

“IT’S OUR RESPONSIBILITY:” A QUALITATIVE ANALYSIS OF EXECUTIVE  
DIRECTORS’ PERSPECTIVES ON PROVIDING FRESH PRODUCE THROUGH THE  
FEEDING AMERICA NETWORK

By

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“May God break my heart so completely that the whole world falls in” – Mother Teresa

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Abstract:

Introduction- Food insecurity is a prevalent problem in the United States and is associated with increased risk of diet-related chronic diseases and poor nutritional status (Coleman-Jensen, Rabbitt, et al., 2016; Seligman, Laraia, & Kushel, 2010). Food banks, which distribute food to food insecure individuals, have the opportunity to address health but experience barriers attaining donor support or cold storage capacity and often do not distribute nutritionally balanced food (Akobundu, Cohen, Laus, Schulte, & Sousloff, 2004; Campbell, Ross, & Webb, 2013; Ross, Campbell, & Webb, 2013).

Methods- This research is a secondary analysis of interviews with executive directors (EDs) of Feeding America food banks that have a low availability of fresh produce grown in their region. EDs were selected for maximum variation in their current resources and distribution of Foods to Encourage, a measurement of healthful foods. The pilot-tested, semi-structured question path addressed leadership attitudes on health promotion as well as barriers and opportunities to providing fresh produce in their food banks. Interviews were coded and common themes analyzed by food bank distribution of Foods to Encourage.

Results- Low availability food banks experienced problems distributing healthful foods due to budget restrictions, regional variation in fresh produce growth, and partner agency cold storage capacity. Opportunities for future programs or current programs primarily included distribution or planning strategies. Partnerships with healthcare organizations to attain grant funding or to distribute healthful foods at a healthcare facility were cited particularly often. Leadership attitudes varied by current healthful food distribution, with high distributors exhibiting a passion and feeling responsibility for promoting health.

Conclusions- In order to be resilient against the crisis of poor health in the food insecure community, food banks must exhibit good planning practices through training low distributing food banks and partnering with the healthcare community. A major component of intervention development will be in improving ED attitudes towards promoting health in order to direct nutrition policy change on the food bank level.

## TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION.....	1
Significance of Problem and Need for Current Research.....	1
Problem Statement.....	3
Aims and Hypotheses.....	4
Theoretical Framework.....	5
Definitions of Terms.....	7
II. REVIEW OF LITERATURE.....	9
Food Insecurity in the United States.....	9
Link between Fresh Fruits and Vegetables and Chronic Disease.....	12
Coping Strategies and Food Procurement in the Food Insecure Population.....	12
“Healthy Food” Deserts: Accessibility of Healthful Foods.....	12
Restricting Healthy Choices Based on Cost.....	13
Emergency Food Utilization.....	15
Nutritional Deficiencies and Chronic Health Problems in the Food Insecure Population.....	17
Feeding America.....	19
History.....	19
Statistics from Feeding America.....	20
Nutritional Quality of California Feeding America Food Banks.....	23
Metrics Used for Evaluation of Feeding America Food Banks.....	23
Potential for Change in the Feeding America System.....	25
Basis for Current Study: Past Research on Nutrition in the Emergency Food System.....	25
Clients’ Desire for Healthful Foods.....	25
Lack of Nutritional Quality in the Current Emergency Food System.....	27
Research on Barriers to and Perceptions of Providing Fresh Fruits and Vegetables.....	28
Local Agricultural Resources and Food Bank Provision.....	31
Public Health Significance and Summary.....	32

Chapter	Page
III. METHODOLOGY .....	33
Sampling .....	33
Study .....	35
Analysis of Data.....	36
IV. RESULTS .....	38
Participant Characteristics .....	38
Barriers in Low Availability Food Banks.....	38
Differences in Barriers Cited between High and Low Distribution	
Food Banks .....	41
Opportunities.....	44
Differences in Opportunities Cited between High and	
Low Distribution Food Banks.....	48
Innovative Programs .....	50
Sourcing .....	50
Handling and Operations .....	51
Outbound and Agencies.....	52
Distribution .....	52
Planning .....	56
Leadership Attitudes .....	59
The Purpose of Food Banking- Addressing Hunger or Health.....	59
Chronic Disease Concern.....	63
Fruits and Vegetables and Health .....	65
Fruit and Vegetable Goals .....	66
V. DISCUSSION .....	69
Barriers.....	70
Opportunities.....	72
Innovative Programs .....	76
Leadership Attitudes .....	79
Implications for Policymakers and Feeding America.....	80
Implications for Future Research.....	81
Scope and Limitations.....	83
Conclusions.....	84
REFERENCES .....	85
APPENDICES .....	90

## LIST OF TABLES

Table 1: Food security status categories (Coleman-Jensen, Gregory, et al., 2016).....	10
Table 2: Ranking of high income countries based on the percent population utilizing the emergency food system.....	11
Table 3: Commonly Cited Barriers .....	40
Table 4: Commonly Cited Opportunities .....	47

## LIST OF FIGURES

Figure 1: Community Disaster Resilience Model (Arbon, 2014).....	6
Figure 2: Food insecurity risk by household type (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2016) .....	11
Figure 3 Different coping behaviors utilized by Feeding America clients (Weinfield et al., 2014)	14
Figure 4: Number of months Feeding America clients utilize food banks each year (Feeding America, 2011).....	15
Figure 5: Types of partner agencies for Feeding America food banks (Weinfield et al., 2014).....	20
Figure 6: Types of food provision in partner agencies.....	21
Figure 7: Self-reported health status of Feeding America clients .....	22
Figure 8: Logic model for the impact of the emergency food system and chronic disease .....	32
Figure 9: Sampling methodology for the subset of data used in this study .....	34
Figure 10: Educational Strategies from Feeding America.....	75



## CHAPTER I

### INTRODUCTION

#### **Significance of Problem and Need for Current Research**

As of 2015, 12.7% of households in the U.S. are food insecure, which translates to 42.2 million people (Coleman-Jensen, Rabbitt, et al., 2016). Food insecurity is associated with a variety of negative health outcomes, including both childhood and adult obesity, known as the hunger-obesity paradox (Kaur, Lamb, & Ogden, 2015; Pan, Sherry, Njai, & Blanck, 2012; Scheier, 2005). Obesity is, in turn, a primary risk factor for morbidity and mortality (World Health Organization, 2015). Food insecurity itself, independent of obesity, has been found to be a risk factor for several chronic diseases, especially diabetes and hypertension (Seligman et al., 2010). Since food insecurity is prevalent in the U.S. and is associated with a variety of health outcomes, it is a public health concern.

Several factors influence food insecurity and associated health outcomes. Food insecurity is more prevalent among minorities and low-income households (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2015). This indicates a health disparity in food insecurity, likely based on income and access characteristics. For example, many minorities and low-income individuals live in food deserts, where they have less access to supermarkets and other outlets that could provide healthy, quality, and affordable food (Larson, Story, & Nelson, 2009). Even if there is

neighborhood access to healthy foods, especially fresh produce, these products may be higher-priced, creating a cost barrier for food insecure households to attain nutritious foods (Dittus, Hillers, & Beerman, 1995). High fruit and vegetable intakes are associated with a decreased risk of some cancers, hypertension, and heart disease, among other chronic diseases (Van Duyn & Pivonka, 2000). There is a prime opportunity for the emergency food system to provide healthful foods since food insecurity is associated with both lower neighborhood access and ability to purchase healthful foods, especially fruits and vegetables (FV).

There are both governmental and non-governmental efforts to alleviate food insecurity. Government programs include, but are not limited to, the Supplemental Nutrition Assistance Program (SNAP- formerly food stamps) and the Special Supplemental Program for Women Infants and Children (WIC), that provide vouchers for groceries (Weinfield et al., 2014). In contrast, the non-governmental emergency food system encompasses the pathways by which food is distributed directly to hungry people, including food banks, food pantries, and feeding programs. Feeding America is a loose conglomerate of over 200 food banks across the nation and offers a prime opportunity for study of the non-governmental food system as a whole (Weinfield et al., 2014). Of Feeding America clients, 5.7% have incomes above the eligibility requirements for any federal food assistance program, and 17.6% have incomes above the SNAP eligibility guidelines (Weinfield et al., 2014). This makes the Feeding America system especially important for this group of clients, since it may be their only option.

Current efforts by the emergency food system to supply nutritious food have been disjointed at best. There is no national nutritional quality profiling system for food banks (Shimada, Ross, Campbell, & Webb, 2013). Instead, Feeding America member food banks report Pounds of food per Person In Poverty (PPIP), which evaluates poundage without accounting for nutrition (Sengul Orgut et al., 2016). Some studies have attempted to evaluate individual food pantries or food banks based on the nutritional quality of their distributed foods. In general, these have found a lack in nutritional quality of emergency food, especially in fresh produce and dairy

(Akobundu et al., 2004; Gany et al., 2013; Hoisington, Manore, & Raab, 2011; Rochester, Nanney, & Story, 2011). Therefore, there is a need to develop metrics to assess the quality of foods distributed. Improvement of the metric could facilitate change in emergency food quality, thereby potentially improving health outcomes of food pantry clients.

### **Problem Statement**

Aside from a lack of standardized metrics, barriers to food banks carrying and distributing healthful foods include a lack of storage in partner agencies and a lack of support from food donors (Campbell, Ross, & Webb, 2013). However, more research is needed to pinpoint barriers to fruit and vegetable distribution and elucidate opportunities to overcome them. Feeding America provides a prime opportunity for research and policy change in this area, due to its widespread network of food banks across the nation (Weinfield et al., 2014). The current study proposes to identify potential areas for improvement in distribution of fresh produce by Feeding America food banks through qualitative interviews with executive directors (EDs) of 9 food banks.

Much of the past research on Feeding America food banks that has found success in fresh produce distribution has been done in California, where the Farm to Family program encourages donations from local fresh produce growers. California and Florida produce the most quantity and variety of fresh vegetables and California alone accounts for 57% of the nation's production value for fruit production (Minor & Bond; *Table A-18: Value of production for selected fruit and tree nuts in the United States, by State, 2015, 2016*). This makes the results likely not applicable to other states, where less fresh produce is grown and other options must be used to encourage fresh produce distribution (Shimada et al., 2013).

The current study controlled for local availability of fresh produce by choosing interviews with food bank EDs from the same level of local availability from a larger study for secondary data analysis. The larger study used maximum variation sampling with a purposeful

sampling method. It separated food banks into 27 categories based on local availability of fresh produce (low, medium, high), food bank resources (low, medium, high), and food bank percent produce distributed (low, medium, high), then randomly selected food bank EDs to interview from each category (one per category). This secondary analysis limited its sample to food banks with low local availability of fresh produce in order to control for availability. This allowed controllable barriers and opportunities to be studied, rather than looking at local agriculture as a barrier that is able to be manipulated. In addition, choosing interviews from this extreme allowed for better contrasting between the results of this study and the results of previous studies on high access food banks. Therefore, this study will bring a unique perspective to the literature, since it examined food banks with low availability. This study examined opportunities for improvement in low availability environments in order to identify strategies to increase fresh produce distribution.

### **Aims and Hypotheses**

This study has three aims:

1. In food banks with low local availability of fresh FV, define EDs' perceived barriers to providing fresh FV in Feeding America food banks, localizing these barriers to upstream or downstream processes.
2. In these same food banks, define EDs' ideas for opportunities to provide fresh produce in Feeding America food banks.
3. Describe EDs' perceptions of the role of food banks in promoting health through providing fresh FV.

This study accomplished these aims through qualitative interviews with EDs of Feeding America food banks. Interview questions focused on describing the exact location of barriers and opportunities along the domains of fruit and vegetable distribution, shown in Appendix A. The secondary aim, describing perceptions of the role of food banks in promoting health, was also assessed via qualitative interview questions.

Previous literature indicated that major barriers in fruit and vegetable distribution in food banks include a lack of refrigerated storage capacity in food banks and partner agencies, poor donor attitudes, low fresh produce availability through donations, and a metric that does not measure nutritional quality (Campbell, Hudson, Webb, & Crawford, 2011; Campbell et al., 2013; Handforth, Hennink, & Schwartz, 2013; Ross et al., 2013). Food bank leadership has been found to be overwhelmingly supportive of nutrition in past research (Campbell et al., 2013). Ultimately, this study aims to contribute to the literature by describing opportunities for change in the Feeding America food bank system to result in increased distribution of fresh produce.

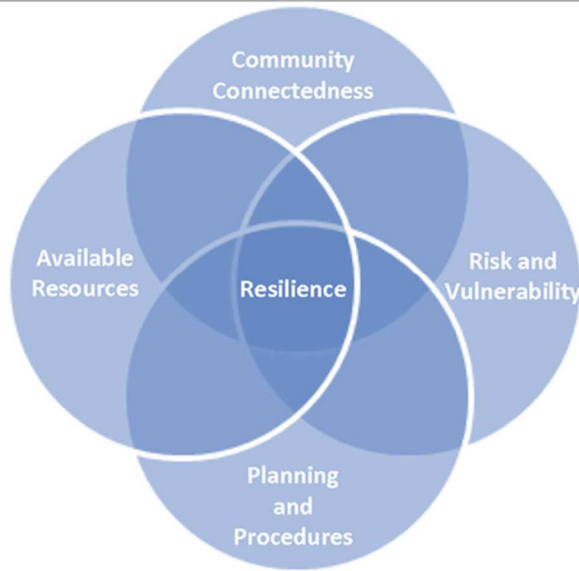
### **Theoretical Framework**

This study examined individuals who are decision makers for communities as the EDs of Feeding America food banks. The EDs are vitally important because their perceptions of barriers, opportunities, and the role of food banks in affecting chronic disease impact whole communities. In this way, this study assessed how individuals' beliefs influence the community of food insecure individuals.

The community disaster resilience model (CDRM), as described by Paul Arbon, resonates with this research. Figure 1 illustrates the model.

### Community Disaster Resilience Model

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**Figure 1: Community Disaster Resilience Model (Arbon, 2014)**

The model was developed to describe how communities deal with disaster or emergency situations; it seeks to explain why some communities bounce back quickly while others do not (Arbon, 2014). However, the components of this model of resilience can also be used to describe the circumstances that are necessary for the emergency food system to promote health in clients through providing nutritious foods. The emergency food system can be seen as a chronic emergency situation, and the CDRM applies not just in bouncing back from a one-time event, but in continuous process evaluation and response to the changing environment.

This model helped inform the development of the preliminary coding sheet, which in turn informed the development of the finalized coding sheet, included in Appendix C. The four components that relate to community resilience, according to Arbon, are risk and vulnerability, community connectedness, available resources, and planning and procedures (2014). Risk and vulnerability of the population have been established through the literature on nutrition-related chronic disease among the food insecure population. Community connectedness is a potential barrier or opportunity. One example of how community connectedness could be used as an opportunity would be in the development of a community garden. Without community

investment of time and effort into the garden it would not produce; however, with community investment in a garden at the food bank, it could be used to provide fresh produce for the community. Available resources are partially controlled for in this study through choosing only food banks with low local availability of fresh produce growers. However, other available resources could include grant money, commodity foods, and refrigerated storage space, all of which could be barriers or opportunities. Finally, understanding planning and procedures will be a component of barriers and opportunities. For example, measuring food bank success exclusively by poundage rather than including a nutritional quality component is a procedure which is potentially a barrier to providing fresh produce. Through a combination of the CDRM, past literature, and knowledge about the domains of fruit and vegetable distribution, the coding scheme was developed. This coding scheme was approved and expanded on both by an RD at Feeding America (Christine Rivera) and Dr. Hilary Seligman, lead scientist for Feeding America, before being applied to interviews.

### **Definitions of Terms**

Domains of Fruit and Vegetable Distribution- Illustrated in Appendix A. Chain from Feeding America/local sourcing to handling and operations to outbound and agencies to distribution to clients, all influenced by planning. This was used in interviews as an illustration to help clarify questions and guide EDs in finding potential locations for barriers and opportunities.

Emergency Food System- The group of organizations that provide food directly to hungry people, including Feeding America, food banks, and food pantries, among other donors and contributors.

Farm to Family - A California program which links growers of fresh produce to food banks in order to encourage donors to either donate or cheaply sell unsellable produce to food banks (Ross et al., 2013).

Food Bank- Organizations that receive, store, and distribute emergency food to other agencies which distribute it directly to food insecure clients (Remley, Kaiser, & Osso, 2013).

Food Deserts- An area without physical or monetary access to healthy food (Reisig & Hobbiss, 2000).

Food Insecurity- “the inability to acquire or consume an adequate quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so” (Radimer, 2002).

Food Pantry- Charitable organizations that distribute unprepared foods directly to food insecure clients (Remley et al., 2013).

Hard 7- Apples, broccoli, carrots, cauliflower, potatoes, onions, and oranges. These are the hearty varieties of produce typically stocked by food banks due to ease of storage and distribution (Ross et al., 2013).

Hunger-Obesity Paradox- When hunger/food insecurity and obesity exist in the same person or group of people (Scheier, 2005).



## CHAPTER II

### REVIEW OF LITERATURE

#### **Food Insecurity in the United States**

The United States (U.S.) is marked by notably high rates of food insecurity. Overall, 12.7% of households in the U.S. were food insecure at some point during 2015, including 5% of the U.S. population who experienced very low food security, a more severe form of food insecurity in which individuals in the household experience reduced intake of food (Coleman-Jensen, Rabbitt, et al., 2016). Food insecurity is measured using an 18-question survey for households with children which is reduced to the first 10 questions for households without children; households are considered food insecure if they report three or more food insecure conditions; very low food security is described as reporting eight or more food insecure conditions for households with children and six or more for households without children (Coleman-Jensen, Rabbitt, et al., 2016). Measures of food insecurity are typically based on uncertainty about a household's next meal. The four categories of food security are illustrated in Table 1 (Coleman-Jensen, Gregory, & Rabbitt, 2016).

Food Security Status			
Food Secure		Food Insecure	
High Food Security	Marginal Food Security	Low Food Security	Very Low Food Security
No problems attaining food	Some worries about attaining enough food but no/few changes in actual intake	Reduced quality but not quantity of food	Reduced quality and quantity of food

Table 1: Food security status categories (Coleman-Jensen, Gregory, et al., 2016)

Food insecurity is becoming a more chronic condition, and data on the amount of money needed by food insecure families to prevent hunger indicates that families typically need money to purchase 5.5 more meals per week to be food secure (Gundersen, Engelhard, America, Satoh, & Waxman, 2013). These meals could be distributed in any way throughout a typical week, but are often inconsistent, resulting in cyclical food restriction. The average food insecure household is in a state of food insecurity for 7 months of the typical year (Coleman-Jensen et al., 2015; Gundersen et al., 2013). While food insecurity is not consistent, it is becoming a chronic condition where many households spend more than half of the year food insecure.

In a between-countries comparison of high-income countries, the U.S. ranks fourth in the world in the percent of the population utilizing food banks (Gentilini, 2013). This means that the U.S. ranks among the Eastern European countries of Lithuania, Slovakia, Slovenia, and Romania (Table 2) (Gentilini, 2013). This data indicates that the state of U.S. food security and emergency food resource usage are among the worst in developed, high-income countries.

High Income Countries Using Emergency Food Resources		
Rank	Country	Percent of Population
1	Lithuania	14.90%
2	Slovakia	13.10%
3	Slovenia	12.50%
4	United States	11.90%
5	Romania	11.10%

Table 2: Ranking of high income countries based on the percent population utilizing the emergency food system

Rates of food insecurity vary widely within the U.S., indicating socioeconomic and health disparities. The major demographic disparities in food insecurity rates include income, race, and children in the household. In comparison with the overall national rate of 12.7%, households with incomes <185% of the federal poverty guidelines, households whose head identifies as non-Hispanic black or Hispanic, and households with children experience higher rates of food insecurity (Figure 2) (Coleman-Jensen, Rabbitt, et al., 2016). Moreover, a national survey found that households that were Latino, low-income, low-educational attainment, or lacked health insurance were more likely to be food insecure than white households (Seligman et al., 2010).

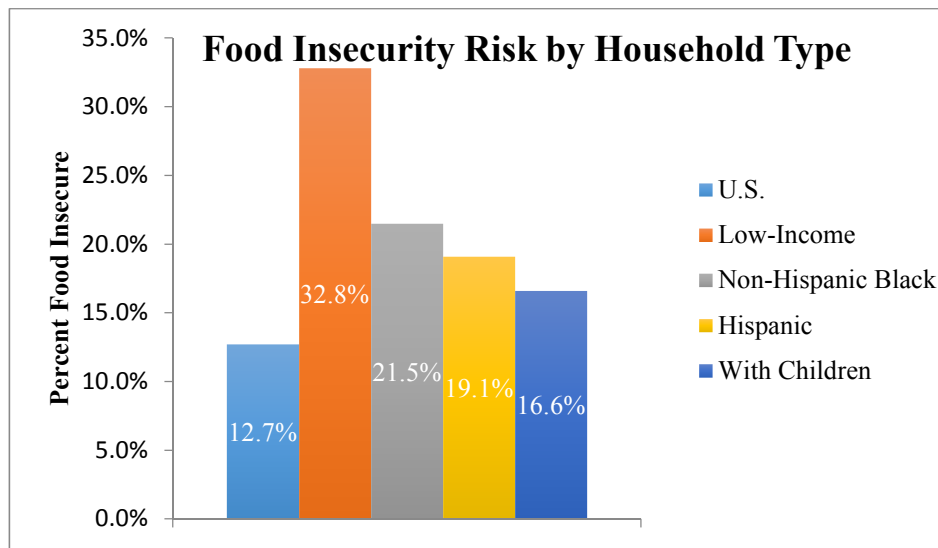


Figure 2: Food insecurity risk by household type (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2016)

Based on the empirical evidence, food insecurity is a significant and substantial problem in the U.S. It is characterized by major disparities based on race and income, reflective of the health disparities also seen in the U.S. This establishes food insecure clients as a high risk population; methods being used to alleviate food insecurity are an important topic in public health, public policy, and nutrition literature.

### **Link between Fresh Fruits and Vegetables and Chronic Disease**

Fresh FV have been extensively studied in relation both to food insecurity and chronic disease. There is substantial evidence that consumption of FV can help in the prevention of cancer (Van Duyn & Pivonka, 2000). This is important since cancer is the second leading cause of death in the U.S. as of 2014 (Murphy, Kochanek, Xu, & Arias, 2015). In addition, research suggests that FV can help prevent coronary heart disease and stroke, ranked first and fifth in the leading causes of death (Murphy et al., 2015; Van Duyn & Pivonka, 2000). Fruit and vegetable consumption is also possibly related to prevention of chronic obstructive pulmonary disease and hypertension (Van Duyn & Pivonka, 2000). Yellow-orange vegetables and fruits, along with citrus fruits, dark green, leafy, and cruciferous vegetables, are among the most important in reducing disease risk for each of the diseases discussed above (Van Duyn & Pivonka, 2000).

While some types of fresh produce with major effects in disease prevention are easily stored, others, such as dark green, leafy vegetables, may present problems for the emergency food system (Ross et al., 2013). There is a dearth of evidence about ways to overcome the physical barriers to carrying FV in food banks, such as refrigerated storage space.

### **Coping Strategies and Food Procurement in the Food Insecure Population**

#### **“Healthy Food” Deserts: Accessibility of Healthful Foods**

It is well established that low-income areas may not have the same amount of access to food stores. For example, a review of 31 articles on food deserts found that low income

neighborhoods had about 30% less supermarkets than the highest income areas (Walker, Keane, & Burke, 2010). The problem lies in that food deserts result in a lack of access not simply to food in general, but to healthy staple foods such as fresh produce, dairy, and meats. A review of the literature on food deserts in 2009 discussed the relationship between access to healthy foods and health. Four of five studies looking at this relationship found a greater intake or home availability of healthful foods when neighborhood stores carried these foods (Larson et al., 2009). Disparities in access to food are apparent, with black neighborhoods having 52% less supermarkets than white neighborhoods (Walker et al., 2010).

Access to healthful foods is directly related to chronic disease and obesity. People living in areas with no supermarkets had the highest (32-40%) levels of obesity when compared with neighborhoods of other income levels (Larson et al., 2009). Areas without supermarkets also had the highest rates of diet-related chronic diseases (Walker et al., 2010).

In addition, low-income areas without access to supermarkets typically have higher prices and lower quality of foods, especially fresh produce (Walker et al., 2010). This would create even more barriers to accessing healthy foods for low-income individuals. In a qualitative study of perceptions of low-income people on barriers to eating FV, focus groups in North Carolina found that the most frequently cited barrier to consumption of fresh produce was cost; the people interviewed preferred fresh produce but felt they could only afford canned or frozen (Haynes-Maslow, Parsons, Wheeler, & Leone, 2013). In addition, focus groups also found major themes of a lack of quality and variety of fresh produce in the low-income communities (Haynes-Maslow et al., 2013). There is an overall lack of access to cheap, quality produce in areas where food insecure people tend to live, indicating the need to stock these items in food pantries.

### **Restricting Healthy Choices Based on Cost**

Low-income and low-education groups have more barriers to fruit and vegetable consumption than other groups, likely because of the relatively high cost of FV (Dittus et al., 1995). This is one possible explanation for some of the health disparities between income groups. Some coping strategies to reduce costs are to buy in bulk, eat the same foods all week, and use low cost ingredients (Hoisington et al., 2011).

