potential for their improvement through food pantry interventions in the United States. *Physiology & Behavior*, 220, 112871. <https://doi.org/10.1016/j.physbeh.2020.112871>

- FB, H. (2022, June 14). *Agency resources and Partner Resources - Houston Food Bank*. Houston Food Bank. <https://www.houstonfoodbank.org/about-us/ouragencies/partnerresources/>
- Feeding America's History | Feeding America*. (2023). Feedingamerica.org. <https://www.feedingamerica.org/about-us/our-history>
- Fisher, A. (2020, November 23). *How One Organization Can Shorten Food Bank Lines Across the United States*. The MIT Press Reader. <https://thereader.mitpress.mit.edu/food-charity-feeding-america/>
- Flynn, M. (2013). *A Six-Week Cooking Program of Plant-Based Recipes Improves Food Security, Body Weight, and Food Purchases for Food Pantry Clients*. Journal of Hunger & Environmental Nutrition. <https://www.tandfonline.com/doi/abs/10.1080/19320248.2012.758066>
- FreshStart – Kelly Center for Hunger Relief*. (2022). Kellyfresh.org. <https://kellyfresh.org/freshstart/>
- Gelli, A., Al-Shaiba, N., & Espejo, F. (2009). The Costs and Cost-Efficiency of Providing Food through Schools in Areas of High Food Insecurity. *Food and Nutrition Bulletin*, 30(1), 68–76. <https://doi.org/10.1177/156482650903000107>
- Goldberg, J., Greenstone Winestone, J., Fauth, R., Colón, M., & Mingo, M. V. (2018). Getting to the Warm Hand-Off: A Study of Home Visitor Referral Activities. *Maternal and Child Health Journal*, 22(S1), 22–32. <https://doi.org/10.1007/s10995-018-2529-7>
- Handforth, B., Hennink, M., & Schwartz, M. B. (2013). A Qualitative Study of Nutrition-Based Initiatives at Selected Food Banks in the Feeding America Network. *Journal of the Academy of Nutrition and Dietetics*, 113(3), 411–415. <https://doi.org/10.1016/j.jand.2012.11.001>
- Hardison-Moody, A., Bowen, S., Dara, B. J., Sheldon, M., Jones, L., & Leach, B. (2015). Incorporating Nutrition Education Classes into Food Pantry Settings: Lessons Learned in Design and Implementation. *Journal of Extension*, 53(6). <https://eric.ed.gov/?id=EJ1085490>
- Hunger. (2021). *Hunger Facts | Move For Hunger*. Moveforhunger.org; Move For Hunger. <https://moveforhunger.org/hunger-facts>
- Hunger in America | Feeding America*. (2021). Feedingamerica.org. <https://www.feedingamerica.org/hunger-in-america>
- Impacts of Hunger on Health | Iowa Food Bank Association*. (n.d.). [Www.iowafba.org](https://www.iowafba.org/impacts-hunger-health). Retrieved December 12, 2022, from <https://www.iowafba.org/impacts-hunger-health>
- Lakhani, N., & Aliya Uteuova. (2021, April 28). *The hunger industry: does charity put a Band-Aid on American inequality?* The Guardian; The Guardian. <https://www.theguardian.com/environment/2021/apr/28/our-unequal-earth-food-insecurity-aid-corporate>
- Levin, H. M., & McEwan, P. J. (2001). *Cost-effectiveness analysis : methods and applications*. Sage Publications.
- Martin S., K., Redelfs, A., Wu, R., Bogner, O., & Whigham, L. (2019). *Offering More Than Food: Outcomes and Lessons Learned from a Fresh Start food pantry in Texas*. Journal of Hunger & Environmental Nutrition. [https://www.tandfonline.com/doi/full/10.1080/19320248.2018.1512925?casa\\_token=g7pl60ky26cAAAAA%3AGAFVWoHMZd6ymjKkFCBwFpmxF7z5bcEDzoaFCJtI22IRiKRLlhK-1-UNTd9HuRKKfs3UM12mWdHo](https://www.tandfonline.com/doi/full/10.1080/19320248.2018.1512925?casa_token=g7pl60ky26cAAAAA%3AGAFVWoHMZd6ymjKkFCBwFpmxF7z5bcEDzoaFCJtI22IRiKRLlhK-1-UNTd9HuRKKfs3UM12mWdHo)
- Martin, K. (2022, August). *Morgan Stanley Foundation Child & Family Choice Initiative Year 1 Evaluation Brief, August 2022*. More than Food Consulting, LLC. [https://static1.squarespace.com/static/5626862ce4b0b39e06352d65/t/6373d78af4f9177c12d97d87/1668536203194/Morgan+Stanley+Grant\\_Year+One+Evaluation+Brief\\_FINAL.pdf](https://static1.squarespace.com/static/5626862ce4b0b39e06352d65/t/6373d78af4f9177c12d97d87/1668536203194/Morgan+Stanley+Grant_Year+One+Evaluation+Brief_FINAL.pdf)

