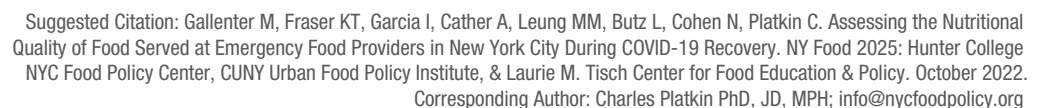


Assessing the Nutritional Quality of Food Served at Emergency Food Providers in New York City During COVID-19 Recovery



NEW YORK FOOD 2025

Assessing the Nutritional Quality of Food Served at Emergency Food Providers in New York City During COVID-19 Recovery

Acknowledgements

We would like to thank the participating food pantries for taking the time to participate in this study and capture photos of the contents of emergency food bags. We also would like to thank the research assistants who assisted in data collection and analysis for this study, including: Rachel Kim, Shanay Porter, and Jennifer Keys. Finally, thank you to early readers of this report and graphic designer John Kuehn.

New York Food 2025

This research brief is one part of a 5-part series of research briefs published as [New York Food 2025](#), a collective pursuit by the Hunter College NYC Food Policy Center, the Laurie M. Tisch Center for Food, Education & Policy, and the CUNY Urban Food Policy Institute to examine the effects of the pandemic on New York City's food policies and programs and propose specific policy measures the NYC Mayor and City Council can consider and implement to build a stronger, healthier, more just, and sustainable food system in New York City. This series of briefs builds on our group's earlier report, [New York Food 20/20: Vision, Research, and Recommendations During COVID-19 and Beyond](#), on the impact of the pandemic on New York City's food system and food workforce.

Background

At the onset of the COVID-19 pandemic, New York City ("NYC") agencies and community-based organizations worked quickly to provide emergency food relief to NYC residents ("New Yorkers").¹ However, a range of stakeholders (including people receiving emergency food) raised concerns about the nutritional quality and cultural appropriateness of food distributed by these emergency and institutional food programs.² A number of challenges emerged that prevented many emergency food providers ("EFPs") and institutional programs from consistently providing high quality, nutritious meals to New Yorkers over the course of the pandemic, including staffing shortages,³ limited infrastructure, supply chain disruptions,⁴ and food safety concerns.⁵

To support the long-term health of New Yorkers, stakeholders in the NYC food system must understand more about the nutritional quality of meals served through emergency and institutional providers. This is especially important given the extended nature of the COVID-19 crisis, the likelihood of future crises that will disrupt NYC's food system, and the extent to which many families rely on emergency food.

A number of well-established systems for promoting and measuring diet quality are present within NYC's infrastructure (e.g., [NYC Food Standards for Meals and Snacks](#) served at institutional providers,⁶ the annual [NYC Food Metrics Report](#)⁷). However, there is little systematically collected and publicly available data on the nutritional quality of food served in institutional settings, and even less data documenting food served at EFPs.



In response to the insufficiency of available data documenting the nutritional quality of meals and food products distributed at EFPs in NYC during the COVID-19 pandemic, researchers at the Hunter College New York City Food Policy Center (Hunter) and CUNY Urban Food Policy Institute (CUNY) developed and piloted a practical and efficient system to monitor the nutritional quality of food served at EFPs.”

Purpose

In response to the insufficiency of available data documenting the nutritional quality of meals and food products distributed at EFPs in NYC during the COVID-19 pandemic, researchers at the Hunter College New York City Food Policy Center (Hunter) and CUNY Urban Food Policy Institute (CUNY) developed and piloted a practical and efficient system to monitor the nutritional quality of food served at EFPs. The system uses the [NYC Food Standards](#) and [USDA's MyPlate](#)⁸ as guides to assess the nutritional quality of food served.



Study Overview

This pilot study was developed and implemented over a six month period in Summer and Fall 2021.