Feeding America performs a study on hunger in the U.S. every four years, the most recent of which is titled *Hunger in America 2014*. The Feeding America network consists of 202 food banks across the U.S. and in Puerto Rico (Weinfield et al., 2014). This network distributes 3.3 billion pounds of food per year (Weinfield et al., 2014). The Hunger in America report looked at some of the common coping strategies to reduce food costs among clients of the Feeding America system (Figure 3). This was done via a survey of 60,122 clients of partner agencies. Of these, the most common coping strategy to reduce costs was to purchase inexpensive, unhealthy foods, with 78.7% of clients participating in this behavior (Weinfield et al., 2014). This includes purchasing high fat, high sodium, and high simple carbohydrate foods which may promote chronic diseases such as heart disease, obesity, and diabetes (Weinfield et al., 2014).

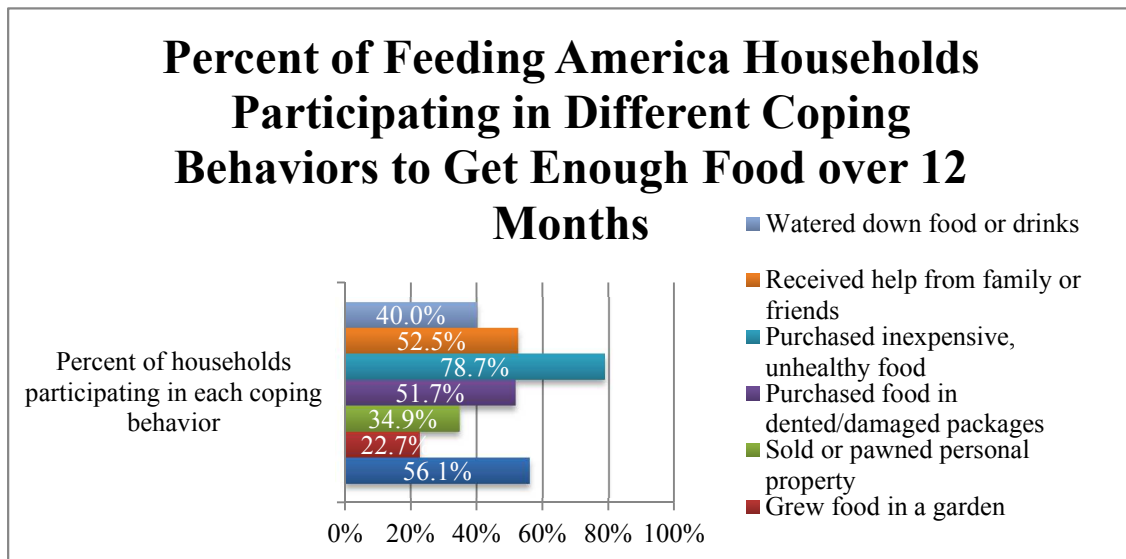


Figure 3 Different coping behaviors utilized by Feeding America clients (Weinfield et al., 2014)

Other coping strategies to reduce costs were eating food past the expiration date, purchasing dented or damaged packages of food, watering down food or drinks, and growing food in a garden (Figure 3) (Weinfield et al., 2014). Not all of these strategies are necessarily unhealthy, and growing fresh produce in a garden may actually promote health. However, some coping strategies, such as eating expired foods or watering down foods, can have negative health outcomes either through foodborne disease or through reducing calorie and nutrient intakes.

The ebb and flow of financial resources in a food insecure household can result in cyclical food restriction (Kirkpatrick, 2012). Cyclical food restriction, and especially a high intake of high-calorie foods when there is food, may be associated with overweight and obesity (Dietz, 1995). Based on this and other information, restricting healthy foods based on cost is a common coping strategy among food insecure populations. Ways to incorporate healthy foods into the diets of food insecure individuals despite their high costs should be a target of future research, including the current study.

### Emergency Food Utilization



Figure 4: Number of months Feeding America clients utilize food banks each year (Feeding America, 2011)

Utilization of the emergency food system has changed over recent years. In a discussion paper entitled *Nutrition-Focused Food Banking*, authors addressed the history of food banks in the U.S. and the changes that have occurred. Originally, food banks and the emergency food system focused on emergencies. The idea was to provide food to jobless individuals who fell through the cracks of the welfare system or who were

experiencing a temporary and emergency need for food (Campbell et al., 2015). However, with welfare reform in the 1990s, there was a sharp increase in the utilization of the emergency food system by individuals on a chronic basis (Campbell et al., 2015). The current situation in food banks reflects this shift.

In a subset of data from *Hunger in America 2010*, authors for Feeding America analyzed 61,000 interviews with clients to find the frequency of use of food pantries. This study found that 54% of clients used food pantries 6 months or more in a year (Figure 4) (Feeding America, 2011). This shows that the emergency food system is no longer being used simply for emergencies; it is becoming a chronic survival technique. Among those who used food pantries every month of the year, the average consecutive months for visits to the food pantry was 28.8 (Feeding America, 2011). This study illustrates the anecdotal history by Campbell and colleagues by showing the rates of recurrent and dependent usage of food pantries to supply monthly groceries.

While the *Hunger in America 2010* report provided information on monthly client visits, other researchers found that 63.5% of the clients surveyed obtained food from a food pantry at least once per week (Robaina & Martin, 2013). While this study is limited in applicability due to its unique composition of black (73.9%), low/very-low food security (83.8%), unemployed (69.3%), and low income (74.4% earned  $\leq$ \$1,000/month) participants, it shows an example of how often food pantry clients in some communities may be utilizing services (Robaina & Martin, 2013). Despite the limited applicability of the study by Robaina and Martin, focus groups among a separate population supported the idea that clients use food pantries chronically, with the majority of clients using food pantries once per month to supply about 25% of their monthly food (Verpy, Smith, & Reicks, 2003). This indicates the importance of food pantries, and



therefore the food banks which supply them, in supplying healthy food for food insecure households.

The significance of this increase in chronic dependency on food pantries is best illustrated by Remley, Kaiser, and Osso in their case study of promoting nutrition through choice pantry development:

For food pantries and food banks to successfully shift from a temporary emergency relief model to a model that addresses long-term food insecurity, they must not only distribute food but must also address underlying contributors to food security, such as poor health (2013).

### **Nutritional Deficiencies and Chronic Health Problems in the Food Insecure Population**

Many studies have found a relationship between food insecurity and obesity, often called the “hunger-obesity paradox” (Scheier, 2005). Obesity is a major risk factor for other chronic diseases, including heart disease, stroke, type 2 diabetes mellitus, and some cancers (World Health Organization, 2015). Overweight and obesity were the third leading risk factor causes of death and disability adjusted life years in 2004 among high income countries (World Health Organization, 2015). Low-income populations may have less access to quality, healthful foods at a price they can afford, possibly contributing to the hunger-obesity paradox. In an analysis of BRFSS data from 66,553 people in 12 states, there was a 35.1% obesity rate in food insecure populations and a 25.3% obesity rate in food secure populations (Pan et al., 2012). This indicates a 32% higher adjusted risk of obesity in food insecure populations (Pan et al., 2012). An analysis of NHANES data on children 2-11 years old found a significant association between food insecurity and obesity in 6-11 year old children (Kaur et al., 2015). This data supports the idea of the hunger-obesity paradox, indicating that food insecure populations may be at higher risk of chronic disease. However, not all studies support the hunger-obesity paradox. The same study

discussed above, which looked at food pantry clients in Hartford, Connecticut, found no significant association between food insecurity and overweight or obesity (Robaina & Martin, 2013). The majority of the evidence, however, supports the hunger-obesity paradox in adult populations and in Kirkpatrick's 2012 review, a study found that four of five individuals from food insecure households were overweight or obese, while three of five individuals from food secure households were overweight or obese (Kirkpatrick, 2012). This evidence does not indicate causality. However, it does indicate a health disparity between food secure and food insecure populations.

There are significant differences in chronic disease status between food secure and food insecure groups. One study compared 1,488 people in the lower Mississippi delta region based on food security status and self-reported health status. This study found that people in food insecure households were significantly more likely to report their health status as fair/poor than people in food secure households (Stuff et al., 2004). In addition, people in food insecure households scored significantly lower in self-reported measurements of physical and mental health (Stuff et al., 2004). This study, while specific to the lower Mississippi delta region, indicates a general health disparity between food insecure and food secure households.

Data from the 1999-2004 waves of NHANES on low-income ( $\leq 200\%$  of the federal poverty line) adults found that adults in food insecure households were at a 21% higher risk for hypertension and ~50% higher risk for diabetes than those in food secure households (Seligman et al., 2010). These results remained even after accounting for differences in obesity status, indicating that differences in chronic diseases are not entirely attributable to an increased risk of obesity in food insecure households (Seligman et al., 2010). Food insecurity was also associated with inadequate disease control of diabetes (Seligman et al., 2010). This information on chronic

disease risk indicates that the emergency food system could have a serious impact on chronic disease control by providing appropriate foods.

## **Feeding America**

### **History**

Feeding America, a loose conglomerate of food banks across the U.S., was formed as Second Harvest in the 1960s, when food banking and the emergency food system were emerging (Campbell et al., 2015). After welfare reform in 1996, people who utilized Second Harvest and the emergency food system changed from requiring short-term assistance to requiring chronic assistance in order to meet their monthly needs (Campbell et al., 2015). Today, food banks acquire commodity food from the government, donations from producers, processors, and retailers either through Feeding America or directly to the regional food bank, or cash and grants to purchase food (Campbell et al., 2015). Feeding America acts as a broker for regional food banks, allowing them to order donated foods from the national Feeding America supply via the Choice or Produce Matchmaker systems (Campbell et al., 2015). The Feeding America Choice System relates the amount of pounds a food bank distributes to the percentage of the population in poverty in the food bank's service area; food banks with higher needs and higher distribution get priority (Campbell et al., 2015). The Produce Matchmaker System is specific to fresh produce and was created with the vision of rapidly distributing fresh produce to member food banks.

With the current research being done on the hunger-obesity paradox and particularly the higher rates of chronic disease in the food insecure population, food banks have begun to be more nutrition-focused. In 2013, Feeding America publicized their "Foods to Encourage" (F2E) in order to help guide food banks in the types of food to distribute to promote health (Campbell et al., 2015). The percent of food distributed that is characterized as F2E is often reported back to

Feeding America. In addition, Feeding America launched the healthy food bank hub in order to provide a link between food banking and the public health community (Campbell et al., 2015). Feeding America has experienced many changes since its launch as Second Harvest in the 1960s, not the least of which is the recent increase in interest in providing both adequate calories and adequate nutrition to clients. The overall study of which this thesis is a part aimed at providing Feeding America with more information on ways to promote health by providing fresh produce. This is a reflection of the recent trends in Feeding America’s nutrition focus.

**Statistics from Feeding America**

*The Hunger in America*

2014 study included both an agency and client survey. Of the 202 food banks in the network, 186 participated in the agency survey (92% response rate) and 60,122 clients completed the client survey (Weinfield et al., 2014). The agency survey was administered either online or through a paper or telephone

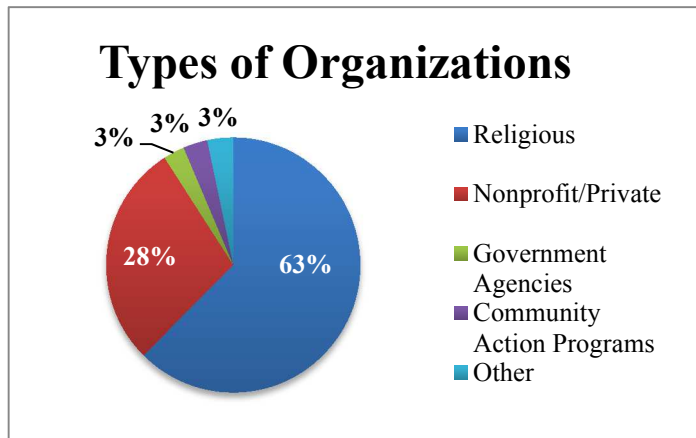


Figure 5: Types of partner agencies for Feeding America food banks (Weinfield et al., 2014)

survey and the client survey was administered among food banks that had completed the agency survey and occurred during clients' visits to partner agencies (Weinfield et al., 2014).

Results from the agency survey analyzed how people were being served by Feeding America as well as some of the challenges faced by partner agencies. It is estimated that Feeding America partner agencies serve 46.5 million

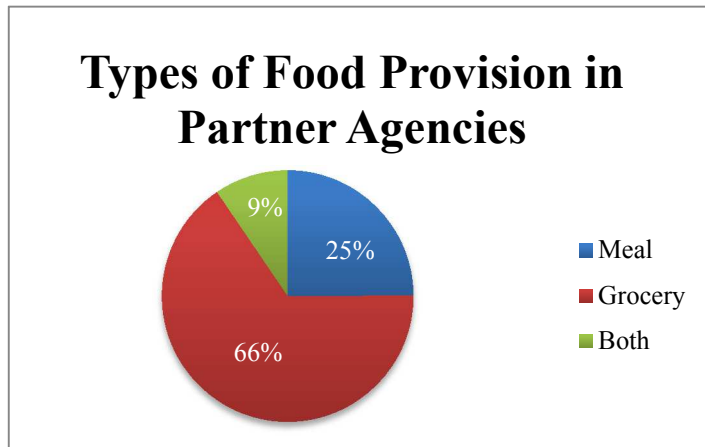


Figure 6: Types of food provision in partner agencies

unique individuals each year (Weinfield et al., 2014). As a comparison, in 2014 SNAP served 46.6 million individuals (Food and Nutrition Service, 2017). Feeding America partners with agencies of many types, including religious organizations, nonprofit private organizations, government agencies, and other programs (Figure 5); partner programs may provide prepared food in a meal setting, in a grocery program, or both (Figure 6) (Weinfield et al., 2014). In these agencies, Feeding America is the source of the majority of pounds distributed (61.8%) overall, but a higher percent of food distributed comes from Feeding America in grocery programs vs. meal programs (Weinfield et al., 2014). This indicates a potential problem in the type of food Feeding America provides since it cannot provide the majority of what is needed for meal preparation. Meal programs typically purchase dairy products, fresh produce, protein foods, and paper goods to supplement supplies from Feeding America (Weinfield et al., 2014). In addition, most programs reported growth in the number of clients and 28% said they had less food than was needed (Weinfield et al., 2014). Overall, the information from Feeding America indicates that it has a wide network of partner agencies which provide different services, including meals and

groceries. However, since meal programs especially had to purchase perishable food, this indicates a possible inadequacy of perishable foods supplied by Feeding America.

The client survey characterized Feeding America clients and their use of emergency food. An important part of the survey was the information on health concerns among clients. In general, 47.4% of clients reported fair/poor health and 52.6% reported good/very

good/excellent health (Figure 7)

(Weinfield et al., 2014). When

looking at the household level for

specific chronic diseases, 57.8% had

a household member with high blood

pressure and 33.2% had a member

with diabetes (Weinfield et al.,

2014). This information indicates a

need for health and nutrition related

policies to help cope with these

health problems among clients.



Figure 7: Self-reported health status of Feeding America clients

The information on coping strategies, such as the finding that the majority of households involved in this survey reported purchasing inexpensive, unhealthy foods to ensure they had enough, are discussed previously under coping strategies (Weinfield et al., 2014). This information indicates the need for nutritious foods to be provided in Feeding America partner agencies, since clients may not be able to buy them for themselves. In addition, the client survey found that 63% of households planned on emergency food as a part of their monthly budget (Weinfield et al., 2014). Emergency food from the Feeding America network is a staple for many food insecure households.

### **Nutritional Quality of California Feeding America Food Banks**

Six Californian food banks' inventory data were analyzed for the years 2007-2010; three of the food banks analyzed had previously participated in a nutrition initiative (Ross et al., 2013). Inventory by weight increased across the years studied for all types of food categories, except snack foods and condiments (Ross et al., 2013). For these 6 California food banks, 51.7% of their inventory was FV by 2010, primarily fresh produce donated from producers (Ross et al., 2013). However, much of the weight from fresh FV came from less nutritionally dense types, such as potatoes and onions, which accounted for almost half of the fresh vegetable weight; oranges, melons, and apples were the most common types of fresh fruit (Ross et al., 2013). Government-donated FV were typically canned (Ross et al., 2013). While this information seems to show that there is a large amount of fresh produce already being distributed by Feeding America food banks, this information could be compromised by the fact that California food banks are part of the Farm to Family program. In addition, the article concludes that the types of fresh produce stocked were limited in variety and quantity, especially based on providing the hard 7, which are more easily stored, available, and heavier for reporting purposes (Ross et al., 2013).

### **Metrics Used for Evaluation of Feeding America Food Banks**

The metrics being used to evaluate the success of Feeding America food banks may be hindering the increased focus on the nutritional quality of emergency food. Currently, there are two distinct measurements conducted by food banks and reported to Feeding America to determine performance of the food bank: Pounds per Person In Poverty (PPIP) and the meal gap (Sengul Orgut et al., 2016). PPIP is the number of pounds shipped to a food bank over the number of people in poverty in that food bank's county; the meal gap is the annual budget shortfall for food in the region divided by the regional cost per meal (Sengul Orgut et al., 2016). These metrics measure whether or not individuals in need are receiving enough food by pound,

but have no way to evaluate the nutritional quality of the food. The potential problem with this is best illustrated in a quote from an interview with a food bank coordinator who said, “A smart but not necessary mission-driven food bank could move a lot of soda and move a lot of pounds” (Handforth et al., 2013). Food banks are being incentivized to move pounds of food, not necessarily nutritionally-dense pounds.

Incentives to move food by the pound may not encourage the provision of the most healthful options. For example, measurement by poundage without taking into account nutritional quality can make it look like a food bank that distributes a large volume of nutritionally dense but light FV, such as leafy greens, is actually doing an inferior job compared to one that is distributing large volumes of heavy soda bottles. This is a disincentive for discrimination between donation types and food purchases (Campbell et al., 2011). This also provides an incentive for providing heavy and easily stored, but not necessarily nutrient dense, FV, such as the hard 7 (Ross et al., 2013).

However, creating and adding a nutrition-focused metric to the reporting scale is difficult, especially on a national scale via Feeding America. Some food banks have begun setting goals for the percentage of FV distributed, which may be able to be translated to the national level (Vitiello, Grisso, Whiteside, & Fischman, 2014). However, there is little actual data on potential new metrics. For example, about 50% of food banks simply use common sense to determine the nutritional quality of foods and there are few resources available to assess inventory based on nutritional quality (Shimada et al., 2013). As one step to improve this situation, Feeding America could investigate the current methods being used by individual food banks to assess nutritional quality and create a national metric and assessment system to be used in all Feeding America food banks (Shimada et al., 2013) . Ultimately, the creation of a



national nutrition profiling system will help in incentivizing nutrition-focused food banks (Handforth et al., 2013).

### **Potential for Change in the Feeding America System**

One pilot study by the University of California San Francisco and Feeding America assessed an intervention in Feeding America food banks and partner agencies to improve the glycemic control of clients. Participants were obtained from food pantries or clinics served by three Feeding America food banks, and included people who had a hemoglobin A1c (HbA1c) of  $\geq 6.5\%$  or who presented diabetes medication bottles, were over the age of 18, were not pregnant, and who could complete surveys in English or Spanish (Seligman et al., 2015). Participants received boxes of diabetes-appropriate foods instead of the typical boxes handed out by food pantries, and HbA1c was measured before the study and after 6 months; in addition, a survey was used to assess diabetes management and satisfaction with the foods provided (Seligman et al., 2015). This study resulted in a significant improvement in HbA1c values, fruit and vegetable intake, self-efficacy, diabetes distress, medication nonadherence, and trade-offs between buying food and medicine (Seligman et al., 2015). Clients also reported preferring the diabetes food box over the typical boxes from the food pantries (Seligman et al., 2015). Based on this study, not only does promoting health in food pantries produce results, it is also preferred by clients. This indicates the importance of studies to find ways to make widespread recommendations across the Feeding America network to promote fresh produce availability.

### **Basis for Current Study: Past Research on Nutrition in the Emergency Food System**

#### **Clients' Desire for Healthful Foods**

In the study discussed earlier by Verpy, Smith, and Reicks, five client focus groups (31 members) and seven donor focus groups (64 members) were performed in the Minneapolis/St.

Paul area in Minnesota (2003). These focus groups looked at the attitudes, behaviors, and perceptions of needs in both audiences (Verpy et al., 2003). Clients reported that they desired fresh dairy, meat, and produce, as well as an increased variety of vegetables (Verpy et al., 2003). Clients also discussed health-specific diets and the growing need for food pantries to supply foods appropriate for people with diabetes and heart disease (Verpy et al., 2003). Both of these themes indicated that clients would prefer healthier food pantries and that the current study is needed to establish what is preventing food banks from providing fresh FV, since it is not clients' choice. Other major concerns among clients were the safety of donated food, especially when donors clear off their shelves, improving client choice, and including nonfood items in food pantries (Verpy et al., 2003). While the study by Verpy is a qualitative study, quantitative research also supports the ideas found in focus groups. A questionnaire study among clients of food pantries supplied by the Food Bank of Central New York found that 98% of clients thought having nutritious foods available through the food pantry was very important/important, and that vegetables and fruits ranked second and third behind meat/poultry/fish as the most desired items (Campbell et al., 2011). In addition, most clients preferred fresh to frozen or canned FV (Campbell et al., 2011). This information provides a basis for the current study. The desire for fresh produce is there; the need is in establishing how to supply it.

In the same study by Verpy et al. discussed above, focus groups with donors revealed several nutrition-related themes. Donors typically did not consider nutrition when donating foods or chose to donate unhealthy "comfort" foods; however, donors did request information on the kinds of foods that were most appropriate for the specific clientele of food pantries and expressed openness to written education (Verpy et al., 2003). While donor focus groups did indicate a barrier to providing healthful foods in food pantries, their openness to education also indicated a potential opportunity to change what is donated to food pantries by the public.

The study evaluating food pantry clients associated with the Food Bank of Central New York also had a component evaluating food pantry directors' perceptions of client preferences and factors influencing what foods were offered (Campbell et al., 2011). The primary results of this portion of the study were that 80% of directors felt that food pantries should only distribute healthy foods and that inconsistent availability was the greatest barrier to providing fresh produce (Campbell et al., 2011). The research by Campbell et al. provided a more quantitative analysis of the information that the current study will also be looking at in a more descriptive and in-depth manner.

The current study seeks to establish the barriers for providing fresh produce in Feeding America food banks. One aspect of this is distinguishing between upstream and downstream barriers. Past research seems to indicate that it is not a downstream barrier, at least in the form of clients' desire for healthful foods. Upstream barriers described in past research were inconsistent availability, fear of offending donors, and lack of ways to assess nutritional quality (Campbell et al., 2011; Campbell et al., 2013).

### **Lack of Nutritional Quality in the Current Emergency Food System**

Research indicates that food pantries do not provide the sufficient amount, quality, or types of foods to maintain a balanced diet. Researchers in one study interviewed 101 clients of food pantries and 32 clients of brown bag for elder programs served by the Food Bank of Western Massachusetts (Akobundu et al., 2004). Clients were interviewed immediately after picking up their bags and their bag contents were then analyzed by calculating a minimum days equivalent score for food groups provided and nutrient composition (Akobundu et al., 2004). Results from this study found that the majority of servings came from fats, oils, sweets, and grains, with the least number of servings from fruit and dairy groups (Akobundu et al., 2004). There was low nutrient density for calcium, vitamin A, and vitamin C (Akobundu et al., 2004).

This research indicated a lack of certain nutrients found in fresh produce, especially vitamins C and A, in food pantry boxes.

Another study analyzed the ability of New York City food pantries to respond to the needs of cancer patients. Fifty-four food pantries were randomly selected from among the Food Bank of New York City's partner agencies that supplied food to zip codes where at least 10 cancer patients' from the authors' clinic lived (Gany et al., 2013). These food pantries were assessed and results found that pantries did not provide food choice or adequate fresh produce; the study concluded that food pantries could not meet the needs of medically ill cancer patients (Gany et al., 2013). Based on the information from these studies, food pantries were not providing sufficient fresh produce to meet the needs of clients. This is especially problematic when the amount of food pantry clients who have chronic illnesses such as diabetes or hypertension is considered.

#### **Research on Barriers to and Perceptions of Providing Fresh Fruits and Vegetables**

In a study by Campbell, Ross, and Webb (2013), authors performed an online survey of 137 of the Feeding America food banks, assessing support for nutrition among staff, current presence of nutrition policies, and ways in which food banks were promoting a more nutritious inventory; there were also in-depth interviews with senior staff members from 6 California food banks, 3 of which had recently participated in MAZON's nutrition initiative. The interview portion of this study is relatively similar to the methods of the current study; however, the current study focuses more on barriers and opportunities, rather than establishing the current state of nutrition policies. Important results from the online survey were that there was a high perceived support of nutrition policies among boards of directors, staff, member agencies, and financial donors, but only 14% of food banks sampled believed that all food donors would be supportive of food bank nutrition objectives/policies (Campbell et al., 2013). Interviews

supported the belief that while senior staff were increasingly concerned about the nutritional quality of foods, there was worry about losing donors if food banks made restrictions on the nutritional quality of foods donated (Campbell et al., 2013). A large portion of survey responses and interviews focused on current nutrition policies, with only 39% of food banks surveyed having an organizational nutrition policy or guideline, and none of the interviewed food banks having formal policies (Campbell et al., 2013). A major theme brought up in both the survey and interviews was the lack of storage and refrigerated space in partner agencies, creating a bottleneck in distributing healthful foods that require refrigeration (Campbell et al., 2013). Since these interviews were based in California food banks, their success was dependent on the growth of fresh produce locally and the Farm to Family program. This study indicated two potential barriers to providing fresh produce, one upstream and based on food donors and the other downstream, based on partner agencies' capacity to store and distribute fresh produce. The current study seeks to further explain these barriers and find opportunities to alleviate them.