- Martin, K. S. (2021). *Reinventing food banks and pantries : new tools to end hunger*. Island Press.
- Martin, K. S., Colantonio, A. G., Picho, K., & Boyle, K. E. (2016). Self-efficacy is associated with increased food security in novel food pantry program. *SSM - Population Health*, 2, 62–67.  
<https://doi.org/10.1016/j.ssmph.2016.01.005>
- Martin, K. S., Havens, E., Boyle, K. E., Matthews, G., Schilling, E. A., Harel, O., & Ferris, A. M. (2012). If you stock it, will they buy it? Healthy food availability and customer purchasing behaviour within corner stores in Hartford, CT, USA. *Public Health Nutrition*, 15(10), 1973–1978. <https://doi.org/10.1017/s1368980011003387>
- McDowell, I. (2022a, December 21). *Backpack Beginnings offers free market to families with children in need*. YES! Weekly.  
[https://www.yesweekly.com/news/local/backpack-beginnings-offers-free-market-to-families-with-children-in-need/article\\_9fc6eaae-814e-11ed-b179-cb838261f3bf.html](https://www.yesweekly.com/news/local/backpack-beginnings-offers-free-market-to-families-with-children-in-need/article_9fc6eaae-814e-11ed-b179-cb838261f3bf.html)
- McDowell, I. (2022b, December 21). *Backpack Beginnings offers free market to families with children in need*. YES! Weekly.  
[https://www.yesweekly.com/news/local/backpack-beginnings-offers-free-market-to-families-with-children-in-need/article\\_9fc6eaae-814e-11ed-b179-cb838261f3bf.html](https://www.yesweekly.com/news/local/backpack-beginnings-offers-free-market-to-families-with-children-in-need/article_9fc6eaae-814e-11ed-b179-cb838261f3bf.html)
- More Than Food Consulting, LLC. (2019). More than Food Consulting, LLC. <https://www.ittakesmorethanfood.org/>
- NANCY McLAUGHLIN nancy.mclaughlin@greensboro.com. (2022, October 14). Want to type without your hands? New microchip implant could help with that. Greensboro News and Record.  
[https://greensboro.com/news/local/a-greensboro-pantry-is-set-up-to-look-like-a-real-grocery-store-todays-special/article\\_d2e6bf12-4b58-11ed-901a-938b308d27f9.html](https://greensboro.com/news/local/a-greensboro-pantry-is-set-up-to-look-like-a-real-grocery-store-todays-special/article_d2e6bf12-4b58-11ed-901a-938b308d27f9.html)
- Our story – European Food Banks Federation – FEBA. (2018). Eurofoodbank.org.  
<https://www.eurofoodbank.org/our-story/>
- Parks, K. (2022). Interviews with pantry leaders [Personal communication].
- Patel, E., Solomon, K., Saleem, H., Saloner, B., Pugh, T., Hulsey, E., & Leontsini, E. (2022). Implementation of buprenorphine initiation and warm handoff protocols in emergency departments: A qualitative study of Pennsylvania hospitals. *Journal of Substance Abuse Treatment*, 136, 108658.  
<https://doi.org/10.1016/j.jsat.2021.108658>
- Pruden, B., Poirier, L., Gunen, B., Park, R., Hinman, S., Daniel, L., Gu, Y., Katragadda, N., Weiss, J., & Gittelsohn, J. (2020). Client Choice Distribution Model Is Associated with Less Leftover Food in Urban Food Pantries. *Current Developments in Nutrition*, 4(Supplement\_2), 266–266. [https://doi.org/10.1093/cdn/nzaa043\\_117](https://doi.org/10.1093/cdn/nzaa043_117)
- Ratcliffe, C., McKernan, S.-M., & Zhang, S. (2011). How Much Does the Supplemental Nutrition Assistance Program Reduce Food Insecurity? *American Journal of Agricultural Economics*, 93(4), 1082–1098.  
<https://doi.org/10.1093/ajae/aar026>
- Results of a Pilot Intervention in Food Shelves to Improve Healthy Eating and Cooking Skills Among Adults Experiencing Food Insecurity. (2017). *Journal of Hunger & Environmental Nutrition*.  
[https://www.tandfonline.com/doi/full/10.1080/19320248.2015.1095146?casa\\_token=ApFFN3RVSa4AAAAA%3ASOhhDLuWHS566p6cMnserc7Af9eOuQCONyMJPWj6V6ZK6TDsHbd1mu2JHJJvLyRxWLdwhkOnQ2Gw](https://www.tandfonline.com/doi/full/10.1080/19320248.2015.1095146?casa_token=ApFFN3RVSa4AAAAA%3ASOhhDLuWHS566p6cMnserc7Af9eOuQCONyMJPWj6V6ZK6TDsHbd1mu2JHJJvLyRxWLdwhkOnQ2Gw)
- Sanderson, J., Martin S., K., Colantonio G., A., & Wu, R. (2020). An Outcome Evaluation of Food Pantries Implementing the More than Food Framework. *Journal of Hunger & Environmental Nutrition*.  
<https://www.tandfonline.com/doi/full/10.1080/19320248.2020.1748782>