Outreach and Enrollment

Initial outreach soliciting participation was conducted using the [Hunter College NYC Food Policy Center's Neighborhood Food Resource Guide](#) internal database of NYC-based EFPs. An email inviting organizations to participate was sent to all EFPs in the database that had a contact email address (n=242). For the purpose of this study, EFPs included food pantries providing either fresh or shelf-stable food items as well as soup kitchens providing ready-to-eat meals. Two weeks after initial outreach, a targeted group of EFPs from the initial outreach list was contacted once more for a second round of outreach. This narrowed group was targeted in order to ensure a diverse sample of EFPs in regards to size, neighborhood, and client populations served. Twenty (20) EFPs responded to recruitment communications with interest, with a total of 12 EFPs ultimately agreeing to participate (5 percent participation rate).

Data Collection

Participating EFPs were asked to provide photos of food pantry bags and grab-and-go meals once per week over a 10-week period. Participating EFPs sent photos via email or text message when prompted with a request from project staff. Participating EFPs also completed a one-time survey using Google Forms providing details about the operations of their organization and the clientele they served.

Scoring and Analysis

To assess the nutritional quality of food served at EFPs based on submitted photos, a scoring rubric was developed guided by [USDA's MyPlate](#) and the [NYC Food Standards](#) (Table 1). The items shown in photos of pantry bags were categorized into nine types: Dairy, Fruit, Vegetables, Legumes/Beans/Nuts, Grains, Meat/Fish, Snacks, Beverages (not including Dairy beverages), and Ready-Pre

pared Meals. The photos of grab-and-go meals were categorized as Ready-Prepared Meals. Photos documenting food pantry bags were analyzed separately from photos documenting grab-and-go meals because the food pantry bags were analyzed by food products included and grab-and-go meals were analyzed exclusively using the “Ready-Prepared Meals” category of the scoring rubric.

Table 1. Photo scoring rubric for nutritional quality.

	Scores 5 points	Scores 4 points	Scores 3 points	Scores 2 points	Scores 1 point	Scores 0 points
Dairy	All products are 0% or low-fat dairy products	80% or more of products are low-fat or 0% dairy	50-79.9% of products are low-fat or 0% dairy	25-49.9% of products are low-fat or 0% dairy; high fat dairy products or flavored milks also provided	10-24.9% of products are low-fat or 0% dairy; high fat dairy products or flavored milks also provided	Less than 10% of dairy products are high fat dairy products or flavored milks, or no dairy products provided
Fruit	All fruit provided is fresh or frozen, canned in 100% juice or water, or sauce	80% or more of the fruit provided is: fresh, frozen, canned in water or 100% juice, or sauce	50-79.9% of the fruit provided is: fresh, frozen, canned in water, or 100% juice or sauce	25-49.9% of the fruit provided is: fresh, frozen, canned in water or 100% juice, or sauce	10-24.9% of the fruit provided is: fresh, frozen, canned in water or 100% juice, or sauce	Less than 10% of fruit provided is canned in syrup, dried fruit, or <100% juice, or no fruit provided
Vegetables	All vegetables provided are fresh or frozen, or low sodium canned	80% or more of the following: fresh, frozen, low sodium canned	50-79.9% of the following: fresh, frozen, low sodium canned	25-49.9% of the following: fresh, frozen, low sodium canned	10-24.9% of the following: fresh, frozen, low sodium canned	Less than 10% of vegetables are canned (not low sodium), or no vegetables provided
Legumes, Beans, Nuts	All legumes are low sodium canned, dried beans, or no sodium or sugar added nut butters or nuts	80% or more of legumes are low-sodium canned, dried beans, or no-sodium, no-sugar added nut butters or nuts	50-79.9% of legumes are low-sodium canned, dried beans, or no-sodium, no-sugar added nut butters or nuts	25-49.9% of legumes are low-sodium canned, dried beans, or no-sodium, no-sugar added nut butters or nuts	10-24.9% of legumes are low-sodium canned, dried beans, or no-sodium, no-sugar added nut butters or nuts	Less than 10% of legumes are sugar-coated or salted, nut butters with added sugar or salt, non-low-sodium canned options
Grains	All grains provided are 100% whole grains	80% or more of grains provided are 100% whole grains	50-79.9% of grains provided are 100% whole grains	25-49.9% of grains provided are 100% whole grains	10-24.9% of grains provided are 100% whole grains	Less than 10% of grains provided are 100% whole grain, or no grains provided
Meat and Fish	All products are ≥ 90% lean, low sodium, or in water (if canned)	80% or more of the following: ≥ 90% lean, low sodium, in water (if canned)	50-79.9% of the following: ≥ 90% lean, low sodium, in water (if canned)	25-49.9% of the following: ≥ 90% lean, low sodium, in water (if canned)	10-24.9% of the following: ≥ 90% lean, low sodium, in water (if canned)	Less than 10% of processed meats, high sodium options, canned meat or fish in oil
Snacks	No pre-prepared snacks provided	Less than 5% of the provided pantry bag (in units) consists of snacks	5-9.9% of the provided pantry bag (in units) consists of snacks	10-24.9% of the provided pantry bag (in units) consists of snacks	25-49.9% of the provided pantry bag (in units) consists of snacks	More than 50% of the provided pantry bag (in units) consists of snacks
Beverages	All beverages provided are 100% juice or water; or no beverages provided	80% or more of the beverages are water or 100% juice	50-79.9% of the beverages are water or 100% juice	25-49.9% of the beverages are water or 100% juice, others are juice from concentrate or other SSB	10-24.9% of the beverages are water or 100% juice, others are juice from concentrate or other SSB	Less than 10% of beverages are water or 100% juice, others are juice from concentrate or other SSB
Ready Prepared Meals	A prepared meal is provided, and it includes all of the following: MyPlate proportions, whole grains, lean proteins, and fruits or vegetables.	A prepared meal is provided, and it includes three of the following: MyPlate proportions, whole grains, lean proteins, and fruits or vegetables.	A prepared meal is provided, and it includes two of the following: MyPlate proportions, whole grains, lean proteins, and fruits or vegetables.	A prepared meal is provided, and it includes one of the following: MyPlate proportions, whole grains, lean proteins, and fruits or vegetables.	A prepared meal is provided, however the meal does not meet MyPlate standards nor does it include lean protein, whole grains, fruits or vegetables.	No prepared meals are provided