A qualitative study published in 2013 had a similar methodology and interview questions to the current study. It looked at the perceived role of food banks in providing nutritious food and the current status of nutrition initiatives. There were interviews with EDs, chief executive officers, and staff of 20 different Feeding America food banks, resulting from a purposeful selection of food banks based on size, geographic location, and current nutrition initiatives (Handforth et al., 2013). Important themes from the study by Handforth and colleagues were that a nutrition-profiling system should be made by Feeding America and applied to all food banks, and that nutrition policies should be established (Handforth et al., 2013). Other themes included the importance of leader buy-in to nutrition policies for success and the importance of providing fresh produce since clients of food pantries might not have

access to it otherwise (Handforth et al., 2013). Again, the barrier of partner agencies not having the storage or refrigeration capacity to carry fresh produce was discussed (Handforth et al., 2013).

A final study with a purpose similar to the current study utilized a convening of 20 emergency food system stakeholders, rather than an interview or survey process. This study looked specifically at responses to three of the studies discussed above (Campbell et al., 2011; Campbell et al., 2013; Ross et al., 2013). The purpose of the study was to find the implications of those studies to policies and practices in Feeding America food banks (Shimada et al., 2013). Ideas formed from this convention were that donors to Feeding America be provided with incentives for healthful food donations, that national policies to discourage unhealthful food distribution and encourage healthful food distribution be developed, that donor perspectives on food bank nutrition policies be assessed, and that a measurement of nutritional quality of food distributed be developed rather than relying on poundage to indicate the quality of food banks (Shimada et al., 2013). The key barrier identified in the convention was in obtaining donations of healthful food without offending current food donors (Shimada et al., 2013). Again, the fact that there are no widespread nutrition policies to limit donations of unhealthful foods was discussed (Shimada et al., 2013). Thus, this study also indicated potential barriers to providing fresh produce, as well as suggesting opportunities for Feeding America to make changes.

The current study included similar questions to those of the other studies discussed in this section of the literature review. However, with a focus exclusively on EDs and a clear interview process to find the specific barriers to providing fresh produce, this study is unique. Other studies have looked at barriers generally, but the current study asked about barriers at each stage of fruit and vegetable distribution in order to further describe the exact location of the problems.

### **Local Agricultural Resources and Food Bank Provision**

As discussed in the summary of the article by Ross and colleagues, research on California food banks may not be applicable to food banks across the nation. This article found a high portion of inventory by weight as FV, over 50%, likely due to the Farm to Family program enacted in California (Ross et al., 2013). California is a primary producer of many varieties of fresh produce, making it more available to California food banks both through policy and local agriculture. These results would likely not be the same in areas where fresh produce is not grown in large quantities. For example, in the study done in North Carolina discussed earlier, only 26% of donated goods were fresh produce in 2010-2011 (Sengul Orgut et al., 2016). The study by Ross also reported results from the Food Bank of Central New York for comparison, in which fresh vegetables accounted for 13-22% of donated pounds in 2003-2006, with that quantity decreasing over the three year period (Ross et al., 2013). Based on this information, barriers to providing fresh FV varied widely based on the region of the country and local availability of producers.

In particular, conclusions from the discussion among emergency food system stakeholders found that California's success was based on its agricultural industry, and that this opportunity may not be present in other parts of the country (Shimada et al., 2013). The larger study on which this study is based separated Feeding America food banks into low (N=58), medium (N=70), and high (N=64) categories of local availability of fresh produce. These categories were based on state ranking of the acres devoted to fresh produce growth per person in the state. This relatively equal distribution of food banks across categories, with slightly more in the medium category, provides justification for controlling for availability. In using the data from low local availability food banks, this study allows for comparison between the high availability food banks studied in previous literature and the other extreme of food

banks with low availability. Agriculture is not controllable by Feeding America, and thus other opportunities for promoting fruit and vegetable availability in food banks should be found. This provides justification for controlling for local availability in this study in order to analyze controllable barriers to providing fresh produce.

**Public Health Significance and Summary**

This literature review is based conceptually on the emergency food system, as illustrated in Figure 8. The logic model describes the current state of affairs, in which poverty and food insecurity influence the need for food banks, and changes in the types of clients in food banks necessitate changes in the outcomes of interest for food banks. Food banks are uniquely suited to address chronic nutrition-related health problems in low-income populations through providing access to healthful food.

Logic Model for the Impact of the Emergency Food System on Chronic Disease

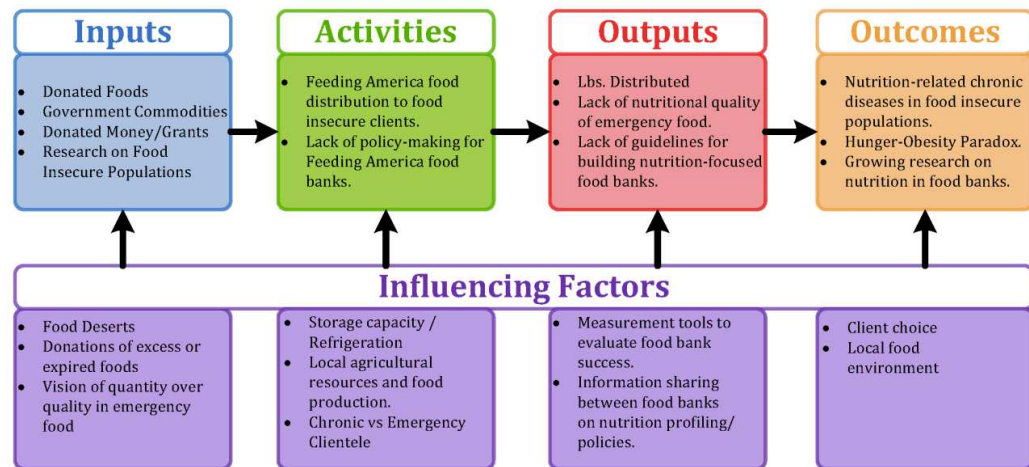


Figure 8: Logic model for the impact of the emergency food system and chronic disease



## CHAPTER III

### METHODOLOGY

This study consists of secondary data analysis from a larger qualitative study of Feeding America EDs. The following methods are taken primarily from the University of Oklahoma Institutional Review Board (IRB) application for the larger study.

#### **Sampling**

The larger study consisted of a sample of 30 EDs of Feeding America food banks and 3 interviews with Feeding America leadership staff, resulting in a total of 33 interviews. This larger study used a three-way table created by Feeding America staff to stratify all 202 Feeding America food banks into 27 strata based on (1) the degree to which the food bank currently distributes fresh produce (% total distribution by pounds), (2) the local resources for fresh products (state ranking of acres devoted to produce growth per person in the state), and (3) existing food bank resources (combined resources in dollar amounts). High distribution of fresh produce by pounds was defined as 28-66% of total distribution, medium was defined as 17-27% total distribution, and low was defined as 2-16% total distribution. One ED was interviewed from each stratum. If the chosen ED declined to participate, another food bank ED was chosen from that stratum until there was one interview from each stratum. The final three EDs were chosen from the strata which were not well categorized based on regional variation, which in this case

was from the medium availability category and not relevant to this secondary analysis.

## Sampling Methodology

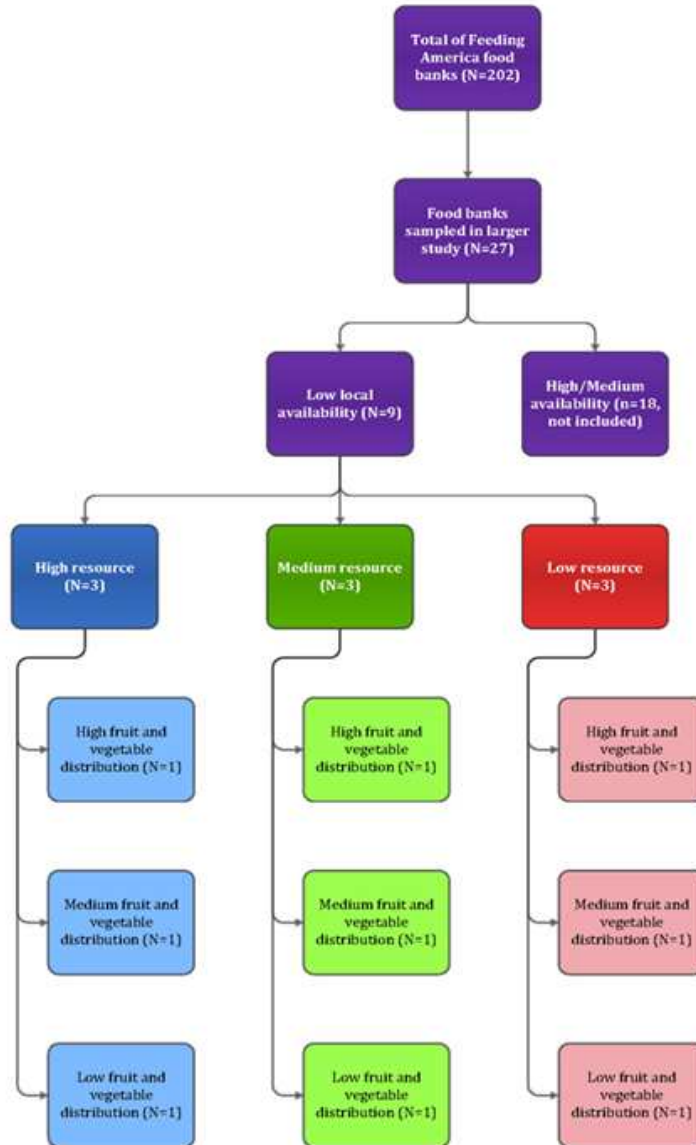


Figure 9: Sampling methodology for the subset of data used in this study

For this thesis, a subset of 9 interviews was analyzed from the larger study. These 9 interviews consisted of all the interviews among food banks with low local availability of fresh products. Figure 9 illustrates this sampling strategy. There are 58 total food banks in the low local availability category, which is a little less than 30% of all Feeding America food banks. Thus, this is a relevant category to study since there are many food banks with low local availability of fresh produce and it provides a comparison against the high local availability food banks studied in previous literature.

### **Study**

Food bank EDs were contacted via e-mail by a member of the research team. Dr. Seligman and Dr. Wetherill conducted interviews after informed consent was provided. Informed consent was provided via verbal consent using a study information sheet before audio recording started. The University of California San Francisco and the University of Oklahoma IRBs granted a waiver of signed written consent for the larger study, since the research presented no more than minimal risk of harm to participants and involved no procedures for which written consent is normally required outside the research context. In interviews, participants were advised not to say their names, their food banks' names, or other identifiable information. Dr. Seligman conducted 12 of the interviews and Dr. Wetherill conducted the remaining 21, as well as qualitative analysis. In-person interviews were prioritized and were conducted at annual conferences highly attended by Feeding America EDs. Interviews occurred in a private room convenient to the conference site. Interviews were taped using an encrypted audio recorder. All interviews for this secondary analysis were performed in person. Interviews followed a semi-structured interview guide including open-ended main questions and additional clarifying probes relevant to opportunities and/or barriers relevant to the individual food banks. The interview guide is included as Appendix B. The interview question path was pilot tested by

Dr. Seligman with a food bank ED. Participants received a \$100 gift card to compensate for their time at the end of the interview. The University of California San Francisco purchased gift cards and interviewers distributed them. Audio files and transcripts were stored at the OU College of Public Health secure servers, which are password-protected and backed up regularly. They were only available to the OU and UCSF research teams. Any file exchange to UCSF and to researchers outside the OU research team occurred via the OUHSC electronic secure file transfer system and were saved on a password protected encrypted computer.

This secondary analysis used a subset of data from the OU study. OSU IRB determined that the secondary analysis did not qualify as human subjects research and provided a waiver of oversight by the OSU IRB (Appendix D). This secondary data analysis was performed on the de-identified results of the data coded by the OU research team.

### **Analysis of Data**

The larger qualitative study utilized a purposive sampling strategy to obtain diversity in (1) the degree to which the food bank currently distributes healthful food, (2) the local resources for fresh products, and (3) the existing food bank capacity. All transcripts of interviews were produced in a format compatible with Atlas.ti software (Germany) for qualitative analysis (Scientific Software Development, 2016). All transcripts for this subset of data were coded by two individuals- myself and Dr. Wetherill. This division prevents unreasonable influence from personal bias by the coders. Inter-coder and intra-coder reliability were assessed by percent agreement (85.4%) and Cohen's kappa (0.87) through the Coding Analysis Toolkit (Shulman, n.d.). This meets the acceptable criteria of  $\geq 85\%$  agreement (MacQueen, McLellan-Lemal, Bartholow, Milstein, & Guest, 2008). Discrepancies were resolved through mutual consensus.

Codes were determined both a priori, based on past experience and literature, and inductively by coders while reading initial transcripts. The codebook is included as Appendix C.

Analysis of interviews was informed by the literature review, personal experiences in running a food pantry and ordering from a Feeding America food bank, the CDRM, and the domains of fruit and vegetable distribution. Codebook development was also informed by information on basic qualitative methodologies, especially provisional coding, with the use of a series of subcodes in order to fully understand the data (Boyatzis, 1998; Guest & MacQueen, 2007; MacQueen, McLellan, Kay, & Milstein, 1998; Saldaña, 2015).

Once completed, the codebook was reviewed by Dr. Wetherill then sent to a registered dietitian at Feeding America for further review and inclusion of new Feeding America policies of which the researchers were unaware. The codebook was finally approved by Dr. Hilary Seligman, the primary researcher on the larger study, before being used to code interviews. Few codes were created inductively during the coding process.

## CHAPTER IV

### RESULTS

#### **Participant Characteristics**

In general, data on participant characteristics, such as gender, age, and race/ethnicity were not gathered in order to preserve food bank and ED anonymity. However, when asked how long they had been in the world of food banking, EDs' replies averaged 13.25 years (median 16 years; range 15 months to 25+ years).

#### **Barriers in Low Availability Food Banks**

The most commonly cited barriers to fresh fruit and vegetable distribution are listed in Table 3. Of these nine common themes, five are from within the sourcing domain. Two (cold storage in partner agencies and agency demand) are in the outbound and agencies domain, and one (food bank cold storage capacity) is in the handling domain.

Table 3: Commonly Cited Barriers		
Theme	Number of Interviews	Representative Quote
Local Donations or Purchasing from Growers	8	“The state that I am in is a huge agricultural powerhouse state but it is a producer primarily of corn for ethanol and for feed and soybeans. A very small percent of the crops grown in my state are specialty crops which is ironically names. That's not a Feeding America issue, right? That's a food systems issue. If I had a fairy godmother who would grant me a wish, it would be that more of the food that we eat is grown in my state.” High Distribution #1
Cold Storage in Partner Agencies	7	“That's probably one of the bigger challenges, obviously. At the end of the distribution line is their ability to store that product for any length of time.” Low Distribution #3
Regional Variation in Fresh Produce Growth	5	<p>“I think there is adequate supplies of fruits and vegetables that are out there in the US. It's just getting them from the certain locations, whether it's East Coast, West Coast, South Coast to the Midwest and other areas of the country.” – Medium Distribution #1</p> <p>“The logistics might [be] one of the bottlenecks, is where it's at. That's really for us, because of our geographic location in the United States, is a cost thing again. If it's coming out of the southwest of California, the northwest or east coast, those are all high cost areas to transport out of and into the Midwest.” – Low Distribution #3</p>
Agency Demand	5	<p>“At the beginning, we had to push back from some of our member agencies. This whole system of food distribution has been developed around cans and boxes.” – High Distribution #2</p> <p>“If we have a problem it's individuals that are supplying, that are looking at our inventory and it's liking what they want and they're acting as gatekeepers.” Low Distribution #1</p>
Food Bank Cold Storage Capacity	4	“When you think about that our warehouse was set up to handle dry goods and canned goods. We have a very small

		refrigeration system and a very small freezer system.” – Medium Distribution #1
Local Donations and Purchasing from Retailers	4	“Now, if there's an over production instead of that used to be food processors or manufacturers, their options were typically to donate it or to trash it. Now no, now there are many more options to sell that product and particularly the shelf-stable.” Low Distribution #1
High Price of FV Relative to Cost of Other Foods	3	“The cost to acquire is higher today across the board, but it's still higher with fresh produce obviously than the fresh and refrigerated than it is with shelf-stable no matter where it's come from.” – Low Distribution #1
Food Bank Competition	3	<p>“There is competition among food banks for everything. We don't talk about it very often but that's a reality. Fresh fruits and vegetables is only one aspect.” High Distribution #1</p> <p>“In essence there's a lot of excess product that's available in the country that's either grown in this country or comes in through the ports from other countries and then we end up unfortunately bidding against one another to acquire that excess product. I don't know that there's another market that it could go to if it's not going to go to us. We're driving the cost up against ourselves.” Low Distribution #1</p>
Budget for Sourcing	3	<p>“The cost piece is probably the biggest bottleneck for us.” Low Distribution #3</p> <p>“We don't have a lot of purchasing dollars. We purchase very little, and so most of what is coming in is coming in through our retail program versus even what we would get from a manufacturer [...]. In order for us to get the amount and the variety of fruits and vegetables that we want, it's going to require a larger investment of dollars.” Medium Distribution #2</p>

Table 3: Commonly Cited Barriers

Though mentioned far less than barriers in the other domains, common barriers in the distribution domain were lack of client knowledge (mentioned 5 times in 4 interviews) and agency shelf life (mentioned 4 times in 3 interviews). In the planning domain, a common barrier



was in making or sustaining nutrition guidelines (mentioned 5 times in 4 interviews), lack of nutrition-focused Feeding America metrics (mentioned 4 times in 2 interviews), and making or sustaining food bank nutrition metrics (mentioned 3 times in 2 interviews). A perceived loss of donors from potentially enforcing a nutrition policy was only mentioned by one food bank in this study.

Of these less common themes, quotes on making or sustaining nutrition guidelines were of particular interest. EDs mentioned barriers to establishing nutrition policies based on problems gaining support for nutrition policies since they have a lack of produce and other food available.

Part of our struggle is, to have a nutrition policy, a policy without product isn't much good. – Low Distribution #3

Some barriers that were expected were not cited in low availability food banks. EDs of low availability food banks did not cite barriers from Feeding America solicitors, garden programs, community partnerships, community connectedness for sourcing, produce inspections, client capacity, direct distributions, community partnerships (such as with healthcare to promote distribution) or donor support.

Some barriers did not appear in interviews. In particular, the produce matchmaker system was new or in development when interviews occurred, and it did not appear in any low availability interviews, as expected. In addition, no EDs of low availability food banks mentioned barriers based on the overall US supply of fresh produce, which was as expected since Feeding America pushes the idea that there is a high availability of unused/wasted produce in the US. Barriers from Feeding America tax write-offs for donors or from low client demand were also not mentioned; both of these appeared more in the opportunity section, especially client demand.

### **Differences in Barriers Cited between High and Low Distribution Food Banks**

Several barriers were mentioned in food banks with a high distribution of fresh produce, but not in food banks with a low distribution of fresh produce. Often, the barriers that appeared in high distributors were further down the distribution chain, focused on problems getting food out

to agencies or clients. One reason for this could be that EDs of low distributing food banks have not had to think of these barriers yet since they are distributing such a low volume of fresh produce. Barriers based on agency shelf life of fresh produce were mentioned in high distribution food banks [2 of 3] but not in low distributors. In addition, barriers based on client knowledge of how to prepare fresh produce were mentioned several times in one high distribution food bank but not at all in low distribution food banks.

I would think the demand is high but many times, depending on the product, they don't know what to do with the product, meaning the clients don't know what to do with a product. – High Distribution #3

Lack of refrigerated trucks for distribution to partner agencies was mentioned in a high distribution food bank but not in any low distributors. Volunteers as a barrier to produce distribution, either because of a lack of volunteers or lack of educated volunteers, were mentioned in high distributors but not low distributors. Maintenance fees for fresh produce were mentioned as a barrier to fresh produce distribution in two high distribution food banks but not any low distribution, typically because maintenance fees would lower agency interest in fresh produce. One high distributing food bank mentioned needing more staff knowledge for produce distribution.

I would say it is expensive in that it requires a lot of training and human capital development. A driver who is picking up produce, there's more work involved than a driver who's picking up cans of soup. You have to look at it. You need to make sure it's good. – High Distribution #1

Other barriers were only mentioned in food banks with a low distribution of fresh produce. This can indicate barriers that are keeping low distributors from moving on to higher produce distribution. Often, these barriers were due to capacity constraints. Food waste of fresh produce during handling at the food bank was mentioned in a low distribution food bank but not in any high distribution food banks. Inability to put unpredictable produce donations on an online

ordering system was mentioned in one low distribution food bank; however, not all food banks have an online ordering system so many other food banks did not have this problem at all.

Barriers for using Feeding America metrics and F2E were mentioned several times in one low distribution food bank but not in any high distributors. Feeding America metrics do not account for non-food items and Foods to Encourage only counts some of the healthy options a food bank provides.

Many of our agencies and the families in need really prioritize those non-food items. If we can get them shampoo and toothpaste and deodorant and soap and diapers, they really want. It's important for us but it's not counted in that 70%.

[reported to Feeding America as F2E] – Low Distribution #1

One low distributor also mentioned problems with fruit and vegetable focused messages for their donors. While budget as a barrier to produce distribution was discussed as a common barrier above, no high distributors mentioned this. Two of the three low distributing food banks and one medium distributor mentioned their budget as a barrier. A low distributor also mentioned barriers from gleaning, and another based on receiving donations from a local processor, but these are likely specific barriers to those food banks' regions.

Finally, some barriers were disproportionately cited in low distribution food banks when compared to high distributors. Low agency transport as a barrier for produce distribution was cited in twice as many low distributors as high distributors [2 versus 1]. Barriers in using food bank transport to get fresh produce to agencies were mentioned in two low distributors and one high distributor.

What it would mean for us though is that we'd also have to then invest in more local trucks and more local drivers to move it out, because it doesn't feed anybody if it sits on our warehouse floor and if it sits on the warehouse floor, it goes bad and then they'd be thrown away. – Low Distribution #1

Another problem area for low distributing food banks was the transportation fees for Feeding America product. This problem was cited in two low distributing food banks and only one high distributing food bank, as illustrated in the quote below:

Even though it's the same portal [Feeding America choice system] and often times the same companies that are making that product available to us, the fees have increased quite a bit and certainly that's something that Feeding America since it's their portal and they control it, we have to have a position on it. – Low Distribution #1

Low distributors mentioned a relatively high price of fresh produce versus other items more often than high distributors did [2 interviews versus 1]. For example, one ED of a low distributing food bank said,

I would say that the cost of that product is increasing and certainly the cost to handle it is much more expensive than the cost of shelf-stable product, but that's a function of the marketplace. – Low Distribution #1

Transporting fresh produce into the food bank was also mentioned in two low distributors and only one high distributor. This often had to do with fresh produce not being grown in the food bank's service area, which is a common theme in all the low availability food banks in this study.

## **Opportunities**

The most commonly cited opportunities to increase FV distribution are listed in Table 4. Four of these commonly cited opportunities were in the planning domain (partnerships with community agencies, advocates, future research, and grants), three were in the distribution domain and focused on client-oriented factors (client demand, client education, and direct distributions), three were in the sourcing domain (US supply, food bank sharing, and mixing centers), and one was in the outbound and agencies domain (agency demand). Agency demand came up as both an opportunity and barrier.