- Seligman, H. K., Lyles, C., Marshall, M. B., Prendergast, K., Smith, M. C., Headings, A., Bradshaw, G., Rosenmoss, S., & Waxman, E. (2015). A Pilot Food Bank Intervention Featuring Diabetes-Appropriate Food Improved Glycemic Control Among Clients In Three States. *Health Affairs*, 34(11), 1956–1963. <https://doi.org/10.1377/hlthaff.2015.0641>
- Singal, A. G., Higgins, P. D. R., & Waljee, A. K. (2014). A Primer on Effectiveness and Efficacy Trials. *Clinical and Translational Gastroenterology*, 5(1), e45. <https://doi.org/10.1038/ctg.2013.13>
- SNAP Work Requirements | Food and Nutrition Service.* (2019a). Usda.gov. <https://www.fns.usda.gov/snap/work-requirements>
- SNAP Work Requirements | Food and Nutrition Service.* (2019b). Usda.gov. <https://www.fns.usda.gov/snap/work-requirements>
- Taylor, R. M., & Minkovitz, C. S. (2021). Warm Handoffs for Improving Client Receipt of Services: A Systematic Review. *Maternal and Child Health Journal*, 25(4), 528–541. <https://doi.org/10.1007/s10995-020-03057-4>
- Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Penguin Books.
- The Healthcare Costs of Food Insecurity Exploring Geographic Variation by State and County.* (2019). [https://www.feedingamerica.org/sites/default/files/2019-07/The%20Healthcare%20Costs%20of%20Food%20Insecurity%20Brief\\_July%202019.pdf](https://www.feedingamerica.org/sites/default/files/2019-07/The%20Healthcare%20Costs%20of%20Food%20Insecurity%20Brief_July%202019.pdf)
- The National Council on Aging.* (2023). Ncoa.org. <https://www.ncoa.org/article/4-surprising-financial-benefits-of-the-supplemental-nutrition-assistance-program>
- USDA ERS - Key Statistics & Graphics.* (2017). Usda.gov. <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/key-statistics-graphics/>
- USDA ERS - Survey Tools.* (2017). Usda.gov. <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/survey-tools/>
- Wilson, N. L. W., Just, D. R., Swigert, J., & Wansink, B. (2016). Food pantry selection solutions: a randomized controlled trial in client-choice food pantries to nudge clients to targeted foods. *Journal of Public Health*, fdw043. <https://doi.org/10.1093/pubmed/fdw043>
- Yao, P., Ozier, A., Brasseur, K., Robins, S., Adams, C., & Bachar, D. (2013). Food Pantry Nutrition Education about Whole Grains and Self-Efficacy. *Family and Consumer Sciences Research Journal*, 41(4), 426–437. <https://doi.org/10.1111/fcsr.12028>

## APPENDIX

### APPENDIX A: All Cost Assumptions

Alternative 1: Status Quo		
Ingredient	Cost	Assumption
Shelving	\$1,866.00	<a href="#">6 shelves</a>
Cold Storage	\$13,392.00	<a href="#">4 freezers, 4 refrigerators</a>
Staff/volunteer	\$0.00	Assume volunteer led
Occupancy	\$96,000.00	<a href="#">\$8 per sq ft for 1000 sq footage space</a>
Total costs per year	\$111,258.00	
Total costs per person	\$222.52	Intervention serves 500 people*