Table 4: Commonly Cited Opportunities		
Theme	Number of Interviews	Representative Quote
Advocates for Fresh FV in the Food Bank	9	“I would say our farmers are [advocating for fresh produce]. I would say the majority of our agencies are advocating on ensuring that we do have good produce that they can get to their constituents. Definitely, I would have to say some of your government officials [...]. I would say some, but I wouldn't say they're big advocates at this point, is health professionals. I think there's a need but I think they're just beginning to think of this.” High Distribution #3
High Client Demand for Fresh FV	9	“The fact that they said the number one thing they [clients] wanted was fruits and vegetables, it's a huge demand. I think they're trying to ask the agencies for it. Someone will go to one of our mobile pantries and they'll get a bunch of fruits and vegetables and then, they'll be at an old school food pantry a couple of months later and they'll say and we hear this, "Hey, don't you have any fresh fruits and vegetables?" This is new.” High Distribution #2
Future Research to Support FV Provision	9	<p>“If we had more data on or information about the amount of fresh fruits and vegetables that are wasted on an annual basis that would be a very critical component.” – Medium Distribution #1</p> <p>“If I had data that kids that are in our programs and are eating our foods and now getting this education and then in ten or twenty years the incidences of diabetes is less in these kids, that would be great, but that's an awful tall order, and it's an awful hard claim to make.” – Medium Distribution #2</p> <p>“I think as we look at moving to having those conversations and maybe creating programs around food and health, I think data that could be gathered about the impact, specifically around fresh fruits and vegetables [...]. More specifically, I think it would be important to be able to talk to the general public, the donors about how much it's going to take to impact that. What's it going to take for an individual that has type one or type two diabetes, what generally would be the amount of fresh</p>

		fruits and vegetables that they need to consume a day, a week or more?" – Low Distribution #3
Partnerships with Community Agencies	8	<p>"I think that there are a lot of potential cooperative efforts between the medical and the health community and food banks." Low Distribution#1</p> <p>"I think food banks probably are going to have more of a role in education and linking different community services to those clients recognizing that if you're food insecure you're probably dealing with other poverty issues and being able to, if we're in contact with that client anyway we should be able to link them to other services that are going to help elevate them to a lifestyle that's non-poverty. I think that's probably going to be more of a role maybe collaboration." Medium Distribution #3</p>
US Supply of Fresh FV	8	<p>"I feel that there is enough. I know in my state the estimation that we've gotten is that there are about 55 million pounds of produce that's surplus produce that we could be going after, and that would be produce for the most part that our families would be interested in." Medium Distribution #2</p> <p>"I think there's plenty out there available. I think if there's a competition for those resources, it's in managing them as opposed to finding them." Low Distribution #3</p>
Improving Client Knowledge of Fresh FV	7	<p>"I think in all of those areas where you have those kinds of diseases, a lot of it's about educating the patient, what they need to do from a dietary standpoint to help improve their health." Low Distribution #3</p> <p>"I think we could do a lot in terms of education because we are you know if it's not us it's our pantries that are that point of contact with the individual." Medium Distribution #3</p>
Direct Distribution of Produce to Clients	5	"At the end of the day, I guess where I work, 'What if we just, we're the organization that just came to people? And then, they could use their dollars for other things.'" – Low Distribution #3
Agency Demand for Fresh FV	5	"I would say that they are very engaged with trying to get as much fruits and vegetables as they can because they see

		<p>that as you can get a lot of fruits and vegetables into a family's hands.” Medium Distribution #1</p> <p>“I would guess that the majority of our agencies would probably be willing to distribute produce. I would guess maybe 30% might be more than just willing.” Low Distribution #1</p>
Sharing between Food Banks in the Feeding America System	4	<p>“We can't take a whole semi of anything, a whole load. We'll have to do split loads; we'll have to share with other food banks or do a mixed load.” – Low Distribution #2</p> <p>“That's where Feeding America can help to coordinate, I think transportation, help to coordinate the types of excess foods in areas and regions of the country [...]. I think they have to be the key to able to help to lead those larger national contracts that can make this happen.” – High Distribution #3</p>
Mixing Centers	4	<p>“You can create mixing centers, you can do lots of product mix stuff out of a large regional distribution model. You can then use the other food banks that are now in an agency within a region and use them to be not only distribution points, but also cross stock locations for moving and mixing product within a regional area.” Low Distribution #3</p>
Grants	4	<p>“We're exploring all sorts of different options with the different hospital providers. We're trying to figure out if we can find someone, but either a hospital system or someone in insurance or use Medicaid dollars to pay for some of health intervention.” – High Distribution #2</p>

**Table 4: Commonly Cited Opportunities**

Several opportunities that were expected were not mentioned in interviews with EDs of low availability food banks. Opportunities to use produce inspections to increase the quality of produce received was a code that was added inductively to the overall study, but did not appear in low availability food banks. No low availability food banks mentioned opportunities using online ordering. No low availability food banks mentioned opportunities from using Feeding America solicitors, but Feeding America stopped using this practice for obtaining fresh produce some time during this study’s development. Food banks also did not mention opportunities to use the

Feeding America Matchmaker System to order produce, though this was a brand new system when most interviews took place. No food banks mentioned opportunities in purchasing or receiving donations from local processors. Opportunities for using agency transport for outbound deliveries or transport during sourcing were not mentioned.

### **Differences in Opportunities Cited between High and Low Distribution Food Banks**

High distribution food banks mentioned some opportunities more often than low distribution food banks. For example, one high distribution food bank mentioned an opportunity to utilize refrigerated trucks to decrease the time to distribution, but no low distribution food banks mentioned this.

I don't think it will look like warehouses and trucks. I think we will have to be more enable than them. I think in some ways, we'll look more like City Harvest in New York City which is perishable food being picked up in refrigerated vehicle. Maybe, there's a facility but it's less about holding food and it's more about moving food in real time and also doing the community engagement work.

– High Distribution #1

Two low availability food banks, one of which was a high distributor and one was a medium, mentioned opportunities based on the relative price of produce. The high distributor who mentioned produce being lower in price than other food products was likely due to a state-wide produce donation program. Though not exclusively cited in high distributing food banks, opportunities for community partnerships were disproportionately cited in high distributors (mentioned frequently in all 3 vs. mentioned a maximum of 2 times by 2 low distributors).

Some opportunities were mentioned in low distributing food banks but not high distributing. One low distribution food bank ED discussed partnering with schools for school breakfast programs, but no high distributors discussed this. In addition, one low distributor mentioned using agency volunteers to repackage produce, but no high distributors did. One low distribution food bank mentioned ways to educate agency volunteers about fresh produce



distribution and best practices. Two low distribution food bank EDs mentioned wanting to create nutrition guidelines for what they purchase or distribute. One low distribution food bank executive director mentioned their perspective on nutrition guidelines, which could be an opportunity for increasing the nutrition quality of emergency food.

I wasn't really a big proponent of telling people what to do. It felt too paternalistic, it felt too judgmental to me. I really, I wasn't about that at all but somebody at that conference said something that turned me around and was basically saying that food banks have access to a population maybe second only to TV. I just thought, "Why wouldn't we take that opportunity?" Not to tell people in any type of heavy handed way but just do whatever we can do for the population that we're serving [...]. If you have a purchase program, purchasing low sodium canned vegetables or whole grain or whole wheat spaghetti and just giving some of the healthier options for the agencies to then pass along and to then provide more fruits and vegetables to the clients with recipes and stuff like that. –Low Distribution #2

One low distribution food bank also mentioned opportunities for Feeding America to help invest in produce distribution through making their metrics more focused on nutritional quality. This food bank suggested using F2E as a metric of success.

### **Innovative Programs**

Some of the most striking differences between high and low distributors was in the innovative programs they used. Interestingly, no low distributing food banks mentioned state-wide purchase programs, which was the most commonly identified innovative program in sourcing. Two of the three high distributing food bank EDs mentioned using a state-wide program for sourcing produce. The rest of the EDs who mentioned state-wide programs were from medium distributing food banks. In addition, programs that prepared foods or packaged fresh produce at the food bank were mentioned by two of the three high distributors and none of

the low distributors. One high distributing program mentioned providing nutrition education to clients, but no low distributors mentioned this. Innovative programs that utilized healthcare partnerships were mentioned by all three high distributors but none of the low distributors.

Other innovative programs were utilized by low distributors but not high distributors. One low distributing food bank mentioned a program that sent trucks down to the Mexican border in order to receive fresh produce. Another food bank mentioned utilizing their relationship with local retailers in order to partner with the retailers' sources for fresh produce. Food bank direct distribution of fresh produce through running their own food pantry was mentioned exclusively by a low distributor but no high distributors. Only low distributors mentioned having programs that allow partner agency volunteers to come in to the food pantry and shop for the fresh produce they want to take. One low distribution food bank mentioned training the volunteers and employees at their partner agencies as a current innovative program.

### **Sourcing**

Some food banks are currently using innovative programs or otherwise seizing opportunities in order to increase fresh produce distribution. The most commonly mentioned innovative program for sourcing among low availability food banks was utilizing community partnerships with state-wide purchasing programs that either provide relationships with donors or provide funds for fresh produce. This addresses food bank budget issues, which was one of the major barriers mentioned in this study.

We are allocated a certain amount based on our pull factor and then we actually purchase from state [...] farmers surplus produce so it's rock bottom prices. It's produce that they may not have been able to sell or that it was at the end of the season so it's a variety of different reasons that we get it. It might have been an apple that wasn't pretty enough or one of those things. –High Distribution #3

One ED had innovative ideas for leveraging relationships with local growers, including gleaning and “tenant farming.”

When the farmers go out to pick the crops, what we need them to do is take all the crops out there that are ready to go, even if they're larger than grade A. Because if they can do that we're only going to be paying for the pack and pick out cost as opposed to because that way then the farmers win, the food banks win, and our ultimate customers win. - Medium Distribution #1

We got one farmer who we just talked to, they are going to plant an acre of potatoes for us. Then, it'll be our responsibility to get the volunteers out there to harvest the crop and things like that. We're also talking to some large farmers who want to get out of the business and we're trying to see whether or not we can work with some of the ag outreach areas in the various local colleges to say, "Okay, who wants to help come and farm. This is a tenant farmer." Then part of their rent, if you will, will be taking some of that crop that they would produce and send it back to the free store and to our pantries. - Medium Distribution #1

While three food banks mentioned opportunities from gleaning, this food bank ED was the only one to mention having a current garden or opportunities for using community gardens in the future.

### **Handling and Operations**

By far, the most commonly mentioned opportunity in handling was for the food bank to find ways to process fresh produce on site. Two food bank directors mentioned using food bank volunteers and processing facilities to separate produce into more manageable packages for the clients of their agencies. One food bank [Medium Distribution #3] utilized an opportunity by using food bank processing facilities to produce sellable items that then generated unrestricted revenue for the food bank. Food bank processing facilities can also be used to reduce produce waste by making distributable items, such as spaghetti sauce, out of produce that is about to go bad.

It's a reoccurring thing that keeps popping up this week is utilizing the kitchen to reduce the produce waste. We just haven't thought about it because we've been so focused on controlling what we're ordering and making sure we're not over ordering. Now I'm thinking maybe we should be over ordering and then processing it in the kitchen. – Medium Distribution #3

### **Outbound and Agencies**

Several food banks mentioned that they are currently working to improve partner agency capacities through using their own money to purchase cold storage facilities for partner agencies or training leaders of partner agencies. For example, some food banks address the barrier of low agency demand by educating volunteers and employees at partner agencies.

What we ask all of our partners to do is to get involved with a training program that we call our leadership. That's a year-long program where we teach them how to write grants, how to engage their board, how to engage their volunteers, how to work with their staff, basically build up their internal capacity so that they can then be stronger on their own. – Medium Distribution #1

Some food banks use a notification strategy to tell partner agencies when produce comes in, either through e-mails or an online ordering system. This type of program was cited by four separate food banks.

### **Distribution**

Several food banks utilize a mobile food pantry model, in which they run a food pantry in areas that do not normally have access to local food pantries. This allows the food bank to distribute food in several different sites a week and get around the problem of not having partner agencies in certain areas.

We're going to senior high rise buildings. We've got what we're calling a school pantry model now. We're going to low income schools at the end of the school day [...].We can distribute a lot of produce with it. – High Distribution #2

Other food banks utilized a just-in-time system for outbound food in order to get it to the agencies right before a distribution and prevent the need for agency refrigeration capacity. In this study we termed this system a produce drop, based on what the majority of directors called their programs. These types of programs, unlike a mobile market put on by the food bank, partner with an existing food pantry.

That is why, in many cases, we've gone to almost the farmer's market type of distribution model where we'll tell a pantry that we're going to come out and as part of their overall food distribution that day we're going to do a produce distribution as well. That way it couples and it leverages the time that they have with their clients. - Medium Distribution #1

We have volunteer produce drivers who every day deliver fresh produce just in time to pantries that are serving. Your food pantries going to be open from 11:00 to 1:00, our volunteer shows up at 10am and gives you 5 boxes of fresh produce. – High Distribution #1

The beautiful thing about it was that there were very few barriers to this. It was about getting the right food on the truck, and it is typically food that is highly perishable that we've got to move very quickly, or it's food that we have an abundance of that's not moving, the shopping list. We have the food, we have the truck, we take that truck out, we communicate with the agencies, and they

come and pick it up, and we are distributing ... We just launched one in another county you know nine, ten thousand pounds a drop. - Medium Distribution #2

Other food banks had ideas for partnering mobile distributions with medical care, or were currently doing so. In Oklahoma, this type of program is called a Fresh Rx program (Regional Food Bank of Oklahoma, n.d.), and variations of this name are being used throughout the country.

Then, in tandem, we're doing prescriptions for fresh produce and we're marrying that up with our mobile distribution. The goal is you walk into your county health clinic or this federally qualified health center, you get flagged as being food insecure, "Oh, by the way, you have diabetes." The physician or the medical provider that you meet with gives you a prescription for fresh produce. You walk out of the building and there's the produce mobile right there. And you also have a list of partner organizations where you can get this fresh produce every week. And so, you're really armed. - High Distribution #1

We partnered with them [a federally qualified health center] and we have our nutritionist on site. We do a mass produce distribution so that everyone who comes can bring produce home. The docs there are being trained to say, "Don't forget nutritious food is critical to your health. The food bank is here. Take some produce before you go." We have this prescription that looks like it's prescription pads but essentially, for a doctor or a nurse or anyone in the healthcare to give out this essentially says, "Fresh or nutritious food is vital to your health. Call the [REDACTED] Food Bank health center to get connected." - High Distribution #2

What our hope is, is that we've been in contact with, and they've contacted us as well, nutritionists at hospitals and saying that they have ... Again, these clients are coming in to them. A doctor's written a prescription, said, "You need to go see a nutritionist, you've got to eat better because of your health problems. You've got to lose weight, you've got to do these things," and then the challenge becomes, with the nutritionist, is that these individuals, our clients, come in and say, "Well, we don't have the money to buy the correct fruits and vegetables that are necessary to eat more healthy." That's what we're trying to look at. How do we partner? What can we do? – High Distribution #3

In addition, one low distributing food bank mentioned running a food pantry in their own facility, and another food bank mentioned wanting to run actual farmers' markets that take payments from SNAP EBT cards, and double the amount of product received for those paying with an EBT card.

Other innovative programs were ways to bypass the food bank in the distribution process, mentioned by four separate food banks. This primarily included having food pantries directly pick up donations from local retailers or other donors. Some food banks also used refrigerated trucks to deliver donations directly to partner agencies without ever bringing it to the central food bank.

Finally, some food banks utilized client education opportunities in order to increase client knowledge of how to prepare fresh produce. Most education programs were focused on cooking education, and one food pantry mentioned a program teaching clients about the nutritional value of fresh produce.

## **Planning**

Partnering with other community programs, especially those in the medical field, was utilized as an opportunity by several food banks through mobile distributions and other routes. Medical providers and insurance companies were identified as potential donors who may be invested in improving the nutritional quality of food provided through the food bank. Other food banks suggested utilizing college nutrition students or recent graduates to do nutrition education. EDs also suggested utilizing colleges and health organizations to do research on ways to help their clients or the prevalence of chronic disease among their clientele.

Several food banks mentioned writing grants specifically to be used for healthier food items, targeting grants towards donors interested in health, or providing fresh produce focused messages to donors. In this way, fundraising efforts could maximize opportunities for providing fresh produce.

One food bank in particular [High Distribution #2] utilized opportunities in their staff and board support for nutrition policies. They created a produce team with weekly meetings as well as creating a committee for board members focused on nutrition. This was used to increase staff support for nutrition. This same food bank was the only food bank to mention having a nutritionist on staff. This food bank mentioned using the nutritionist, dietetic interns, and local consulting nutritionists to provide education to clients and guidance in nutrition policy development.

Several food banks went through a process they called “tiering,” in which partner agencies were prioritized based on their capacity. Agencies with larger capacities and larger client bases were often prioritized and used to distribute even more fresh produce. Low capacity agencies were often either targets of interventions to increase their capacity or were left alone since they had a low desire for change.

Our agencies are tiered. We have in our top tier, agencies that are high capacity and fully capable and chomping at the bit for more fresh produce and more other



things. Part of the definition of being in that top tier is around really embracing nutrition and produce strategies. Second tier, organizations in the middle. They want to get there but there is a physical capacity constraint or there's maybe a human capital constraint. Then, the bottom tier which those are low capacity, probably will never move out. They remain distribution points. – High

#### Distribution #1

Four separate EDs mentioned programs focused on “shortening the line.” This means they were programs not necessarily to distribute food, but rather to address the issues that cause food insecurity. These programs included job training programs and SNAP enrollment, among other programs.

We have a job training program where we produce food and we are going to be significantly expanding the amount of produce food in partnership with a for-profit company that only does quality nutritious food. – High Distribution #1

We work with SNAP. We have an authorized rep. We've gone that approach as far as last year we got about twenty-four hundred families enrolled in SNAP. We're looking to double that this year. We were part of the Affordable Care Act Navigator program, so we've been able to get people signed up on Medicaid and Medicare and other health insurance. We have training programs. We're getting people job skills and job training so that they can become more stabilized and self-sufficient. We also have a SSI jobs enrollment program where we can get people disability from their disability benefits and get them enrolled in that. –

#### Medium Distribution #1

One food bank mentioned how Feeding America could potentially use F2E to create an incentive for food banks to distribute more nutritionally dense foods.

Yeah, there are contract requirements now that we have to distribute. So many pounds per person to people in need. We could have said that X percent of those pounds had to be fresh fruits and vegetables or we track I don't know 30 different categories of food. They could have said that if the pounds, you're only going to count pounds in these categories. - Low Distribution #1

Another food bank indicated that they report PPIP to Feeding America but only count nutritious pounds in their internal measurements [High Distribution #2]; this same food bank used the CHOP rating system in conjunction with measuring F2E (Seidel, Laquatra, Woods, & Sharrard, 2015). Other food banks that measured the nutritional quality of the food they distributed measured it through F2E.

One food bank, High Distribution #1, actually had a nutrition guideline to refuse unhealthy foods, even from Feeding America national partners.

It caused a lot of consternation in the Feeding America National Office and I certainly understand why. They have to manage those relationships but we happen to have a board member who is at that organization. We reached out to him and we said, "We want to talk about this. We want to make sure that we're talking with your organization so they understand." We sat down with their executives and what we heard was, "Good for you." - High Distribution #1

This is using food bank relationships with donors to allow for the success of nutrition policies. This food bank also illustrates how low availability food banks in general did not see potentially losing donors as a barrier to establishing nutrition policies. The majority of other food banks used their purchasing dollars to buy healthful foods but did not refuse donations of unhealthy foods if they were available.

## **Leadership Attitudes**

Questions about leadership attitudes addressed their view of the goal of food banking, their chronic disease concern, their view of the link between fruits and vegetables and health, and their goals for fruit and vegetable distribution (Appendix B).

### **The Purpose of Food Banking- Addressing Hunger or Health**

Every ED interviewed mentioned promoting health in their food bank in one capacity or another, with varying levels of intensity. Representative quotes from EDs of high distribution food banks are listed below.

The people we serve are so sick. They are sick with diseases that are either can be alleviated somewhat or can be prevented by the food that we distribute. I mean, it is a stark, stark reality in our community. I think our community may be extreme but to me, it's not optional to what we have to do. – High Distribution #1

When I speak for our food bank, we're trying to improve the lives of the clients we serve. We know that our clients cannot afford the healthy food that they need. It seems to me that we have a responsibility to distribute the most nutritious food we can. – High Distribution #2

Again, it needs to be cost effective, not cost prohibitive and I think we do have a right in distributing food of not just giving what's there but trying to ... That's what we try to do; try to have a variety of foods that, again, that within the food ... It's not a pyramid anymore but food plate. I do think we have a responsibility for that, to move towards that. – High Distribution #3

High distributors tended to be focused on the word “responsibility” and the passion EDs exhibited towards providing nutritious foods to clients. The ED in High Distribution #1 seemed more passionate about promoting health than any other ED, which is represented in the fact that

this food bank is the only one where the ED mentioned a formal nutrition guideline for rejecting unhealthy donated foods. Quotes from EDs of medium distributing food banks are listed below.

"What would you put on your table? What are you serving your family?" If you wouldn't serve your family snack foods and sugary drinks and the things that we're all trying to avoid on a regular basis, then why would you expect that to be something that would be good for the families that we're serving?" It's a matter of dignity. It's a matter of just treating people like you want to be treated. I think many of the suppliers that we get food from for the shelf stable foods, they understand that it has to be a well-balanced diet. – Medium Distribution #1

In addition, I hope that we are known for caring about our clients' lives and meeting them where they're at, and that included where they're at in terms of their health and what nutrition needs they have. – Medium Distribution #2

I think we fit in the middle of that. I think even if it's just to be a catalyst for a conversation between people that are concerned about healthy eating and being able to bring those people to the table is useful but I think it's also very important to be able to still talk about just basic food needs. – Medium Distribution #3

For medium distributors, the major theme of their attitude on promoting health seemed to be equality. These food banks focused on providing their clients with equal opportunities to have fresh produce as their food secure peers. EDs of low distributing food banks also discussed promoting health.

I think it's our responsibility to try and provide them the most nutritious product that we can, given again the other instructions that each of us might have, whether they'd be funding restrictions or warehousing restrictions or distribution or whatever it might be. – Low Distribution #1

I think just to continue to help people just recognize a healthy choice not to make it seem like anyone is less than if they can't or don't want to. I just think that it's, along with distributing food to people who need it, it's a good thing to do. I just think it's a right choice and I just think it's a nice service to people who are receiving food in our lines to bring them along a little bit. – Low Distribution #2

I think the role that we want to play is we want to provide those communities, those individuals more access to that good nutritious food. – Low Distribution #3

For low distributors, there was more variety in their attitudes about promoting health. Most believed that they should promote access to nutritious foods, but they tended to talk more about doing this within their individual restrictions.

Some EDs seemed to waver in their attitude on promoting health and also had some quotes categorized as complacent about promoting health. A representative quote from each of these three EDs is illustrated below.

It's fun to introduce people to new foods but I also worry that if we're not there doing that education do they just take it home and throw it away and not eat it. I kind of balance it between things that I want to make sure they're eating but if we can educate them, get them to try new products that's great. I think we kind of fit in the middle. – Medium Distribution #3

The other is the amount of product that you're going to get from the food banks are very small percentage so it's not going to move the needle one way or another even if the only thing we were distributing was fresh fruits and vegetables. – Low Distribution #1

I think as food bank who makes concerted effort to get more food into the community and healthier food and produce, you hope that it would affect somebody else but I also know that we're a lot of times serving people one time a month. I'm not really sure with a direct line between how much access they have to our programs. – Low Distribution #2

These food banks with a complacent view of health included two of the three low distributors and one of the medium distributors, but no high distributors were categorized as having a complacent view of health.

Finally, EDs were categorized as having a hunger focused mission if they mentioned wanting to focus on ways to prevent hunger, “shorten the line,” or prioritize distributing a larger volume of food. Four EDs mentioned this perspective. Like having a complacent view of health, only EDs from low (1) or medium (3) distributors mentioned having this perspective. One of the quotes from a medium distributor [Medium Distribution #3] was also categorized as a complacent view of health and is quoted there.

They are saying, "Well, some food is better than no food." I would tend to agree. I think if someone is dealing with hunger on a daily basis having some sugary breakfast bars or something like that is not a bad thing, but I think everything is in moderation. You have to look at it from that point of view. – Medium Distribution #1

I'm a believer that until we have that over-abundance of food, getting calories and getting food to people who otherwise would go to bed hungry, that's not an awful thing. Again, it doesn't make me feel great. If I can get that foods to encourage percentage, keep moving that, picking that up, I feel better and better about it, but I'm not to the point where I would turn it away. – Medium Distribution #2

I think too, we've had a lot of discussions, both at the staff and at the board level, about the work of shortening the line and feeding the line and what our role is. I think organization or any place where we're comfortable with what our decision is, and that's really both, with emphasis on feeding the line, because that's what we do best. – Low Distribution #3

### **Chronic Disease Concern**

Four EDs indicated a high concern for chronic disease in their clients. All EDs of high distributing food banks mentioned having high chronic disease concern, and one ED of a low distributing food bank mentioned a high chronic disease concern. No EDs of medium distributors mentioned high chronic disease concern.

This whole notion that food is medicine and that many of the people in our community are sick. They're sick in ways that will cost us millions or billions of dollars and this is a very inexpensive smart way to address that problem. I think that's the biggest opportunity for our community. – High Distribution #1

On health issues, we know that a third of the households we serve has someone with diabetes. Two thirds have someone who struggles with hypertension. Many, I don't know the percentage off the top of my head but of course many, many families are struggling with obesity. – High Distribution #2

Diabetes, they talk about a lot when we're talking. I think heart disease. A lot of them talk about COPD as well, that come in. I think those are ... You look at the stats as to what they are but said, "The reality is the statistics are truly people that we see as our clients". They make up that stats. It's not just something that some get at a university doing a study. It is actually is people in our communities who have the same stories, many of the same stories. – High Distribution #3

Diabetes is a big issue. Because we have Native American reservations in our state, diabetes is pretty prevalent on our Native American reservations.

Childhood obesity. Probably not unlike most states in our nation, but I think our diabetes issue is probably a little more significant than some other states. – Low Distribution #3

Five EDs were categorized as having a medium level of concern for chronic disease in their clients. Often EDs were put into this category if they mentioned that their clients have about the same risk as the general population. All three medium distributors were put into this category along with two of the low distributors.

I think everybody in America really has an opportunity to eat better, eat healthier, get better exercise and deal with the obesity issue. – Medium Distribution #1

I know that we pretty much line up with national stats. Half of our client households have someone with high blood pressure, a quarter of them have someone with diabetes. As for other chronic illnesses, I don't know. – Medium Distribution #2

I guess I don't know for sure. I can guess though. We're very [REDACTED], we're very rural so I think it's a lot of the same issues that you would see in any other type of region like that. I'm sure there's obesity issues. I'm sure there's blood pressure issues, diabetes. We have heard a lot of issues in terms of senior health. – Medium Distribution #3



The low income people that we serve often times have chronic diseases, I think they are exacerbated because of the diet that's available to them and/or the diet that they can afford. – Low Distribution #1

I know we have many of the poorest, we call them parishes, counties. I just feel like it's probably pretty high. The food related diseases. I don't have that data on that. – Low Distribution #2

No EDs mentioned having a low concern for chronic disease in their clients.

### **Fruits and Vegetables and Health**

The EDs of four food banks were categorized as perceiving the association between FV consumption and health as high. No EDs of low distributing food banks were in this category.

We were probably one of the early food banks to draw some lines in the sand but in terms of making a commitment around the fresh fruits and vegetables but also saying no to certain types of food. – High Distribution #1

We have made this, in our new strategic plan, create a whole food as medicine initiative where we're trying to encourage, distribute, push fresh produce and other healthy foods. – High Distribution #2

I think everybody looks at it and says Americans should be eating healthier and healthy fruits and vegetables are just a major component of that. – Medium Distribution #1

I think we have a program at our after school sites where we have different curriculums around primarily vegetables now and we're expanding into fruits and whole grains where we are helping the students, the kids, learn about healthy

eating, and be introduced to different fruits and vegetables and other healthy food items that they never would have been introduced to. – Medium Distribution #2

The ED of one food bank was categorized as having a complacent view of the association between FV consumption and health. This quote was also categorized as having a complacent view of health and is quoted there [Low Distribution #2- page 59].

Four EDs did not mention their perspective on the association between FV and health.

### **Fruit and Vegetable Goals**

Four food banks mentioned having high (above 50% of total distribution) goals for fresh produce distribution. Three of these four food banks were in the high distribution category and one was a medium distributor.

I would say it's [goals for produce distribution] somewhere between where we are now. I don't know. Is it 50% because that's what my play is? We're not sure and we're just entering a new strategic plan. That's a question that we really hope through some work in the years ahead to try to understand better. – High Distribution #1

By the end of our three-year strategic plan, our goal is 65% of all the food we distribute will be nutritious perishable product but that's not all produce. I'm not sure about the numbers because we have a produce goal as part of that over three years. It's well over 50%. – High Distribution #2

I've heard some say they're almost like eighty-five percent, that that's mainly the thing they do. I, to me, maybe fifty-five to sixty percent possibly but, again, that's a short shelf life at home as well. If you have limited food and, again, you've got a short shelf life item, unless those individuals are freezing or canning, but most

likely the individuals that we're giving food to do not have the capacity, in some instances, to be able to do that. – High Distribution #3

[In response to the FV goals question] I'd say at least half if not more. – Medium Distribution #3

The remaining food banks all had goals for FV distribution in the medium category (11-49% of total distribution). One of these food banks categorized as medium [Low Distribution #3] did not state a specific percentage goal for fresh produce distribution, but the ED's overall statement and attitude was assessed as having medium FV goals. The five food banks categorized as having medium goals included all of the low distributors.

I have said this before, about ten percent of the overall food we distribute is probably fresh fruits and vegetables. If we could double that that would be a good start. – Medium Distribution #1

I mean I would like to see us grow that at least 50%, so somewhere close to 30% of our distribution. – Medium Distribution #2

I want to increase it, right now it's a little bit better than 10%. I could see it being at least 25%. – Low Distribution #1

I would love to be at a third of produce or more. – Low Distribution #2

As part of that, obviously feeding the line, we want to improve access and quantities of fresh fruits and vegetables that we're distributing. We've really made a fairly significant effort and some advances over the last, almost last year. We're

really dedicating manpower and resources into sourcing more food. – Low  
Distribution #3

## CHAPTER V

### DISCUSSION

The results of this study indicate distinct differences between the barriers, opportunities, innovative programs, and attitudes of different food bank leaders. These differences may help describe what allows some food banks to distribute high amounts of healthful food, in spite of having low access to fresh products in their area, and how to better help low distributors improve the nutritional value of the food they provide. In the context of the Community Disaster Resilience Model, the high distributing food banks are ones that reside in the center of the model, making the most of available resources, community connectedness, low risk and vulnerability, and good planning and procedures for healthful food distribution (Arbon, 2014). The call of this study is to find ways to bring other food banks into this area of resilience through addressing their specific barriers as well as using high distributors as example programs. Based on the ideas discussed by EDs, it appears that the community connectedness and planning domains were the areas where EDs saw opportunities to increase their resilience in providing health-appropriate foods in the food bank system.

## **Barriers**

Past research has primarily covered barriers to healthful food distribution in food banks, but has often focused on areas with high local availability of fresh produce (Campbell et al., 2013; Ross et al., 2013). Themes from the current study, while partially confirming themes found in past literature, indicated that for food banks with a low local availability of fresh products, problems with logistics- attaining fresh produce, agency capacity, transport- were more significant problems than they were in food banks with high availability, which normally had problems with attaining donor support (Campbell et al., 2013). One of the most striking contrasts with past literature was the fact that only one of the nine EDs in this study mentioned a perception that they would lose donors over healthful policies or calls for more fresh produce. This was one of the more common themes in many of the past studies on barriers to distributing nutritious products through food banks (Campbell et al., 2013; Shimada et al., 2013). This contrast could be due to the amount of time since that research was done and the recent push by Feeding America to promote healthful food distribution (Campbell et al., 2015). EDs may have seen other food banks successfully talk to donors about receiving healthful donations, and that may have allowed them to get through their initial reaction of perceived pushback from donors. Another explanation could be that the EDs of food banks with low availability of fresh produce might not have seen donor pushback as a barrier because they do not perceive refusing donations as an option; thus, they are not at risk of offending donors. The one counterexample to this idea would be the only food bank in this study [High Distribution #1] that enacted a policy for refusing unhealthful donations. This food bank saw success in donor support and may have served as a model for the other food banks to see that they might not lose donors over nutrition policies.

Other major themes were found in this study but did not appear to be major barriers in past research. For example, EDs in this study were focused on sourcing problems, such as lack of budget, lack of growers in the area, poor quality of donations from retailers, regional variation in produce growth, and the high cost of produce relative to other items. This study fills a critical gap

in the literature by addressing food banks in low availability areas (Shimada et al., 2013). As a whole, EDs of food banks in low availability areas believed that there is enough produce grown in the U.S., but acknowledge the barriers to receiving this produce based on regional variation in produce growth. The national retail pickup program, which connects food banks with local retailers to pick up donations of perishable items, has demonstrated successes and enabled new barriers. This program has been enacted for several years and in 2015 Feeding America started encouraging food banks to empower agencies to do the pickups, since sometimes food had to be picked up almost daily and was too close to spoiling to be transported from the retailer to the food bank, from the food bank to the agency, and then from the agency to the client (Letson, 2015). Since EDs in this study saw that much of the food donated from retailers was spoiled already or spoiled in the food bank, these food banks either were not allowing agencies to pick up retailer donations, or were not seeing great success.

Another issue not mentioned in past research was the problem with food bank competition for donated foods, especially fresh produce. EDs primarily saw this as a financial barrier because food banks increased the demand for the product, thereby driving up the costs of food. This process exacerbates the budget problems most food banks face when sourcing fresh produce. This illustrates a lack of community connectedness, in which food banks are less able to be resilient because of competition among themselves.

One major similarity between the current study and past research on barriers was the identification of agency cold storage capacity as a major barrier (Campbell et al., 2013; Handforth et al., 2013). While both high and low distributors mentioned these barriers, only high distributors mentioned that the shelf life of fresh produce at partner agencies was a problem. This is indicative of how all the EDs understood the necessity of cold storage capacity at partner agencies, regardless of current distribution, but high distributors understood the more practical problems that result from lack of storage capacity.

One of the most significant findings in this research was the difference between high and low distributors. High distributors often focused on problems further down the distribution chain and were more reflective of past literature. Low distributors, on the other hand, were unique from past research in that their barriers were primarily in sourcing, financing, and transporting fresh produce or other healthful foods. Future research will need to find ways to overcome budget and transportation barriers in order to enable low distributing food banks to grow their healthful food distribution.

### **Opportunities**

There is an overall lack of past comprehensive studies on opportunities for increased produce or healthful food distribution in the Feeding America system. Some studies have found opportunities for food banks to participate in gleaning, gardening, and farming activities (Vitiello et al., 2014). These programs were not widespread themes in the current study. One ED [Medium Distribution #1] mentioned opportunities or innovative programs in both gleaning and gardening, but few other EDs saw opportunities in these areas. Gleaning was more commonly mentioned than garden programs, potentially because it utilizes existing community connectedness rather than requiring the start of a new program. One reason that these programs may not have been mentioned often in this study is that since these food banks were in low availability areas the environment may not have been right for growing fresh produce at all.

Past research has framed opportunities in healthful food distribution as ways to overcome current barriers, such as lack of metrics. Past research saw opportunities for major policy and practice recommendations but didn't describe many food bank-level changes (Shimada et al., 2013). Recommended changes included creating tax incentives for healthful food donations, creating a national nutrition profiling system, setting standard nutrition guidelines for food bank food, and changing the Feeding America metrics used to measure success (Shimada et al., 2013). Like the current study, this indicates major opportunities in the planning domain. However, only one ED in the current study mentioned ideas for Feeding America to change their metric of



success. The current study focused on opportunities which are more proximal to the food bank EDs, as expected since EDs were the only ones interviewed. Opportunities were focused on partnerships with community agencies, grants, ideas for future research, and advocates for fresh produce distribution. Most of these factors fit within the community connectedness domain of the CDRM, with advocates also being a part of available resources, and future research being categorized as planning and procedures (Arbon, 2014). Partnering with community agencies, especially healthcare organizations, was a commonly cited opportunity or innovative program. This indicates how EDs see healthcare partners as essential in funding or supporting a food bank's increased focus on healthful food distribution. While this theme was not mentioned in past research, this could be because of the different level of focus in past research. Since past literature was focused more on national solutions, opportunities looked at national partnerships (Shimada et al., 2013), while the current research saw opportunities in partnering with local hospitals and health care systems.

Opportunities for sourcing were also mentioned in this study but were not the topic of many past studies. In December of 2016, Feeding America published a press release announcing funding for mixing centers, which are intended to increase access to and decrease cost of fresh produce ("Cargill donates \$3 million over three years to Feeding America to support nutrition solutions," 2016). Most produce mixing centers have recently launched and others are in development. Mixing centers will provide a way to centralize produce distribution to food banks for a region and will allow food banks to order mixed loads, rather than having to purchase an entire semi-truck load of one product. This study indicates that EDs are hopeful that mixing centers will be a solution to budget barriers in distributing a variety of produce. The U.S. supply of fresh produce was also seen as an opportunity, likely due to Feeding America's emphasis on the 6 billion pounds of fresh produce wasted each year ("Cargill donates \$3 million over three years to Feeding America to support nutrition solutions," 2016). Food bank sharing, like mixing

centers, is focused on increasing community connectedness in order to allow partnerships in distributing more fresh produce.

Client factors were identified as major opportunities in this study. This aligns with past research, which found that clients desire fresh produce second only to their desire for meats (Campbell et al., 2011; Verpy et al., 2003). It appears that client demand for fresh produce continues to be an opportunity, since all EDs in this study believed that clients had a high desire for fresh produce. Food banks plan on taking advantage of this opportunity through education of clients on how to prepare fresh produce, with client education programs mentioned as a major opportunity. Past research has found that nutrition education and recipe demonstrations at food banks can increase the amount of fruits and vegetables consumed in clients' homes ("Healthy food initiatives in food banks," n.d.). Feeding America provides information on recommended evidence-based nutrition education strategies (Feeding America, n.d a). These strategies are illustrated in the Figure 10.

## Evidence Based Nutrition Education Strategies Promoted by Feeding America

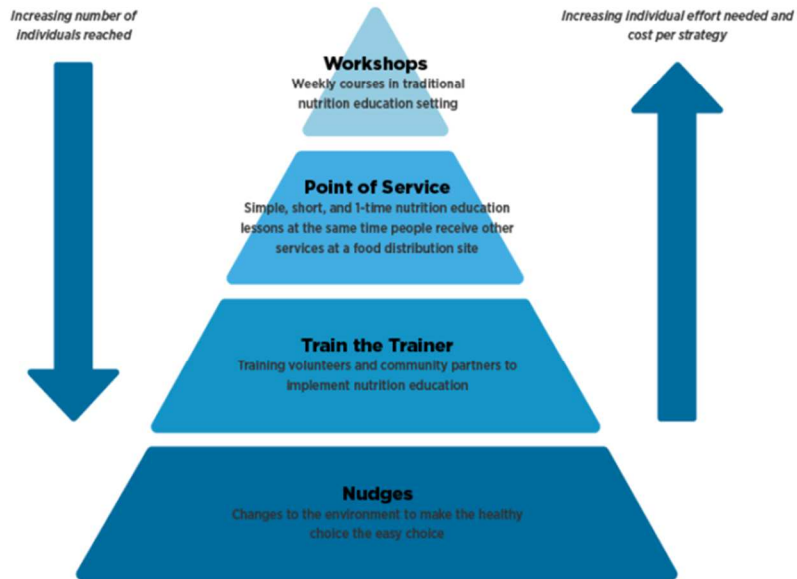


Figure 10: Educational Strategies from Feeding America

This indicates that Feeding America is already encouraging client education strategies which EDs view as opportunities. Direct distribution of produce from the food bank to the clients was mentioned often, especially as an innovative program.

There were some differences in perceived opportunities between high and low distributors. EDs of high distributing food banks tended to see opportunities that were more proximal to the food bank, while EDs of low distributing food banks tended to see opportunities for national policies or Feeding America. One reason for this could be that high distributors are already distributing more and can see what needs to be done in order to increase distribution further. Low distributors, however, may need some help getting started as produce distributors. This may require national policies or Feeding America involvement. For example, low

distributors were the ones to identify opportunities for Feeding America to use nutrition focused metrics to reward produce distribution.

### **Innovative Programs**

Innovative programs in sourcing typically included state-wide programs for purchasing or partnering with farmers. Several states have programs that help food banks acquire fresh produce. California's Farm to Family program is one of the most well studied; it essentially provides a link between local growers and food banks around the state (Ross et al., 2013). This type of program is not well suited for low availability food banks since there are not many growers in their area. However, states with a low availability of fresh produce could use the state programs modeled in this study as an example instead of the Farm to Family program. For example, state programs in this study had funds set aside for healthful foods that were used to purchase excess produce from growers. The added component of state funds is helpful in these areas since there is not as much excess as there is in California, and produce may have to be transported in.

Innovative programs in handling typically involved processing foods into boxes or into preserved or sellable items. The pilot study on diabetes-appropriate food boxes from Feeding America indicates that boxing food can improve health and be well accepted by clients (Seligman et al., 2015). While the food banks in this study did not mention making disease-appropriate food boxes, many already have boxing programs that could be transformed to look more like the pilot study. This is one way to promote health in food banks that would not require much change from the innovative programs they are currently using.

Few food banks had innovative programs in the outbound and agencies domain, except for programs that increased agency capacity. This helps to overcome agency cold storage as one of the major barriers mentioned in this study. An analysis of food banks primarily in North Carolina found that one of their best practices was increasing agency capacity through tiering, providing refrigeration, and providing education (Edwards, 2014).

Innovative programs in distribution typically involved food banks' taking more responsibility in getting food to clients. This could include mobile distributions in areas without a food pantry or produce drops at food pantries. Many food banks around the country utilize mobile pantries, often at schools, underserved areas, or clinics (Edwards, 2014). However, the current study found that these programs were more common in high distributors than in low distributors. In this study high distributors tended to use more top-down policies that require food bank resources, while low distributors employed more bottom-up policies such as empowering agency volunteers, running a food pantry in the food bank, or allowing agencies to come shop for the fresh produce. This difference was most prevalent in partnerships with the healthcare community. Feeding America described three general ways that food banks could partner with healthcare: addressing food insecurity at the healthcare setting, addressing health at the food distribution setting, or connecting clients to healthcare (Feeding America, n.d. c). The most commonly mentioned programs in this study were ones that addressed food insecurity at the healthcare setting by providing food onsite through a mobile distribution. However, no low distributors mentioned partnering with healthcare sites for distribution of fresh produce. Feeding America recommends that food banks employ programs that distribute food or information about food banks at healthcare sites, along with other partnerships with healthcare providers for education and screening (Tobin, Downer, Prendergast, & Marshall, 2016). Future research should look at ways to empower low distributing food banks to partner with medical centers in programs similar to the Fresh Rx program in Oklahoma (Regional Food Bank of Oklahoma, n.d.).

Several innovative ways to plan for fresh produce distribution were mentioned by EDs in this study. For example, fundraising with health in mind was one program that sought to address budget issues for healthful foods. Feeding America has created an article for food banks on partnering with healthcare that mentions the opportunities for new funders from insurance agencies, medical providers, and hospitals when food banks employ health promoting practices

(Tobin et al., 2016). Thus, the EDs interviewed in this study were utilizing or planning on utilizing a recommendation put forth by Feeding America.

Other food banks participated in tiering. While this was partially discussed under outbound and agencies, tiering involved separating out agencies by their capacity and either focusing the majority of efforts on the high capacity agencies or on improving low capacity agencies. The study on North Carolina food banks found that both forms of tiering were mentioned as a best practice (Edwards, 2014). Shortening the line, or decreasing client need for food bank food through job training or SNAP assistance, was also found to be an important practice by EDs interviewed. This language is used throughout the Feeding America network, with both the Second Harvest Food Bank of Central Florida and the San Antonio Food Bank describing programs to “shorten the line” through job training (Cooper, 2014; Second Harvest Food Bank of Central Florida, 2016). These programs, while not necessarily promoting health in the food bank, may help deal with the more systemic issues of poverty.

Finally, EDs mentioned ideas for different metrics to measure success. Suggestions included using Foods to Encourage in addition to PPIP and the meal gap, counting only nutritious pounds as pounds distributed, or using the CHOP system. Foods to Encourage is currently a recommendation and not a requirement, since many food banks do not have detailed recording systems and cannot measure exact amounts of Foods to Encourage (Feeding America, 2015). Improving the recording systems in all food banks would be the first necessary step in creating a national metric or in utilizing Foods to Encourage as a national metric. One baby step that EDs in this study mentioned was that they only used purchasing dollars to buy healthy foods, but did not put restrictions on what type of foods could be donated. While this would not work for food banks that receive all of their food from donations, it might be a first step towards a nutrition policy for food banks that have extensive purchasing programs.

In all, EDs had many ideas for innovative programs, the majority of which are already encouraged by Feeding America. One that showed the most promise was partnering with

healthcare, in which healthful food distribution is coordinated with a clinic setting. Major next steps are to find ways to help low distributing food banks to partner with healthcare or participate in more direct distribution and to encourage all food banks to have some type of recording policy for types of food.

### **Leadership Attitudes**

According to the stage theory of organizational change, senior administrators are especially important in the early stages of a change; they help raise problem awareness and define the problem (Butterfoss, Kegler, & Francisco, 2008). This theory frames the importance of EDs in catalyzing the change towards nutrition focused food banking. The attitudes of the leaders in this study reflect the importance of their buy-in to nutrition policies. For example, EDs of high distributing food banks exhibited passion and felt responsibility for promoting health in their food banks. EDs of low distributing food banks, on the other hand, focused on promoting health within their restrictions; they saw it as a good thing to do but did not exhibit passion. While a cause-and-effect relationship cannot be established based on this characterization alone, it does indicate a potential area for improvement. With training and education, EDs of low distributing food banks might feel more passion for healthful food and produce distribution, which in turn could lead to organizational change.

Some areas in which EDs of low distributing food banks seem to need education include the disparities present in their client population and the importance of fresh produce in attaining health. Two of the three EDs of low distributing food banks were categorized as having a medium level of concern for client chronic disease risk, meaning that they saw clients' risk as about equal to the American population as a whole. Food insecure populations have a disproportionately high risk of diet-related chronic diseases (Seligman et al., 2010), and food bank level interventions have been found to have an effect on diabetes self-management (Seligman et al., 2015). EDs of these low distributing food banks need to be aware both of the prevalence of the problem and of their ability to have an effect on it. EDs of low distributing food banks also did not set high goals

for themselves in produce distribution, in contrast to high distributors. One aspect of this could be realism on the part of low distributors. Based on their restrictions, high distribution of produce may not be possible. However, the barriers keeping low distributors from distributing fresh produce should be addressed and their goals reset at a higher level once it is attainable.

### **Implications for Policymakers and Feeding America**

This research reveals clear barriers that must be overcome in order for food banks to promote health through fresh produce distribution. In addition, leader-identified opportunities revealed intense interest in mixing centers, which are in development at Feeding America, and in direct distribution practices, especially when partnered with healthcare. Ways to help low distributing food banks overcome their barriers and start to be involved in these innovative programs and opportunities should be explored by policy makers and by Feeding America. Low distributing food banks must be prepared for the problems they will encounter when they begin distributing more produce. Based on this research, many EDs of low distributing food banks did not seem to be aware of some of the downstream barriers since they are not yet sourcing or distributing enough produce to spoil in partner agencies or cause issues with transporting it to their partners. One way to help in this education component is to first provide capacity grants for partner agencies in order to expand their cold storage and perhaps the number of days that they are open in order to facilitate produce distribution. Once agencies have capacity, training of food bank leaders in how to source and handle fresh produce is necessary. For example, the hard 7 could be extended to also include fruits and vegetables such as sweet potatoes, watermelon, winter squash, and cabbage. These are all relatively hardy and also provide a greater variety of nutrients, especially vitamin A (Higdon, Drake, Delage, Ross, & Tan). While this research project is focused on fresh produce, other forms of produce could be used as alternatives that are more shelf stable. For example, education could be given to food banks on choosing low sodium canned vegetables, fruits canned in juice, dried products, and frozen products. MyPlate recommends that half a person's plate be fruits and vegetables, but does not necessitate that those



be fresh (United States Department of Agriculture, n.d.). Increasing overall percentage of FV distribution may be a more attainable goal for low distributing food banks with low capacities than trying to increase fresh produce distribution.

Once food banks are prepared to distribute more fresh produce through increasing agency capacity and staff training, sourcing hurdles must be overcome for low availability food banks. Transport was a major cost in sourcing. Because fresh produce growth varies by region, low availability food banks may not have local growers and even donated produce may include transportation costs. Retailer donation programs or gleaning from farmers' markets may play a much greater role in low availability food banks than they would in others. In addition, the frequency with which mixing centers were cited in this study indicates that EDs view this as a potential solution to their sourcing problems. Mixing centers will allow them to receive mixed loads that may help justify the costs of transport. Feeding America also allows donors to help subsidize transportation costs for food banks (Feeding America, n.d. b). One way for Feeding America to increase access to fresh produce in low availability areas could be to focus these subsidies on those food banks that have the highest transportation costs. EDs in this study did not mention Feeding America's subsidies on transport costs, so they may not be seeing enough of an impact from them to make a difference in their costs. EDs may also have not noticed the impact of transport subsidies if they have always been available. Overall, policy changes in Feeding America should focus on increasing the capacity of low distributing food banks and their partner agencies, along with helping in sourcing of fresh produce in low availability areas.

### **Implications for Future Research**

Since one of the questions asked in interviews focused on ideas for future research, many EDs gave direct thoughts on research implications. For example, several EDs wanted to see research quantifying the amount of fruits and vegetables necessary to have a health effect or the amount of people healthful food distribution could effect. EDs could likely use this research to help sell health messages to donors, or to catalyze policy change. Research on food waste,

another suggestion from EDs, could also help frame the call for more fresh produce distribution to appeal not only to health-oriented donors but also to environmentally-conscious groups.

Results from this study call for more research on opportunities, innovative programs, and leadership attitudes. Specifically, research should indicate opportunities for low availability food banks to overcome the barriers they face. Program spotlights and case studies should characterize food banks, such as the three high distributors in this study, which are providing large volumes of healthful foods in spite of local barriers. These spotlights could later be used in toolkit and education development for EDs and staff in low availability areas who are not having as much success in produce distribution.

It appeared that high distributing food banks utilized state-wide programs to help in produce distribution. Further research on these programs and ideas on how to implement them in other states could help increase produce distribution in the Feeding America network. Further research should also be done on the practicality of programs that process donated fruits and vegetables in the food bank to produce longer-lasting or sellable items. While several food banks mentioned ideas for doing this, and one had found great success [Medium Distribution #3], more research should be done on the cost-effectiveness of this strategy. Research should describe actual donor attitudes and the standardization of nutrition guidelines. Only one food bank in this sample had a nutrition guideline to refuse unhealthy donations; they had met with success and donor support. Future research should focus on donors' attitudes and on describing practical strategies for how food banks can maintain donor support in spite of refusing some donations. In addition, standardized nutrition profiling tools or metrics should be developed and evaluated if current programs such as CHOP and Foods to Encourage are deemed ineffective.