Alternative 2: Client Choice		
Ingredient	Cost	Assumption
Shelving	\$1,866.00	<a href="#">6 shelves</a>
Cold Storage	\$13,392.00	<a href="#">4 freezers, 4 refrigerators</a>
Carts to move food	\$1,520.00	<a href="#">10 carts</a>
Check out table	\$230.00	<a href="#">2 tables</a>
Explanation/promotional material	\$1,704.00	<a href="#">12 cartons (1 per month), assuming \$100/month for printing</a>
Staff/volunteer	\$18,500.00	<a href="#">1 staff</a>
Occupancy	\$96,000.00	<a href="#">\$8 per sq ft for 1000 sq footage space</a>
Total costs per year	\$133,212.00	
Total costs per person	\$266.42	Intervention serves 500 people*

### Alternative 3: Warm Referrals

<b>Ingredient</b>	<b>Cost</b>	<b>Assumption</b>
Staff/volunteer time	\$37,000.00	<a href="#">1 staff</a>
Bulletin board	\$525.00	<a href="#">3 bulletin boards</a>
Materials	\$1,704.00	<a href="#">12 cartons (1 per month), assuming \$100/month for printing</a>
Knowledge/training	\$700.00	Author assumption
Total costs per year	\$39,929.00	
Total costs per person	\$79.86	Intervention serves 500 people

### Alternative 4 & 5: Coaching

<b>Ingredient</b>	<b>Cost</b>	<b>Assumption</b>
Staff/volunteer time	\$37,000.00	<a href="#">1 staff</a>
Training for coaches	\$2,000.00	MTFC estimated fees
Incentives	\$1,000.00	\$25 gift cards/survey (4 surveys) per coaching interviews
Additional occupancy	\$19,200.00	<a href="#">\$8 per sq ft for 200 sq footage office</a>
Total costs per year	\$59,200.00	
Total costs per person (9 months)	\$2,220.00	
Total costs per person (4 months)	\$986.67	
Total costs per person (1 year)	\$2,960.00	Intervention serves 20 people

\*Results for baseline outcomes come from a study with a sample size of 484. This analysis rounds to 500 participants for calculations for alternatives 1, 2, and 3 (Sanderson et al., 2020). For simplifying calculations for alternatives 4 and 5, 10 participants are used to project outcomes, based on interviews with pantry programs.

Disclaimer: Food costs are not included as an ingredient for any alternative (although incentives for coaching may include food). Many pantries source food at no cost from regional food banks while others rely on public donations.

## APPENDIX B: Client Choice Ingredient Methodology

Houston Food Bank published a [Client Choice Handbook in 2019](#) which outlines a variety of choice models for pantry considerations including “supermarket”, “table”, “inventory list”, and “window”. While each option has advantages in terms of “best fit” for a pantry, the analysis uses ingredients of the “supermarket” model because it is the “most client friendly” and most closely simulates a grocery store experience. The description below is adapted from the handbook.

Supermarket Client Choice Description	Equipment	Space
Food is set up by food groups inside the pantry.  Guests select their food as they walk through the pantry.  Staff and volunteers may help guide guests through their choices or check them out when they have finished shopping.	Shelving  Refrigerators and freezers with clear glass doors to view products  Carts to move food  Check-out table	A space large enough to display food on shelves and enough room for guests to walk through safely.

## APPENDIX C: Effectiveness Calculations for Warm Referrals

Data:

1. Referrals to SNAP specialists from trusted clinicians led to 17 percent of participants enrolling in SNAP (Carpenter et al.)
2. SNAP has been proven to successfully reduce the likelihood of being food insecure by 30 percent.

Simplifying Assumption:

1. Results for baseline outcomes come from a study with a sample size of 484. This analysis rounds up to 500 participants for these calculations (Sanderson et al., 2020).
2. Assume 70.2 percent of 500 people served food insecure based on baseline data.
3. Assume successful referrals for 17 percent and food insecurity reduction of 30 percent.

Calculations:

- a. Estimated individuals food insecure from successful warm referrals  
 $.702 \times 500 = 351 \text{ individuals}$   
 $.17 \times 500 = 85 \text{ individuals}$   
 $85 \times .30 = 25.5 \text{ (rounded up to 26 individuals)}$   
 $351 - 26 = 325 \text{ individuals successfully referred}$
- b. Estimated percentage point reduction in food insecurity  
 $351/500 (70.2\%) - 325/500 (65\%) = 5.2$

**BEYOND FOOD: Addressing Food Insecurity  
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