The differences seen in this study between leadership attitudes in high and low distributors should be further described. Future research should focus on finding the specific differences in leader attitudes and developing interventions that can decrease complacency in health promoting intention in EDs of low/medium distributing food banks. The results of this

study are reminiscent of the elicitation phase of the theory of planned behavior (TPB). The TPB indicates that an individual's attitudes, subjective norms, and perceived control affect their intention to perform a behavior that in turn results in performance of the behavior (Montano & Kasprzyk, 2008). This study indicated that there are some areas where EDs do not have much perceived control, such as the cost of produce or the availability of produce in their area. However, the study also revealed that leaders who were the most passionate about promoting health were in food banks that distributed a high amount of Foods to Encourage. This is an indicator of ED attitude. One way to change this would be to help leaders to view fresh produce as an essential component of chronic disease prevention. More research should be done to confirm this, as well as indicate what types of messages leaders would respond best to.

### **Scope and Limitations**

This study is limited in scope based on several factors. First, only Feeding America food banks were open for sampling within the larger study. While Feeding America does include the majority of food banks in the U.S. (~80%), this may limit the generalizability to other, independent food banks (Shimada et al., 2013). Second, the data subset analyzed in this study controlled for local availability of fresh produce by only using interviews from EDs of food banks with low availability. This limits applicability to only those food banks with the same level of availability. The benefit of doing this, however, is in preventing unnecessary focus on factors outside of Feeding America's control, such as local agriculture. Overall, this study analyzed a small number of interviews (9), which also limits its generalizability. In addition, the overall study used only one interview from each of the categories, preventing generalization or measurement of saturation within each category. This is a major limitation in the study since interviews could be in atypical food banks within each category, but there would be no way to know.

## **Conclusions**

Feeding America has an opportunity to affect the health of the food insecure population, which experiences disparities in diet-related chronic disease. Based on comparisons with past research, low availability food banks face unique challenges to distributing fresh produce. In order to increase the distribution of fresh produce and the health promoting capacity of these food banks it is necessary to address sourcing issues, such as high transportation costs, as well as prepare partner agencies and clients to receive fresh produce through education and increased refrigerated storage. Leadership attitudes were related to actual distribution of healthful products in this study and may be an important part of intervention development to increase fresh produce distribution. Based on this study, more education, resources, and partnerships with healthcare organizations are necessary for low availability food banks to become a health promoting aspect of the food environment for food insecure individuals.

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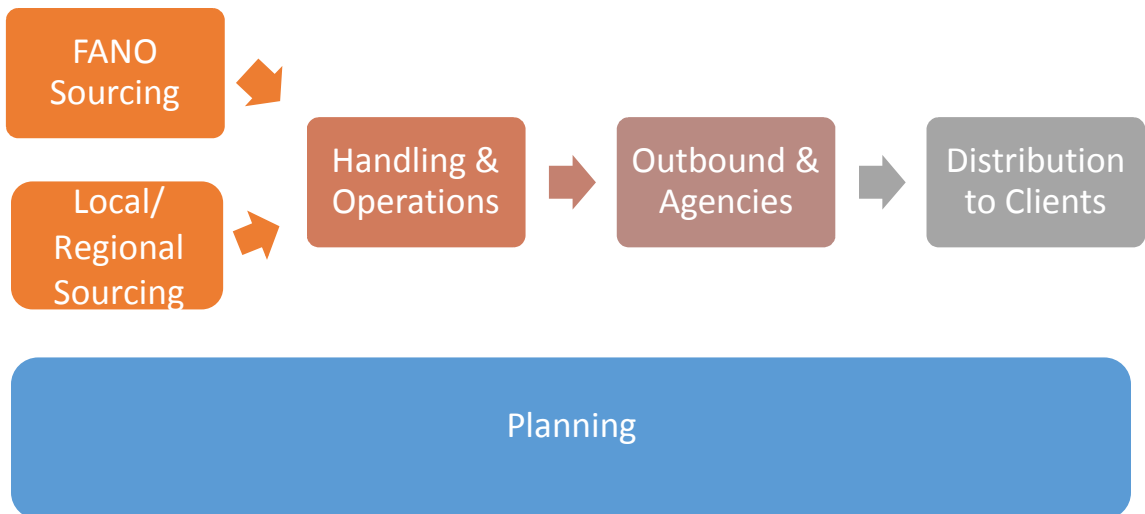
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## APPENDICES

### Appendix A



## Appendix B

### Interview Guide

#### Reminders:

1. You may not know the precise answer to some of these questions. That is fine- I am interested more in understanding your perspective than in understanding any specific details about your food bank.
2. I do not work for Feeding America, although we do share some grants (including this one).
3. Neither your name nor your food bank's name will be attached to the transcript of this interview.
4. Nothing that you say in this interview can jeopardize your relationship with UCSF or Feeding America.
5. I will begin by asking about some basic characteristics about your food bank since we will not know on the written transcripts who I am talking to.

#### Interview Questions:

1. How long have you been in the world of food banking?
2. Can you briefly describe your food bank (FB)'s current distribution of fresh FV?
  - a. [If not offered] Do you know what percent of your total distribution is fresh FV?
3. Approximately what percentage of your current budget is spent acquiring food (all food streams), not including transportation?
4. Does your food bank service area include FV growers, producers, or processors?
5. In your opinion, does the US have enough FV available to meet the needs of every FB in the US, or do you feel as if FBs must compete for a scarce resource?
  - a. [If don't address immediate service area] To what extent do you feel your FB has access to all the FV it can use? Why or why not?
6. What is your perception of the burden of chronic disease among clients served by your FB? [If asked: chronic diseases include obesity, diabetes, hypertension, etc.]
  - a. Do you think as a FB you are in a position to contribute to the health of your clients or community, or do you feel as if your mission is really focused on hunger?
  - b. To what extent do you think that by distributing more FVs you can make an impact on your clients' or community's health?
7. Under ideal conditions, how much of your FB's distribution would be fresh produce?
8. Within your FB, who are the key people who advocate for FV distribution, if any? Please think here of yourself and all of your stakeholders: growers, donors, board

of directors, operations staff, programs staff, agency relations staff, development staff, agency volunteers, and clients.

- a. Who are the people who have other priorities, or might feel less strongly about advocating for increased FV distribution?
9. If you had to point to the key bottleneck for your FB in distribution of fresh FVs, which would it be: sourcing, handling/operations, delivery to agencies, distribution to clients, or planning? [show domains of FV distribution]
10. [Sourcing] Do you feel as if the net cost of purchasing fresh produce is relatively high or relatively low for your FB? What increases or decreases costs? [Please think of costs broadly]
11. [Sourcing] What role do you think Feeding America should have in produce distribution?
12. [Sourcing] Do you feel as if Feeding America offers you enough opportunity to source FVs?
  - a. What are they doing well at in terms of produce distribution?
  - b. What could they do better at?
13. [Sourcing] Is there anything Feeding America is doing or thinking of doing that would prevent you from distributing more FVs?
14. [Handling and Operations] [Insert question, such as what does the handling of fresh foods look like at your organization?]
15. [Outbound and Agencies] Can you briefly describe the capacity of the agencies you serve for distributing fresh FVs?
16. [Outbound and Agencies] Do your agencies pay a shared maintenance fee for fresh FVs from your FB or do they receive it for free?
  - a. How does this compare to the way your agencies receive food other than FVs from your FB?
17. [Outbound and Agencies]
  - a. [if FB currently distributes fresh produce] What is your perception of FV demand at the level of the agency?
  - b. [if FB currently does not distribute fresh produce] If you were to start offering FV distribution what is your perception of what agency demand would be like?
18. [Distribution to Clients] In your perception, what is client demand for FVs at the pantries your FB distributes to?
19. [Planning] Has your FB done any fundraising around the issue of distribution of healthier foods or F2E?
  - a. [if hasn't been answered already] Do you highlight or spotlight your FV distribution with your donors?
  - b. [if yes] What do you think made these fundraising efforts successful or not successful?

- c. Has distribution of healthier foods changed your relationship with donors of non-perishable product? Have you secured any new donors because of a focus on distribution of healthier foods?
  - d. What additional data or research would help you make the case for securing more healthy food donations?
20. [Planning] Has your board of directors ever been involved in discussions around F2E or produce distribution?
- a. [if yes] In general, how supportive is the board of directors around the issue of distribution of FVs or healthier product (F2E)?
21. [only if time] Has your FB ever discussed with a food donor a desire for healthier food product? If so, how have those conversations gone?
22. [if not already answered] Can you share a best practice of how your FB is currently distributing produce or healthier food?
- a. What are key barriers you have had to overcome and how did you do it?
  - b. [only if time] What is working best?
23. What are key opportunities that you see at your FB for increasing FV distribution, the “low hanging fruit”?
24. Has your FB ever considered implementing a guideline or adopting a standard practice on the nutritional quality of foods it distributes?
- a. [if yes] Were there concerns raised, and if so what were they?
  - b. [if guideline/practice in place] Are there plans to revise the guideline or practice in the future?
25. What do you think a FB’s responsibility should be in facilitating adequate FV intake among its clients?
26. What is your FB’s biggest strategic priority over the next 3-5 years?
27. [if time] What do you think food banking will look like in 10 years?
28. Do you have anything else you would like to add?

Closing:

We have come to the end of the interview. I would like to thank you again for your participation in this project. Please feel free to email me if you have any further comments or any additional questions about the project.

### Appendix C

Code	Definition	Examples	Questions
SOURCING	Sourcing describes obtaining fresh FV at the FB level. This can be from Feeding America National Organization (FANO), from donations, from purchasing, or any other method.		
SOURC:fano	Includes general comments on sourcing FV from Feeding America, but does not include comments about specific codes below.	<ul style="list-style-type: none"> <li>• Amount of FV FANO supplies</li> <li>• FANO's role in FV provision</li> </ul>	11,12,13
SOURC:general	Includes general comments about sourcing without reference to specific codes or to FANO vs. local sourcing.	<ul style="list-style-type: none"> <li>• "Sourcing is our primary barrier"</li> </ul>	
SOURC:fano_handlingfee	Includes comments about the handling fee for ordering FV from Feeding America.	<ul style="list-style-type: none"> <li>• Cost of ordering fresh FV from FANO</li> <li>• Handling fee as a barrier to FV ordering</li> </ul>	10,11,12,13
SOURC:fano_choicesystem	Includes comments about how the FANO choice system affects FV sourcing. Examples include	<ul style="list-style-type: none"> <li>• Choice system allows for more ordering of FV</li> </ul>	11,12,13

	statements about the choice system allowing for more or less ordering of FV.	<ul style="list-style-type: none"> <li>Choice system makes it difficult to be rewarded for fresh FV distribution</li> </ul>
SOURC:fano_matchmakersystem(op)	Includes comments about opportunities for FANO to promote fresh FV distribution based on the FANO produce matchmaker system.	<ul style="list-style-type: none"> <li>Allowing for a greater variety of ordering</li> <li>Potential faster turnaround for produce</li> </ul>
SOURC:fano_matchmakersystem(bar)	Includes comments about barriers from/for the FANO produce matchmaker system.	<ul style="list-style-type: none"> <li>Lack of produce in the region</li> <li>Lack of understanding of the new system</li> </ul>
SOURC:fano_matchmakersystem(current)	Description of current use of the FANO produce matchmaker system	<ul style="list-style-type: none"> <li>New process, learning how to use it</li> <li>Comments about the switch and sourcing from the matchmaker system</li> </ul>
SOURC:fano_consortiums (op)	Food banks that are a part of a consortium have agreed that, regardless of their current policies, they will take food from FANO which other food banks have rejected to maintain relationships with national donors. Opportunities would describe ED identified ways that this could improve FV distribution.	<ul style="list-style-type: none"> <li>Potential to retain donors, maintain donor relations</li> <li>Potential to use this to quickly move produce which is starting to rot</li> </ul>

SOURC:fano_consortiums(bar)	Describes ED identified barriers to fresh FV distribution based on consortiums.	<ul style="list-style-type: none"> <li>• Potential difficulty distributing to agency (poor quality items)</li> <li>• Low nutritional quality of foods received through the consortium</li> <li>• Will make it harder to have a high FV% distribution</li> </ul>
SOURC:fano_consortiums(current)	ED comments on current membership in consortiums or the current use of consortiums.	<ul style="list-style-type: none"> <li>• Has made F2E lower within that food bank</li> </ul>
SOURC:fano_mixingcenters	Regional location where local produce sources can mix loads before distribution to FBs. This is in development at FANO.	<ul style="list-style-type: none"> <li>• Comments about the opportunities that mixing centers will give food banks for increased variety of fresh FV distribution</li> </ul>
SOURC:fano_solicitors(op)	Includes comments about opportunities for FANO to promote fresh FV distribution based on their Regional Produce Managers or food solicitors. This would include specific ED identification of opportunities or potential.	<ul style="list-style-type: none"> <li>• How FANO solicitors could create more connections with donors 11,12,13</li> <li>• How FANO solicitors could change what they solicit to be more fresh FV</li> </ul>
SOURC:fano_solicitors(bar)	Includes ED identified barriers for FANO to promote fresh FV	<ul style="list-style-type: none"> <li>• Solicit donors that FBs don't want 11,12,13</li> </ul>



	distribution based on Regional Produce Managers or solicitors.	<ul style="list-style-type: none"> <li>• Solicit donors that FBs would rather find independently</li> </ul>	
SOURC:fano_solicitors(current)	Includes comments about the current state of Regional Produce Managers or solicitors without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• How FANO solicitors have connected the FB to donors</li> <li>• Which donors FANO solicitors have connected the FB to</li> </ul>	11,12,13
SOURC:fano_transport(op)	Includes comments about ED identified opportunities for FANO to improve fresh FV distribution through transportation policies.	<ul style="list-style-type: none"> <li>• Potentially providing a transportation subsidy</li> <li>• Potentially providing FANO transportation free of charge</li> </ul>	11,12,13
SOURC:fano_transport(bar)	Includes comments about ED identified barriers for FANO to improve fresh FV distribution due to transportation policies.	<ul style="list-style-type: none"> <li>• FANO's transportation fees prevent ordering of fresh FV</li> <li>• Lack of FANO money to help provide transport</li> </ul>	11,12,13
SOURC:fano_transport(current)	Describes the current state of FANO transportation policies for fresh FV without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Description of price of FANO transport</li> </ul>	11,12,13
SOURC:fano_sharing(op)	Describes ED identified opportunities from the FANO sharing program between FBs for fresh FV distribution.	<ul style="list-style-type: none"> <li>• Ideas for ways to share fresh FV more effectively</li> <li>• Ideas for places to share fresh FV with</li> </ul>	11,12,13

SOURC:fano_sharing(bar)	Describes ED identified barriers to FV distribution that come from the FANO sharing program.	<ul style="list-style-type: none"> <li>• Transportation costs from sharing program</li> <li>• Long transit times between sites</li> </ul>	11,12,13
SOURC:fano_sharing(current)	Describes the FANO sharing program for fresh FV without mention of barriers or opportunities.	<ul style="list-style-type: none"> <li>• Which other FBs the FB shares with</li> <li>• How much the sharing program currently costs</li> </ul>	11,12,13
SOURC:fano_nationalrelationships(op )	Describe potential FANO national relationships with donors and the ED identified opportunities relationships could provide in fresh FV distribution. This does not include FANO solicitors, but only FANO relationships with donors.	<ul style="list-style-type: none"> <li>• Potential national relationships with produce donors</li> </ul>	11,12,13
SOURC:fano_nationalrelationships(bar)	Describes ED identified barriers for fresh FV distribution from FANO's national relationships with donors.	<ul style="list-style-type: none"> <li>• National relationship requiring/encouraging acceptance of unhealthy donations</li> <li>• FANO reactions to rejection of national partners' donations</li> </ul>	11,12,13
SOURC:fano_nationalrelationships(current)	Describes current FANO national relationships with donors and the relationship between that and fresh	<ul style="list-style-type: none"> <li>• How much produce comes from national relationships</li> <li>• Naming national partners</li> </ul>	11,12,13

	FV distribution without mentioning opportunities/barriers.	
SOURC:fano_innovativeprograms	Describes ideas for new and unique programs that FANO could implement to promote fresh FV sourcing.	<ul style="list-style-type: none"> <li>• FANO transport between FBs</li> <li>• FANO transportation subsidy</li> <li>• FANO nutritional requirements for national donors</li> </ul>
SOURC:local_USsupply(op)	Includes comments about ED identified opportunities in the supply of fresh FV in the overall US.	<ul style="list-style-type: none"> <li>• How to utilize the total 5 US supply</li> <li>• ED views US supply as a resource/opportunity</li> </ul>
SOURC:local_USsupply(bar)	Includes comments about ED identified barriers in the supply of fresh FV in the overall US.	<ul style="list-style-type: none"> <li>• “US does not produce 5 enough”</li> </ul>
SOURC:local_USsupply(current)	Includes other comments about US supply of fresh FV besides opportunities and barriers.	<ul style="list-style-type: none"> <li>• How US supply affects 5 this FB</li> </ul>
SOURC:regionalvariation(bar)	ED identifies problems transporting produce from regions with high availability into their region.	<ul style="list-style-type: none"> <li>• “The problem is transporting produce from California/Florida to my FB”</li> </ul>
SOURC:local_FBcompetition	Includes comments about overlapping service areas or competition between	<ul style="list-style-type: none"> <li>• Other FBs using 4,5 regional supplies</li> </ul>

	FBs for limited numbers of FV producers in their areas.	<ul style="list-style-type: none"> <li>• Lack of access due to competition, not lack of growers</li> </ul>	
SOURC:local_grower_other(op)	Includes descriptions of ED identified opportunities for sourcing fresh FV from local growers or producers in ways other than donations.	<ul style="list-style-type: none"> <li>• Idea to trade compost for fresh produce</li> <li>• Idea to purchase from growers with grant money</li> </ul>	4,5
SOURC:local_grower_other(bar)	Includes descriptions of ED identified barriers for sourcing fresh FV from local growers or producers in ways other than donations.	<ul style="list-style-type: none"> <li>• Lack of money for purchasing from available growers</li> <li>• Lack of growers in the area</li> <li>• Short growing season in the area</li> </ul>	4,5
SOURC:local_grower_other(current)	Describes current sourcing of fresh FV from local growers or producers in ways other than donations.	<ul style="list-style-type: none"> <li>• Which farms the FB purchases from</li> <li>• Current trading practices with farms</li> </ul>	4,5
SOURC:local_processor_other(op)	Describes ED identified opportunities for sourcing fresh FV from local processors in ways other than donations.	<ul style="list-style-type: none"> <li>• Potential relationships with processors</li> <li>• Potential purchasing from local processors</li> </ul>	4,5
SOURC:local_processor_other(bar)	Describes ED identified barriers for sourcing fresh FV from local processors in ways other than donations.	<ul style="list-style-type: none"> <li>• Lack of processors in the area</li> <li>• Only unhealthy food processed in the area</li> </ul>	4,5

SOURC:local_processor_other(current)	Describes current sourcing of fresh FV from local processors in ways other than donations.	<ul style="list-style-type: none"> <li>Amount of purchasing from processors</li> </ul>	4,5
SOURC:local_retailer_other(op)	Describes ED identified opportunities for sourcing fresh FV from local retailers in ways other than donations.	<ul style="list-style-type: none"> <li>Ways to purchase fresh FV from local retailers</li> <li>Potential reduced prices for FB purchasing</li> </ul>	4,5
SOURC:local_retailer_other(bar)	Describes ED identified barriers for sourcing fresh FV from local retailers in ways other than donations.	<ul style="list-style-type: none"> <li>High price of local FV retailers</li> <li>Lack of local FV retailers</li> </ul>	4,5
SOURC:local_retailer_other(current)	Describes current sourcing of fresh FV from local retailers in ways other than donations.	<ul style="list-style-type: none"> <li>Current purchasing from local retailers</li> <li>Ways currently purchasing fresh FV (online ordering, volunteer shopping)</li> </ul>	4,5
SOURC:local_grower_donate(op)	Describes ED identified opportunities for donations of FV based on the growers or producers in the FB's service area.	<ul style="list-style-type: none"> <li>Many FV growers in the area</li> <li>Potential relationships with growers</li> </ul>	4,5,8,9,10
SOURC:local_grower_donate(bar)	Describes ED identified barriers to providing fresh FV from donations	<ul style="list-style-type: none"> <li>Lack of FV growth in the area</li> <li>Grower attitudes toward donating</li> </ul>	4,5,8,9,10

	based on the growers or producers in the FB's area.	<ul style="list-style-type: none"> <li>• Language/cultural barriers</li> <li>• Donation of rotten food</li> <li>• Short growing season in the area</li> </ul>
SOURC:local_grower_donate(current)	Includes other references to the food produced and donated in the FB's areas currently, without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Amount of produce donated from local growers 4,5,8,9,10</li> <li>• Description of FV currently donated</li> </ul>
SOURC:local_processor_donate(op)	Describes ED identified opportunities for donations of FV based on local processors.	<ul style="list-style-type: none"> <li>• Local FV processing plants which could be a partner 4,5,8,9,10</li> </ul>
SOURC:local_processor_donate(bar)	Describes ED identified barriers for donations of FV based on the local processors.	<ul style="list-style-type: none"> <li>• No FV processing plants in the area 4,5,8,9,10</li> <li>• Negative processor attitudes towards donation</li> </ul>
SOURC:local_processor_donate(current)	Describes current donations from local processors without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Amount of fresh FV received from local processors 4,5,8,9,10</li> </ul>
SOURC:local_retailer_donate(op)	Describes ED identified opportunities for donations of fresh FV from local retailers.	<ul style="list-style-type: none"> <li>• New retailers in the areas 4,5,8,9,10</li> <li>• Retailers the FB could build relationships with</li> </ul>

SOURC:local_retailer_donate(bar)	Describes ED identified barriers for donations of fresh FV from local retailers.	<ul style="list-style-type: none"> <li>• Donations of rotten foods 4,5,8,9,10</li> <li>• Lack of retailers selling fresh FV</li> </ul>
SOURC:local_retailer_donate(current)	Describes the current donations of fresh FV from local retailers without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Amount currently donated from retailers 4,5,8,9,10</li> </ul>
SOURC:local_communityconnectedness(op)	Describes ED identified opportunities for sourcing fresh FV based on community connectedness and social capital.	<ul style="list-style-type: none"> <li>• Starting a Farm to Family program 4,5,7</li> <li>• Community involvement in FB stocking of fresh FV</li> </ul>
SOURC:local_communityconnectedness(bar)	Describes ED identified barriers to sourcing fresh FV based on negative community relationships.	<ul style="list-style-type: none"> <li>• Language barriers with potential donors 4,5</li> <li>• Lack of contact information</li> <li>• Lack of answering phones</li> </ul>
SOURC:local_communityconnectedness(current)	Describes the current community connectedness and social capital with FV donors without references to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Current Farm to Family program 4,5</li> <li>• Current community involvement (food drives, etc.)</li> </ul>
SOURC:local_budget(op)	Includes ED identified FB monetary resource opportunities for fresh FV.	<ul style="list-style-type: none"> <li>• Potential to shift budget to include more fresh FV 10</li> <li>• Potential for more donations for fresh FV purchasing</li> </ul>

SOURC:local_budget(bar)	Includes ED identified barriers to distributing fresh FV based on budgetary restrictions.	<ul style="list-style-type: none"> <li>• Low budget for fresh FV purchasing</li> </ul>	10
SOURC:local_budget(current)	Describes the current budget being used for fresh FV without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Amount of money currently used to purchase fresh FV</li> </ul>	10
SOURC:local_relativeprice(op)	Describes the relative cost of fresh FV as an ED identified opportunity; it would be cheaper or cheaper for health value than other items.	<ul style="list-style-type: none"> <li>• Donations of fresh FV making produce a high volume low cost item</li> <li>• High health value of produce making it a “good deal.”</li> </ul>	10
SOURC:local_relativeprice(bar)	Describes the relative cost of fresh FV as an ED identified barrier.	<ul style="list-style-type: none"> <li>• FV more expensive</li> <li>• FV higher in price due to transport cost</li> </ul>	10
SOURC:local_relativeprice(current)	Describes the current relative price of fresh FV in the area.	<ul style="list-style-type: none"> <li>• Current cost of fresh FV</li> <li>• Current storage/handling costs</li> </ul>	10
SOURC:local_gardenprograms(op)	Describes ED identified opportunities for garden programs to provide fresh FV through the FB.	<ul style="list-style-type: none"> <li>• Many vacant lots for gardening</li> <li>• Community support for garden program</li> <li>• Ways to improve current garden program</li> </ul>	



SOURC:local_gardenprograms(bar)	Describes ED identified barriers from/for garden programs through the FB.	<ul style="list-style-type: none"> <li>• Lack of space for gardens</li> <li>• Lack of volunteer or community time spent on garden</li> <li>• Poor weather</li> </ul>
SOURC:local_gardenprograms(current)	Describes current garden programs through the FB without reference to opportunities/barriers.	<ul style="list-style-type: none"> <li>• Amount of time volunteers spend on the garden</li> <li>• Amount of produce distributed from the garden</li> </ul>
SOURC:local_gleaning(op)	Describes ED identified opportunities for/from gleaning programs to provide fresh FV to the FB. Gleaning is simply the act of collecting excess fresh foods from [producers] in order to provide it to those in need.	<ul style="list-style-type: none"> <li>• Farmers' markets with interest in gleaning</li> <li>• Farmers offer gleaning opportunities</li> <li>• Potential foods introduced to clients because of gleaning</li> </ul>
SOURC:local_gleaning(bar)	Describes ED identified barriers for/from gleaning programs to provide fresh FV to the FB and clients.	<ul style="list-style-type: none"> <li>• Needing to buy equipment to help glean</li> <li>• Lack of manpower</li> </ul>
SOURC:local_gleaning(current)	Describes the current use of gleaning to provide fresh FV without reference to opportunities/barriers.	<ul style="list-style-type: none"> <li>• How much fresh FV the current gleaning program provides</li> </ul>
SOURC:local_transport(op)	Describes ED identified opportunities for/from local transport of fresh FV.	<ul style="list-style-type: none"> <li>• Local retailers willing to transport excess to FB</li> </ul>

SOURC:local_transport(bar)	Describes ED identified barriers for/from local transport of fresh FV.	<ul style="list-style-type: none"> <li>• Having to buy more trucks in order to take donations from local retailers</li> <li>• Not having transport from processors to the food bank</li> </ul>
SOURC:local_transport(current)	Describes the current state of transport of fresh FV to the food bank without reference to opportunities or barriers	<ul style="list-style-type: none"> <li>• How much food the FB transports itself</li> <li>• Neutral statements about distance to local donors</li> </ul>
SOURC:local_innovativeprograms	Describes new and unique ways that the FB receives local and regional fresh FV donations, but not through the FANO system or through any of the specific ways mentioned below.	<ul style="list-style-type: none"> <li>• Trading unusable items for fresh produce</li> </ul>
SOURC:local_innovativeprograms_gardens	Innovative programs involving using community gardens to supply fresh produce to the food bank.	<ul style="list-style-type: none"> <li>• “We have a community garden which provides half our produce”</li> </ul>
SOURC:local_innovativeprograms_grower	Programs which attain food from growers in innovative ways, such as gleaning, etc.	<ul style="list-style-type: none"> <li>• Having “tenant farmers” on the land</li> </ul>
SOURC:local_innovativeprograms_processor	Innovative programs where the FB sources from a local processor.	<ul style="list-style-type: none"> <li>• “A local dairy donates directly to our agencies”</li> </ul>

SOURC:local_innovativeprograms_retailer	Innovative programs to attain food from retailers or to use unuseable food from retail donations.	<ul style="list-style-type: none"> <li>• Retail programs deliver to agencies</li> </ul>
SOURC:local_innovativeprograms_state	Innovative programs involving state partnerships which help food banks attain fresh produce.	<ul style="list-style-type: none"> <li>• Ohio Association of Food Banks</li> </ul>
HANDLING AND OPERATIONS	Handling and operations describes how the fresh FV are processed within the FB system. For example, it would describe transport to the FB and storage at the FB.	
HANDL:general	Includes general comments on how handling and operations affect FV distribution at the food bank, but without reference to specific codes	<ul style="list-style-type: none"> <li>• “Handling is our main barrier”</li> </ul>
HANDL:coldstorage(op)	Describes ED identified opportunities for improving cold storage capacity or operations in the FB itself.	<ul style="list-style-type: none"> <li>• Potential donations of 14 cold storage facilities</li> <li>• Ways to make cold storage more efficient</li> </ul>
HANDL:coldstorage(bar)	Describes ED identified barriers to having or expanding cold storage for fresh FV in the FB.	<ul style="list-style-type: none"> <li>• Budget/space restrictions 14</li> </ul>
HANDL:coldstorage(current)	Describes the current state of cold storage capacity for fresh FV in the FB,	<ul style="list-style-type: none"> <li>• Descriptions of the amount of square footage of cold storage 14</li> </ul>

	without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Cold storage practices</li> </ul>	
HANDL:produceinspections(op)	Describes how inspecting produce can be an ED identified opportunity for fresh FV distribution.	<ul style="list-style-type: none"> <li>• Ideas for inspecting produce before taking donations to prevent spoilage at the FB</li> </ul>	14
HANDL:produceinspections(bar)	Describes how inspecting produce can be an ED identified barrier for fresh FV distribution.	<ul style="list-style-type: none"> <li>• Time it takes to do produce inspections</li> <li>• Perceptions of being ungrateful towards donors</li> </ul>	14
HANDL:produceinspections(current)	Describes current practices on produce inspections without reference to opportunities and barriers.	<ul style="list-style-type: none"> <li>• Descriptions of their program</li> </ul>	14
HANDL:refrigeratedtrucks(op)	Describes ED identified opportunities for handling and operations based on the use of refrigerated trucks for the movement of fresh FV.	<ul style="list-style-type: none"> <li>• Potential refrigerated truck donations</li> <li>• Amount of food that could be moved with more refrigerated trucks</li> </ul>	14
HANDL:refrigeratedtrucks(bar)	Describes ED identified barriers for handling and operations of fresh FV based on the lack of refrigerated trucks, the impracticality of refrigerated trucks, or other factors.	<ul style="list-style-type: none"> <li>• Not having the budget to maintain trucks</li> <li>• Narrow streets making large trucks impractical</li> </ul>	14

HANDL:refrigeratedtrucks(current)	Describes the current use of refrigerated trucks in handling and operations of fresh FV, with no reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Current use of 14 refrigerated trucks to deliver to rural FBs</li> </ul>
HANDL:timetodistribution(op)	Describes ED identified opportunities based on the amount of time fresh FV is handled or stored at the FB before distribution to agencies/clients.	<ul style="list-style-type: none"> <li>• Ideas for lowering 14 amount of time to distribution</li> <li>• Ways to get partner agencies to receive fresh FV sooner</li> </ul>
HANDL:timetodistribution(bar)	Describes ED identified barriers based on the time it takes for FV to be handled or stored before distribution.	<ul style="list-style-type: none"> <li>• Lack of 14 communication with partner agencies</li> </ul>
HANDL:timetodistribution(current)	Describes current time between receiving and distribution for fresh FV, without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Number of days it 14 takes to spoil</li> <li>• Amount of food currently spoiling due to time to distribution</li> </ul>
HANDL:foodwaste(op)	Describes ED identified opportunities to either reduce food waste from fresh FV or to put food waste to use.	<ul style="list-style-type: none"> <li>• Potential ways to 14, variety compost or reuse otherwise wasted food</li> <li>• Ways to distribute potential food waste quickly</li> </ul>
HANDL:foodwaste(bar)	Describes ED identified barriers to fresh FV distribution based on food waste.	<ul style="list-style-type: none"> <li>• Lack of partner Variety composting agencies</li> <li>• Cost of recycling vs. wasting</li> </ul>

HANDL:foodwaste(current)	Describes current food waste practices with fresh FV without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>Partnerships with composting agencies or farms</li> <li>Amount of food currently wasted</li> </ul>	Variety
HANDL:volunteers(op)	Describes ED identified opportunities for FV distribution based on FB volunteers.	<ul style="list-style-type: none"> <li>Use of volunteers to glean, run community gardens, distribute fresh FV</li> <li>Opportunities to find nutrition knowledgeable volunteers</li> </ul>	Variety
HANDL:volunteers(bar)	Describes ED identified barriers to FV distribution based on FB volunteers.	<ul style="list-style-type: none"> <li>Lack of volunteer interest</li> <li>Lack of volunteer nutrition knowledge</li> </ul>	Variety
HANDL:volunteers(current)	Describes current FB volunteers without reference to opportunities/barriers.	<ul style="list-style-type: none"> <li>Programs volunteers currently run</li> <li>Number of current volunteers.</li> </ul>	Variety
HANDL:innovativeprograms	Describes new and unique ways the FB handles fresh FV to promote greater distribution.	<ul style="list-style-type: none"> <li>Composting to avoid food waste</li> </ul>	
HANDL:innovativeprograms_expanding	Food bank is expanding their service area, their facilities, or their storage capacity.	<ul style="list-style-type: none"> <li>Adding on to their existing buildings</li> </ul>	

HANDL:innovativeprograms_foodpre p	FP participates in food preparation or packaging in order to make a sellable or distributable product.	<ul style="list-style-type: none"> <li>• Making pasta sauce out of donated tomatoes</li> <li>• Boxing fresh produce into mixed boxes for distribution to clients</li> </ul>
HANDL:innovativeprograms_inventor y	Food bank keeps an inventory of fresh produce in order to monitor/prevent spoilage and quicken time to distribution.	<ul style="list-style-type: none"> <li>• "We inventory all our produce while in the food bank with notifications concerning the likely date of spoilage"</li> </ul>
HANDL:innovativeprograms_voluntee rs	Food bank uses volunteers in a unique way in order to process/distribute produce.	<ul style="list-style-type: none"> <li>• Quick notification of volunteers when produce comes in</li> </ul>
<b>OUTBOUND AND AGENCIES</b> Outbound and agencies describes the distribution from the FB to the partner agencies and the storage of fresh FV at the agencies. It describes agency capacity as well as transport from the FB.		
OUT:general	Includes general comments on how outbound and agencies affect FV distribution, without reference to specific codes.	<ul style="list-style-type: none"> <li>• "It's really outbound that's our main problem"</li> </ul>

OUT:agency_coldstorage(op)	Describes ED identified opportunities for storage of fresh FV based on cold storage in partner agencies.	<ul style="list-style-type: none"> <li>Ways to get agencies more storage</li> </ul>	15
OUT:agency_coldstorage(bar)	Describe ED identified barriers to FV distribution based on cold storage in partner agencies.	<ul style="list-style-type: none"> <li>Identifying agencies as not having enough money to purchase cold storage</li> <li>Low agency capacity</li> </ul>	15
OUT:agency_coldstorage(current)	Describes current cold storage capacity in relation to fresh FV in partner agencies, without reference to barriers or opportunities.	<ul style="list-style-type: none"> <li>Amount of cold storage currently in partner agencies</li> </ul>	15
OUT:agency_drystorage(op)	Describes ED identified opportunities for fresh FV distribution based on partner agency dry storage capacity.	<ul style="list-style-type: none"> <li>Finding ways to distribute more shelf stable fresh FV to these agencies</li> </ul>	15
OUT:agency_drystorage(bar)	Describes ED identified barriers to FV distribution based on partner agencies' dry storage capacity.	<ul style="list-style-type: none"> <li>Not enough capacity to carry shelf stable fresh FV</li> </ul>	15
OUT:agency_drystorage(current)	Describes the current state of partner agencies' dry storage capacity as it relates to fresh FV, without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>Number of square feet of dry storage in partner agencies</li> </ul>	15
OUT:agency_demand(op)	Describes ED identified opportunities based on agency demand for fresh FV.	<ul style="list-style-type: none"> <li>Increase agency demand through education</li> </ul>	15,17



OUT:agency_demand(bar)	Describes ED identified barriers based on partner agencies demand for fresh FV.	<ul style="list-style-type: none"> <li>Lack of demand for fresh FV making it hard for the FB to move fresh FV</li> </ul>	15,17
OUT:agency_demand(current)	Describes current agency demand for fresh FV, without reference to barriers or opportunities.	<ul style="list-style-type: none"> <li>Descriptions of attitudes without reference to how that affects distribution.</li> </ul>	15,17
OUT:agency_transport(op)	Describes ED identified opportunities in how partner agencies transport fresh FV.	<ul style="list-style-type: none"> <li>Developing a mobile grocery model</li> <li>Partner agency collaboration for transport</li> </ul>	15
OUT:agency_transport(bar)	Describes ED identified barriers based on partner agencies' transport capacity.	<ul style="list-style-type: none"> <li>Volunteers pick up FB orders in small cars with no room for fresh FV</li> </ul>	15
OUT:agency_transport(current)	Describes the current state of partner agencies' transport, without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>Ways partner agencies transport food without reference to how it affects distribution of fresh FV</li> </ul>	15
OUT:agency_volunteers(op)	Describes ED identified opportunities for fresh FV distribution based on volunteers in partner agencies. This would be agency-level volunteers only; FB volunteers are addressed in HANDL.	<ul style="list-style-type: none"> <li>Finding agency-level nutrition-focused volunteers who could potentially provide nutrition education</li> </ul>	15

OUT:agency_volunteers(bar)	Describes ED identified barriers to fresh FV distribution based on partner agencies' volunteers.	<ul style="list-style-type: none"> <li>• Lack of volunteers 15</li> <li>• Volunteers' lack of nutrition focus</li> </ul>
OUT:agency_volunteers(current)	Describes the current state of partner agencies' volunteers, without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Number of volunteers 15</li> <li>• Nutrition focus of volunteers without reference to how that affects FV distribution</li> </ul>
OUT:agency_innovativeprograms	Describes new or unique programs which agencies are using to receive fresh FV.	<ul style="list-style-type: none"> <li>• Ways to solicit donations of refrigerated storage</li> <li>• Use of others' refrigerated storage on distribution days</li> </ul>
OUT:fb_maintenancefee(op)	Describes the FB maintenance fee for fresh FV as an ED identified opportunity.	<ul style="list-style-type: none"> <li>• Potential change to offer fresh FV for free 16</li> </ul>
OUT:fb_maintenancefee(bar)	Describes ED identified barriers for fresh FV distribution based on the FB's maintenance fee.	<ul style="list-style-type: none"> <li>• High maintenance fee preventing some agencies from receiving fresh FV 16</li> <li>• Inability to change the maintenance fee based on lack of funding</li> </ul>
OUT:fb_maintenancefee(current)	Describes the current state of the maintenance fee for fresh FV without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Stating the dollar amount for the maintenance fee for fresh FV 16</li> </ul>

OUT:fb_transport(op)	Describes the FB's transport system as an ED identified opportunity for distribution of fresh FV to partner agencies.	<ul style="list-style-type: none"> <li>• Potential FB delivery of fresh FV to partner agencies</li> </ul>	14,16
OUT:fb_transport(bar)	Describes the FB's transport system of fresh FV as an ED identified barrier.	<ul style="list-style-type: none"> <li>• Rural partner agencies have to pick up their orders so they may not take fresh FV</li> <li>• FB transport limited in space preventing distribution of large volumes of fresh FV</li> </ul>	14,16
OUT:fb_transport(current)	Describes the current FB transport system, without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Statement of whether or not FB delivers</li> </ul>	14,16
OUT:fb_onlineordering(op)	Describes ED identified opportunities that online ordering of fresh FV from the FB would provide.	<ul style="list-style-type: none"> <li>• Potential for quicker pick-up</li> <li>• Potential for notification when fresh FV come in</li> </ul>	14,15,16,17
OUT:fb_onlineordering(bar)	Describes ED identified barriers based on online ordering of fresh FV from the FB.	<ul style="list-style-type: none"> <li>• Lack of internet access or monitoring of online system by partner agencies</li> <li>• Lack of ability to form an online ordering system</li> </ul>	14,15,16,17

OUT:fb_onlineordering(current)	Describes the current state of the online ordering system at the FB without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>Stating whether or not they have an online ordering system.</li> </ul>	14,15,16,17
OUT:fb_pushsystem(op)	Describes ED identified opportunities for increased fresh FV distribution based on a push system. A push system involves including items in agencies' orders without the agency ordering them.	<ul style="list-style-type: none"> <li>Potential to get FV out faster based on push system</li> <li>Could introduce new FV to agencies, FV that agencies wouldn't choose on their own</li> </ul>	
OUT:fb_pushsystem(bar)	Describes ED identified barriers for fresh FV distribution based on the push system.	<ul style="list-style-type: none"> <li>Agency pushback on unwanted items</li> <li>Items rotting/going to waste when pushed out to agencies</li> </ul>	
OUT:fb_pushsystem(current)	Describes the current push system at the FB.	<ul style="list-style-type: none"> <li>Agency currently has a push system</li> <li>Push system only includes fresh FV and other perishables</li> </ul>	
OUT:fb_innovativeprograms	Describes new or unique programs that the FB has for bringing food to agencies.	<ul style="list-style-type: none"> <li>New types of transport systems</li> </ul>	
OUT:fb_innovativeprograms_agencys hopping	FB has a program which allows agencies to shop for fresh FV/see the	<ul style="list-style-type: none"> <li>"We keep the produce at the front and allow partners to take whatever they want</li> </ul>	

	fresh produce available when they come in to pick up their order.	when they come to pick up"
OUT:fb_innovativeprograms_building agencycapacity	This includes programs which donate items to agencies which can increase their capacity for distributing fresh produce.	<ul style="list-style-type: none"> <li>• "Last year we gave all our agencies walk-in freezers"</li> </ul>
OUT:fb_innovativeprograms_lowerin gagencycost	FB finds ways to lower agency cost to purchase fresh produce from the FB in order to increase agency distribution.	<ul style="list-style-type: none"> <li>• Subsidizing produce purchases</li> <li>• Delivery (push system)</li> </ul>
OUT:fb_innovativeprograms_partner notification	FB uses ways to notify partner agencies of nutritious food available or of the nutrition content of foods.	<ul style="list-style-type: none"> <li>• CHOP rating on online ordering</li> <li>• E-mail blasts</li> </ul>
<b>DISTRIBUTION</b>	Distribution describes agencies' practices on getting fresh FV to clients, as well as clients' attitudes towards fresh FV.	
DISTR:general	Includes general comments on FV distribution without reference to specific codes, within the agency, clients, or food bank categories.	<ul style="list-style-type: none"> <li>• "We have a problem with distribution in our food bank"</li> </ul>
DISTR:agency_shelflife (op)	Describes ED identified opportunities based on agency shelf life of food.	<ul style="list-style-type: none"> <li>• Agencies which 18,23 distribute food in such a way that overcomes problems with the</li> </ul>

		short shelf life of fresh FV	
DISTR:agency_shelflife (bar)	Describes ED identified barriers based on agency shelf life of fresh FV.	<ul style="list-style-type: none"> <li>Agency distribution uncoordinated with when fresh FV come in</li> <li>Agency allows spoiling of fresh FV in other ways</li> </ul>	9,18
DISTR:agency_shelflife(current)	Describes the current state of the shelf life of fresh FV in agencies, without reference to opportunities and barriers.	<ul style="list-style-type: none"> <li>Descriptions of how much fresh FV is wasted in agencies</li> </ul>	Varies
DISTR:agency_kidsprograms(op)	Describes ED identified opportunities for programs targeting children for distribution of fresh FV.	<ul style="list-style-type: none"> <li>Opportunities to start programs in schools</li> <li>Opportunities available because of programs working with children</li> <li>Child to parent education on fresh FV, through requesting FV in grocery stores or bringing them home from the programs</li> </ul>	22
DISTR:agency_kidsprograms(bar)	Describes ED identified barriers for programs targeting children for distribution of fresh FV.	<ul style="list-style-type: none"> <li>Difficulty finding volunteers to work with children</li> <li>Difficulty getting in to the school system</li> </ul>	22

DISTR:agency_kidsprograms(current)	Describes current programs targeting children for distribution of fresh FV without reference to barriers or opportunities..	<ul style="list-style-type: none"> <li>• FB has or does not have a program</li> </ul>	22
DISTR:agency_clientchoice(op)	Describes ED identified opportunities from/for having partner agencies which are client choice.	<ul style="list-style-type: none"> <li>• Consistent distribution so produce can be used as it comes in</li> <li>• Ways in which pantries could transition to client choice</li> <li>• Increased demand for fresh FV because of client choice</li> </ul>	Varies
DISTR:agency_clientchoice(bar)	Describes ED identified barriers to fresh FV distribution from/for having partner agencies which are client choice.	<ul style="list-style-type: none"> <li>• Lack of volunteer time to have client choice pantries</li> <li>• Client choice pantry style decreases number of clients served</li> </ul>	Varies
DISTR:agency_clientchoice(current)	Describes current client choice partner agencies without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Current number of client choice pantries</li> <li>• How much FV they distribute compared to other pantries</li> </ul>	Varies
DISTR:agency_innovativeprograms	Describes new or unique programs that agencies are doing to promote FV distribution.	<ul style="list-style-type: none"> <li>• Agency contact of clients when fresh FV come in</li> </ul>	

DISTR:client_demand(high)	Describes ED indicated high client demand for fresh FV.	<ul style="list-style-type: none"> <li>• Clients asking for more FV 18,23</li> <li>• Client prioritization of fresh produce</li> </ul>
DISTR:client_demand(low)	Describes ED indicated low client demand for fresh FV.	<ul style="list-style-type: none"> <li>• Lack of client demand for fresh FV 9,18</li> <li>• “Clients don’t want it so they don’t take it”</li> </ul>
DISTR:client_demand(neutral)	Describes current client demand for fresh FV as neutral or equal between high and low demand.	<ul style="list-style-type: none"> <li>• “Clients want about as much as they are receiving” 18</li> <li>• “I’m not sure how much clients want FV”</li> </ul>
DISTR:client_knowledge(op)	Describes ED identified opportunities based on client knowledge about how to prepare fresh FV or about the importance of fresh FV.	<ul style="list-style-type: none"> <li>• Ways to increase client knowledge such as classes 18,23</li> </ul>
DISTR:client_knowledge(bar)	Describes ED identified barriers based on clients’ lack of knowledge about how to prepare fresh FV or their health benefits.	<ul style="list-style-type: none"> <li>• Clients not knowing how to prepare donated items 9,18</li> </ul>
DISTR:client_knowledge(current)	Describes clients’ current knowledge of fresh FV, without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Neutral statements about clients knowing how to prepare fresh FV 18</li> <li>• Current programs for cooking education</li> </ul>



		without reference to success or potential	
DISTR:client_capacity(op)	Describes ED identified opportunities based on clients' capacity for preparing fresh FV.	<ul style="list-style-type: none"> <li>• Providing a cutting board and knife along with fresh produce</li> <li>• Programs to help clients have the tools to prepare fresh FV</li> <li>• Potential of having a cooking teacher as a volunteer/staff</li> </ul>	18,23
DISTR:client_capacity(bar)	Describes ED identified barriers based on clients' capacity for preparing fresh FV.	<ul style="list-style-type: none"> <li>• Clients not taking fresh FV because they do not have the tools necessary to cut, cook, or store the produce</li> <li>• FB not being able to provide those tools</li> </ul>	9,18
DISTR:client_capacity(current)	Describes clients' current capacity for preparing fresh FV, without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Statements about client preparation of fresh FV at home</li> </ul>	18
DISTR:fb_FVdistribution(high)	Describes the FB's current distribution of fresh FV as high (50%+ of total pounds distributed).		2,7
DISTR:fb_FVdistribution(medium)	Describes the FB's current distribution of fresh FV as 11-49% of total pounds distributed.		2,7

DISTR:fb_FVdistribution(low)	Describes the FB's current distribution of fresh FV as low ( $\leq 10\%$ of total pounds distributed).	2,7
DISTR:fb_directdistribution(op)	Describes ED identified opportunities for creation of/increase of programs that directly distribute food to the clients from the food bank.	<ul style="list-style-type: none"> <li>• Idea for "farmer's market" with fresh produce in food deserts</li> <li>• Idea for mobile pantries from the food bank</li> </ul>
DISTR:fb_directdistribution(bar)	Describes ED identified barriers to existing direct distribution programs or creation of direct distribution programs from the food bank to the clients.	<ul style="list-style-type: none"> <li>• Lack of manpower to start direct distribution programs</li> <li>• Problems contacting clients about when distribution would be</li> </ul>
DISTR:fb_directdistribution(current)	Describes the current direct distribution programs from the food bank to the clients.	<ul style="list-style-type: none"> <li>• Current direct distribution programs to rural communities</li> <li>• Current food bank mobile outreach</li> </ul>
DISTR:fb_innovativeprograms	Describes any new, unique, or innovative programs the FB might have for distributing foods to clients, without falling into any of the other categories of food bank's innovative programs for distribution.	<ul style="list-style-type: none"> <li>• Distributing food to a unique client base</li> </ul>

DISTR:fb_innovativeprograms-bypassFB	Programs in which the food bank facilitates a direct link between a partner agency and a source, so that they no longer act as the middle man.	<ul style="list-style-type: none"> <li>• Partner agency picks up from local retailers.</li> </ul>
DISTR:fb_innovativeprograms_direct distribution	ED describes a program where the food bank distributes FV directly to clients, but not through a mobile distribution or produce drop.	<ul style="list-style-type: none"> <li>• Food bank runs their own pantry.</li> </ul>
DISTR:fb_innovativeprograms_education_cooking	ED describes a program where the food bank provides cooking education to clients.	<ul style="list-style-type: none"> <li>• Provides recipe cards</li> </ul>
DISTR:fb_innovativeprograms_education_nutrition	ED describes a program where they provide nutrition education to clients.	<ul style="list-style-type: none"> <li>• RD educates about the importance of fruits and vegetables</li> </ul>
DISTR:fb_innovativeprograms_mobile	ED describes a program where the food bank provides a mobile distribution of produce to an area not associated with a partner agency.	<ul style="list-style-type: none"> <li>• Mobile pantry at a senior center</li> </ul>
DISTR:fb_innovativeprograms_producedrop	Programs which distribute food at a partner agency site but facilitated by the food bank.	<ul style="list-style-type: none"> <li>• "In order to get around a low cold storage capacity at the partner agencies, we distribute FV directly while they do their distribution"</li> </ul>

DIST:fb_innovativeprograms_school	These programs use schools as a distribution site for fresh FV or as an education site about nutrition.	<ul style="list-style-type: none"> <li>• Backpack programs</li> </ul>
PLANNING	Planning describes ways in which executives could change policies and procedures in order to promote fresh FV distribution.	
PLAN:general	Includes general comments about planning and how it relates to FV distribution, but without reference to specific codes.	<ul style="list-style-type: none"> <li>• “Planning is our primary bottleneck”</li> </ul>
PLAN:futureresearch	Describes ED ideas for future research which could help in planning, in getting donations for fresh FV, or in educating clients.	<ul style="list-style-type: none"> <li>• Comments about needing research on the relationship between FV and health</li> <li>• Comments about need for research on the amount of money saved for the healthcare system by providing fresh FV</li> </ul>
PLAN:fano_metrics(op)	Describes ED identified opportunities for increased distribution of FV based on the metrics reported to Feeding America.	<ul style="list-style-type: none"> <li>• New metric development at FANO 10,11,12,13,23,24,27</li> </ul>

PLAN:fano_metrics(bar)	Describes ED identified barriers to FV distribution based on the metrics reported to Feeding America.	<ul style="list-style-type: none"> <li>• Disincentive to distribute low weight produce items 10,11,12,13,2 3,24,27</li> <li>• Difficulties in changing the metric</li> </ul>
PLAN:fano_metrics(current)	Describes the current Feeding America metrics, without reference to barriers/opportunities.	<ul style="list-style-type: none"> <li>• What they report back to Feeding America 10,11,12,13,2 3,24,27</li> </ul>
PLAN:fano_f2e	Describes the use of f2e as a metric which is reported back to FANO	<ul style="list-style-type: none"> <li>• "FANO requires that we be at 65% F2E"</li> </ul>
PLAN:fano_educationalmaterials(op)	Describes ED identified opportunities for fresh FV distribution based on Feeding America educational materials.	<ul style="list-style-type: none"> <li>• Ideas for new FANO educational materials 19,20,21,22,2 3,24,27</li> </ul>
PLAN:fano_educationalmaterials(bar)	Describes ED identified barriers to Feeding America producing educational materials or barriers from Feeding America educational materials.	<ul style="list-style-type: none"> <li>• Comments on how nationally made educational materials may not apply to all FBs 19,20,21,22,2 3,24,27</li> </ul>
PLAN:fano_educationalmaterials(current)	Describes the current Feeding America educational materials on fresh FV without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Description of educational materials distributed by FANO 19,20,21,22,2 3,24,27</li> </ul>

PLAN:fano_taxwriteoff(op)	Describes ED identified opportunities for national donations of fresh FV based on the tax write off.	<ul style="list-style-type: none"> <li>• Ideas about changing the tax write off to encourage FV donations</li> <li>• Ways in which the current tax write-off could be used to find more fresh FV donors</li> </ul>
PLAN:fano_taxwriteoff(bar)	Describes ED identified barriers to fresh FV distribution as a result of the tax write off for donations.	<ul style="list-style-type: none"> <li>• How the tax write off makes it hard to refuse rotten or poor health value donations without angering donors</li> </ul>
PLAN:fano_taxwriteoff(current)	Describes the current tax write off for donations without reference to barriers or opportunities.	<ul style="list-style-type: none"> <li>• How the tax write off allowed there to be a certain amount of donations of fresh FV</li> </ul>
PLAN:fano_innovativeprograms	Describes ideas for FANO-level new programs to promote planning for fresh FV distribution.	<ul style="list-style-type: none"> <li>• Specific ideas for a new metric to incentivize fresh FV distribution</li> </ul>
PLAN:fb_FVfocusedmessagesdonor(op)	Describes ED identified opportunities based on FB produced FV focused messages to donors.	<ul style="list-style-type: none"> <li>• Ideas for types of messages to recruit or confront donors 19,21,22</li> </ul>
PLAN:fb_FVfocusedmessagesdonor(bar)	Describes ED identified barriers based on FV focused messages to donors.	<ul style="list-style-type: none"> <li>• Lack of staff to make FV focused messages 19,21,22</li> <li>• Lack of health literacy of donors</li> </ul>

PLAN:fb_FVfocusedmessagesdonor(current)	Describes the FB's current FV focused messages given to donors, without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• Distribution of FV focused messages to donors resulting in a certain number of donations</li> </ul>	19,21,22
PLAN:fb_donorsupport(op)	Describes ED identified opportunities based on donor support for carrying fresh FV.	<ul style="list-style-type: none"> <li>• Potential ways to increase donor support for healthful policies</li> </ul>	8,19,21,23,24,26
PLAN:fb_donorsupport(current)	Describes current donor support for carrying fresh FV, without reference to barriers or opportunities.	<ul style="list-style-type: none"> <li>• How many donors support FV distribution</li> <li>• How donor support has affected distribution.</li> </ul>	8,19,21,23,24,26
PLAN:fb_donorsupport(bar)	Describes donor pushback for healthy policies as a barrier to distribution of fresh FV.	<ul style="list-style-type: none"> <li>• Donors threatening to leave the network after nutrition policies were discussed</li> <li>• Donor support in some areas (funding, past donations) as a barrier to restricting donations from these donors</li> </ul>	8,19,21,23,24,26
PLAN:fb_perceivedlossofdonors	Describes ED fear of losing donors based on healthier policies on fresh FV.	<ul style="list-style-type: none"> <li>• Wanting to restrict donations of certain items but not wanting to lose that donor because of the other items they donate</li> </ul>	8,21,22

PLAN:fb_actuallossofdonors	Describes actual loss of donors after having a conversation about increasing nutritional quality (fresh FV) or instituting a guideline which restricts donations of unhealthy items.	<ul style="list-style-type: none"> <li>• Donor leaving or refusing to donate anymore after a nutrition conversation</li> </ul>	8,21,22
PLAN:fb_metric(op)	Describes ED identified opportunities for increased fresh FV distribution based on a FB created metric/goals or metric sourced from somewhere besides FANO to measure success or nutritional value.	<ul style="list-style-type: none"> <li>• Opportunities for creating a new metric</li> <li>• Ways to use the metric that they have in creative ways.</li> </ul>	22,23,24
PLAN:fb_metric(bar)	Describes ED identified barriers in a FB created metric to measure success or nutritional value.	<ul style="list-style-type: none"> <li>• Manpower necessary to create a metric</li> <li>• Lack of standardization between FBs</li> </ul>	22,23,24
PLAN:fb_metric(current)	Describes the current metric the individual FB uses to measure success or nutritional value. This would not be coded based on the FANO metrics; this could potentially include unique goals for %F2E or FB developed metrics.	<ul style="list-style-type: none"> <li>• Metrics they made describing the types of food distributed</li> </ul>	22,23,24
PLAN:fb_nutritionguidelines(op)	Describes ED identified FB level opportunities for having nutrition	<ul style="list-style-type: none"> <li>• Specific FB policies on the types of foods</li> </ul>	22,23,24



	guidelines. This would include FB policies, not FANO policies.	<ul style="list-style-type: none"> <li>accepted potentially increasing the amount of fresh FV distributed</li> <li>Ways in which they could create nutrition guidelines</li> </ul>	
PLAN:fb_nutritionguidelines(bar)	Describes ED identified FB level barriers to having nutrition guidelines for fresh FV.	<ul style="list-style-type: none"> <li>Amount of time it takes to create guidelines</li> <li>Fear of donor pushback.</li> </ul>	22,23,24
PLAN:fb_nutritionguidelines(current)	Describes the current nutrition guidelines for fresh FV, without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>“We have no nutrition guidelines for what we accept and don’t accept”</li> <li>Statements about their guidelines without reference to future use</li> </ul>	22,23,24
PLAN:fb_targetedmessaging(op)	Describes ED identified opportunities based on the use of targeted messaging to promote fresh FV donations, distribution, etc.	<ul style="list-style-type: none"> <li>Messages focusing specifically on community health, on benefits to the donor, or on specific demographic groups to increase donation</li> </ul>	19,20,21
PLAN:fb_targetedmessaging(bar)	Describes ED identified barriers to FV distribution as a result of targeted messaging.	<ul style="list-style-type: none"> <li>Lack of people trained in making targeted messages</li> <li>Lack of success from targeted messaging</li> </ul>	19,20,21

PLAN:fb_targetedmessaging(current)	Describes current use of targeted messaging without reference to barriers or opportunities.	<ul style="list-style-type: none"> <li>• “We use specific arguments for different donors. For example, unhealthy donors could improve their public image by donating only healthful items”</li> </ul>	19,20,21
PLAN:fb_grants(op)	Describes ED identified opportunities based on the use of grants for increased FV distribution.	<ul style="list-style-type: none"> <li>• Ideas for new grants or for the use of current grants for fresh FV purchasing/distribution</li> </ul>	19,20,21
PLAN:fb_grants(bar)	Describes ED identified barriers to fresh FV distribution based on the use of grants.	<ul style="list-style-type: none"> <li>• Lack of grants available</li> <li>• Competition between FBs for grants</li> </ul>	19,20,21
PLAN:fb_grants(current)	Describe current grants for fresh FV distribution, without reference to opportunities or barriers.	<ul style="list-style-type: none"> <li>• How ED use grants to purchase FV</li> <li>• Where they get grants</li> </ul>	19,20,21
PLAN:fb_communitypartnerships(op)	Describes ED identified opportunities for community partnerships. This does not include partnerships to source FV, only partnerships involved in other areas of the distribution chain.	<ul style="list-style-type: none"> <li>• Partnering with a local college nutrition program or with unique distribution sites</li> </ul>	
PLAN:fb_communitypartnerships(bar)	Describes ED identified barriers to FV distribution as a result of community	<ul style="list-style-type: none"> <li>• Lack of community involvement</li> </ul>	19,20,21

	partnerships or barriers to having community partnerships.	<ul style="list-style-type: none"> <li>• Language barriers</li> </ul>	
PLAN:fb_communitypartnerships(current)	Describes current partnerships and how they are being used to promote fresh FV distribution.	<ul style="list-style-type: none"> <li>• Current partnerships with local health educators</li> <li>• Current partnerships with organizations and programs such as SNAP</li> </ul>	
PLAN:fb_staffknowledge(op)	Describes ED identified opportunities based on staff knowledge of fresh FV.	<ul style="list-style-type: none"> <li>• Staff knowledge of a nutrition profiling system would help in FV reporting</li> <li>• Potential training of staff members in the importance of fresh FV</li> </ul>	8,9,19,22,23, 24
PLAN:fb_staffknowledge(bar)	Describes ED identified barriers based on staff knowledge of fresh FV.	<ul style="list-style-type: none"> <li>• Staff may not know how to read a nutrition label</li> <li>• Lack of training opportunities for staff</li> </ul>	8,9,19,22,23, 24
PLAN:fb_staffknowledge(current)	Describes the current state of staff nutrition knowledge for fresh FV, without reference to barriers or opportunities.	<ul style="list-style-type: none"> <li>• How many staff have nutrition knowledge</li> </ul>	8,9,19,22,23, 24
PLAN:fb_advocates	Describes advocates for fresh FV distribution.	<ul style="list-style-type: none"> <li>• Advocates include growers, Board of Directors,</li> </ul>	8

		operations staff, programs staff, agency relations staff, development staff, agency volunteers, and clients.
PLAN:fb_innovativeprograms	Describes new or innovative programs on the FB level for improving planning for FV distribution.	<ul style="list-style-type: none"> <li>• Staff training sessions on reading nutrition labels and evaluating fresh produce</li> </ul>
PLAN:fb_innovativeprograms_agency training	FB provides training to agencies in order to increase their produce distribution or healthful food distribution.	<ul style="list-style-type: none"> <li>• “We hold a yearly conference where we teach agencies to write grants”</li> </ul>
PLAN:fb_innovativeprograms_healthcare	FB partners with healthcare programs to promote fresh produce distribution.	<ul style="list-style-type: none"> <li>• “We are part of the Fresh Rx program”</li> </ul>
PLAN:fb_innovativeprograms_leadership	FB programs which utilize leadership to promote fresh produce distribution.	<ul style="list-style-type: none"> <li>• Nutrition committee for board members</li> </ul>
PLAN:fb_innovativeprograms_metric/measurement	Food bank programs which use a unique metric/measurement or use an established metric in a unique way.	<ul style="list-style-type: none"> <li>• “We use the CHOP system”</li> </ul>
PLAN:fb_innovativeprograms_nutrition guidelines	Food bank has established nutrition guidelines for what it accepts	<ul style="list-style-type: none"> <li>• “We do not accept any baked goods”</li> </ul>

PLAN:fb_innovativeprograms_shorteningtheline	Innovative programs which work to shorten the line.	<ul style="list-style-type: none"> <li>• Job training programs</li> <li>• SNAP assistance</li> </ul>
PLAN:fb_innovativeprograms_tiered	This describes programs which prioritize partner agencies (put agencies into tiers) and give special help to certain groups.	<ul style="list-style-type: none"> <li>• “We have prioritized our top distributing partners and are focusing on increasing their distribution further”</li> </ul>
<b>LEADERSHIP ATTITUDES</b>	Leadership attitudes look at the perceptions of the EDs about FV and chronic disease in their client population.	
LEADAT:general	Includes general comments about the leader’s attitude about fresh FV, without reference to specific codes.	<ul style="list-style-type: none"> <li>• Leader believes that there will be more/less need for food banks in the future</li> </ul>
LEADAT:hungerfocusedmission	The FB ED would describe the FB’s perceived role in promoting health as not within the mission of FBing. FB may do other initiatives, such as employment, but is not addressing health.	<ul style="list-style-type: none"> <li>• Statements about 6,25 having a hunger-focused mission</li> <li>• Wanting to end hunger first</li> </ul>
LEADAT:complacentviewofhealth	The FB ED would describe their view as complacent, passive, or no real opinion on the role of FBs in promoting health.	<ul style="list-style-type: none"> <li>• Statements that FBs 6,25 could/should do more to promote health but that is not a priority</li> </ul>

LEADAT:promotehealth	The FB ED describes FB role as active in promoting health in their clients.	<ul style="list-style-type: none"> <li>• Mentions of moral obligation to promote health equity based on a social justice perspective</li> </ul>	6,7,8,25
LEADAT:FVandhealth(promote)	The FB ED would say that FV can have an impact on client health.	<ul style="list-style-type: none"> <li>• Statements that FV are very important to health</li> </ul>	6
LEADAT:FVandhealth(complacent)	The FB ED would not prioritize the relationship between FV and client health.	<ul style="list-style-type: none"> <li>• Statements that FV can promote health but that is not a priority</li> </ul>	6
LEADAT:FVandhealth(norole)	The FB ED would not see the relationship between FV and client health.	<ul style="list-style-type: none"> <li>• Statements that FV are not related to health</li> <li>• Health is primarily promoted by calorie provision</li> </ul>	6
LEADAT:chronicdiseaseconcern(low)	ED expresses a low concern for client disease or a low perception of their risk.	<ul style="list-style-type: none"> <li>• “My clients probably have the same risk as everyone else”</li> </ul>	6
LEADAT:chronicdiseaseconcern(medium)	ED expresses a medium concern for client disease or a medium perception of their risk.	<ul style="list-style-type: none"> <li>• Mentioning inequities in health or chronic disease risk</li> <li>• Not prioritizing chronic disease risk as a FB goal</li> </ul>	6

LEADAT:chronicdiseaseconcern(high)	ED expresses a high concern for client chronic disease or a high perception of their risk.	<ul style="list-style-type: none"> <li>Statements about a high number of clients having chronic disease and wanting to find ways to fix that</li> </ul>	6
LEADAT:FVgoals_high	ED expresses desire to distribute fresh FV as at least 50% of pounds distributed.		7
LEADAT:FVgoals_medium	ED expresses desire to distribute fresh FV as 11-49% of pounds distributed		7
LEADAT:FVgoals_low	ED expresses desire to distribute fresh FV as $\leq$ 10% of pounds distributed.		7
EXECUTIVE EXPERIENCE	Executive experience describes the EDs' time spent working with FBs and/or their experience in other fields which contributes to their attitudes and perceptions about providing fresh FV.		
EXEC:experience	ED would describe their number of years in FBing.	<ul style="list-style-type: none"> <li>"I have been in the world of FBing for 32 years"</li> </ul>	1
EXEC:past work experience	ED describes their career before getting involved in food banking	<ul style="list-style-type: none"> <li>"Before food banking I worked in industry"</li> </ul>	

GENERAL FB OPERATIONS	General FB operations describes FB practices which are not related or focused on fresh FV.	
GENFB:foodbudget	ED describes the current food budget.	<ul style="list-style-type: none"> <li>• “\$1 million of our 3 budget is used obtaining food”</li> </ul>
GENFB:donations	Describes the general state of donations to the FB without mentioning specific sources (grower, processor, retailer) or barriers/opportunities.	<ul style="list-style-type: none"> <li>• All of the produce is donated</li> <li>• No produce is donated</li> </ul>



Appendix D

Oklahoma State University Institutional Review Board  
**Request for Determination of Non-Research or Non-Human Subject**

*Federal regulations and OSU policy require IRB review of all research involving human subjects. Some categories of research are difficult to discern as to whether they qualify as human subject research. Therefore, the IRB has established policies and procedures to assist in this determination.*

**1. Principal Investigator Information**

First Name: Kayla	Middle Initial: E	Last Name: Castleberry
Department/Division: Public Health		College: Graduate College
Campus Address: N/A		Zip+4: N/A
Campus Phone: N/A	Fax: N/A	Email: kayla.castleberry@okstate.edu
<b>Complete if PI does not have campus address:</b>		
Address: 429 N. Park Hill Loop		City: Bartlesville
State: OK	Zip: 74006	Phone: 806-886-1542

**2. Faculty Advisor (complete if PI is a student, resident, or fellow)  NA**

Faculty Advisor's name: Julie Croff	Title: Director
Department/Division: Public Health	College: Graduate College
Campus Address: 429 Willard Hall	Zip+4: 74078+4
Campus Phone: 405-744-1850	Fax: 405-744-6756 Email: Julie.croff@okstate.edu

**3. Study Information:**

**A. Title**

Barriers and Opportunities to Providing Fresh Produce in Feeding America Food Banks: Executive Directors' Perspectives

**B. Give a brief summary of the project. (See instructions for guidance)**

This application is influenced by and sourced from the IRB application to the University of Oklahoma IRB, number 6473, approved 02/17/2016. This other IRB application is included as an additional material to this application.

This project will involve secondary analysis of a subset of the data from a larger study, commissioned by the University of California- San Francisco (UCSF), Feeding America, and the University of Oklahoma (OU).

The specific aims of this thesis are to:

- (1) In food banks with low local availability of fresh FV, define EDs' perceived barriers to providing fresh FV in Feeding America food banks, localizing these barriers to upstream or downstream processes.
- (2) In these same food banks, define EDs' ideas for opportunities to provide fresh produce in Feeding America food banks.
- (3) Describe EDs' perceptions of the role of food banks in promoting health through providing fresh FV.

This study will specifically look at EDs of food banks with low local availability of fresh produce through choosing only from this category of interviews in the larger study, as defined by acres of land used for fresh produce growth/person. The larger study used a purposive sampling scheme for maximum variation in 27 interviews with EDs of food banks based on the degree to which the food bank currently distributes fresh vegetables and fruits (percent produce), the local resources for fresh products (length of growing season,

Oklahoma State University Institutional Review Board  
**Request for Determination of Non-Research or Non-Human Subject**

acres/person), and the existing food bank capacity (budget/resources). The 9 EDs sampled in this thesis are all the EDs chosen within the low availability category from the larger study.

This study will analyze formal, in-depth, qualitative interviews with a representative sample of Feeding America EDs. Dr. Seligman from UCSF and Dr. Wetherill from OU performed/are performing these interviews. Interviews primarily occurred and will occur at annual conferences highly attended by Feeding America EDs in private rooms convenient to the conference site. Interviews were and will be recorded using an encrypted audio recorder. Interviews followed a semi-structured interview guide including open-ended main questions, followed by additional clarifying probes relevant to opportunities and/or barriers most relevant to the individual ED's food bank. The interview question path was pilot tested by Dr. Seligman with the San Francisco-Marín Food Bank ED. There are no planned follow-up procedures.

This thesis project will only be utilizing secondary data analysis of de-identified interviews. This thesis will include coding of the 9 interviews in the low availability category and analysis for common themes in barriers, opportunities, and perceptions on fresh fruit and vegetable provision by food banks. Themes will be determined both a priori and inductively. Analysis will be done using Atlas-ti (Germany) software.

- C. Describe the subject population/type of data/specimens to be studied. (See instructions for guidance)
- B. A list of EDs within the Feeding America Network was obtained from Feeding America and was used to identify potential participants for the larger study. Selected EDs were invited to participate by a letter and a follow-up e-mail. Since the population is among Feeding America food bank EDs, all subjects will be over the age of 18 and the final sample will be dependent upon the gender and race/ethnicity composition within this network.

The type of data analyzed will be de-identified qualitative interviews with the EDs of 9 Feeding America food banks. In writing this thesis, I will have no contact with human subjects directly and all transcripts will be de-identified. I will not have the key to the de-identified transcripts as a part of this thesis. During data collections, interviewers advised/will advise participants not to say their names, their food bank's names, or other identifiable information unless they wish to be identified in the transcript. Interviews have been/will be audiotaped using an encrypted audio recorder. In addition, no names or food bank names will be included in any of the published reports, scientific meetings, or this proposed thesis project. Twelve interviews were previously conducted by Dr. Seligman and have been transcribed and sent to Dr. Wetherill from the UCSF research staff using an electronic secure file transfer system. The remaining interviews have been or will be conducted by Dr. Wetherill at national conferences highly attended by Feeding America EDs or over the phone if necessary. These transcripts and audio files are saved on an encrypted computer at the OU College of Public Health. These servers are password protected and are backed up regularly. They will only be accessible to members of the OU research team. Files will be exchanged between the OU research team and myself using the OU Health Science Center electronic secure file transfer system. They will be further saved on a password-protected computer with an encrypted external hard drive. The hard drive will be stored in a secure place when not in use.

**4. Determination of "Research".**

**One of the following must be "no" to qualify as "non-research":**

- A. Will the data/specimen(s) be obtained in a systematic manner?  
 No  Yes
- B. Will the intent of the data/specimen collection be for the purpose of contributing to generalizable knowledge (the results (or conclusions) of the activity are intended to be extended beyond a single individual or an internal program, i.e. widely or universally applicable)?  
 No  Yes

**5. Determination of "Human Subject".**

- A. Does the research involve obtaining information about living individuals?

Revision Date: 09/2013

4 of 10

Oklahoma State University Institutional Review Board  
**Request for Determination of Non-Research or Non-Human Subject**

No  Yes

If no, then research does not involve human subjects, no other information is required.  
If yes, proceed to the following questions.

All of the following must be "no" to qualify as "non-human subject":

- B. Does the study involve intervention or interaction with a "human subject"?  
 No  Yes
- C. Does the study involve access to identifiable private information?  
 No  Yes
- D. Are data/specimens received by the Investigator with identifiable private information?  
 No  Yes
- E. Are the data/specimen(s) coded such that a link exists that could allow the data/specimen(s) to be re-identified?  
 No  Yes  
If "Yes," is there a written agreement that prohibits the PI and his/her staff access to the link?  
 No  Yes

6. Signatures

Signature of PI *Kayla Cately* Date 7/8/16

Signature of Faculty Advisor (If PI is a student) *Julie Goff* Date 7/8/16

Based on the information provided, the OSU-Stillwater IRB has determined that this project **does not** qualify as human subject research as defined in 45 CFR 46.102(d) and (f) and **is not subject to oversight by the OSU IRB**.

Based on the information provided, the OSU-Stillwater IRB has determined that this research **does** qualify as human subject research and **submission of an application for review by the IRB is required**.

*Hugh Crethar*  
Dr. Hugh Crethar, IRB Chair

7.11.16  
Date

## VITA

Kayla Erin Castleberry

Candidate for the Degree of

Master of Public Health

Thesis: "IT'S OUR RESPONSIBILITY:" A QUALITATIVE ANALYSIS OF EXECUTIVE DIRECTORS' PERSPECTIVES ON PROVIDING FRESH PRODUCE THROUGH THE FEEDING AMERICA NETWORK

Major Field: Public Health

Biographical:

Education:

Completed the requirements for the Master of Public Health at Oklahoma State University, Stillwater, Oklahoma in May, 2017.

Completed the requirements for the Bachelor of Science in Nutritional Sciences at Oklahoma State University, Stillwater, Oklahoma in 2015.

Experience:

FRESH Foods (CDC) Research Coordinator: University of Oklahoma, Tulsa, OK: August 2016-Present

- Research covered 30 interviews with Feeding America food bank EDs on opportunities and barriers to distributing fresh produce.
- Created code book for research analysis, coded interviews, helped prepare academic publications, helped report results to Feeding America for toolkit/policy development.

Nutrition Support: Tulsa CARES, Tulsa, OK: January 2015-August 2016

- Shopped for and stocking food pantry, including online ordering.
- Provided assistance to DTR/RD.

Tutor: Oklahoma State University, Stillwater, OK: July 2014-September 2015

- Assistance for nutrition and science courses via one-on-one sessions.