For each of the categories, a five-point score was developed. Photos that documented food served comprising $\geq 50\%$ fruits and vegetables earned a “bonus point.” Therefore, the total number of points possible for a given photo of a pantry bag is 46, and the total number of points possible for a photo of a grab-and-go meal is 6.

Each photo was scored by three research assistants. Scores were checked for consistency across research assistants using inter-class correlation, resulting in an [inter-rater reliability of 0.75](#), which is indicative of good reliability across the group.⁹ Scores were averaged to create a final score for each photo. Score quartiles were used to assign a rating of nutritional quality for each submission (Table 2).

Table 2. Score quartiles of submitted photos and rating of nutritional quality.

Score Quartile	Range of Scores	Nutritional Quality Determination
Q1	6.3 – 16.6	Unhealthy
Q2	16.7 – 22.7	Mostly unhealthy
Q3	22.8 – 25.1	Mostly healthy
Q4	25.2 – 32.0	Healthy



Results

Description of Participating EFPs

Participating EFPs operated as religious/spiritual organizations (n=4) and as stand-alone non-profit organizations (n=8). EFPs represented four NYC boroughs, 12 distinct zip codes, and eight different [Community Districts](#). Below is the number of participating EFP's across each of the five boroughs:

- Manhattan: 5
- Bronx: 4
- Brooklyn: 2
- Queens: 1
- Staten Island: 0

Using the [NYC Poverty Tool](#),¹⁰ 2 EFPs were determined to be located in underserved neighborhoods (>55% population in or near poverty), and 2 EFPs were determined to be located in affluent neighborhoods (<20% population in or near poverty). Though documenting poverty status of EFPs is important for descriptive purposes, it should be noted that EFP location does not necessarily determine the neighborhoods in which EFP clients reside. Many clients travel significant distances to pick up food from preferred pantries and many of the large EFPs provide food for community members outside of their immediate neighborhoods.

Participating EFPs reported serving an average number of 985 people each week, ranging from 75 (EFP D) to 3,000 (EFP J). Of the participating EFPs:

- Ten (10) were food pantries providing to-go bags of food.
- One (1) was a soup kitchen providing grab-and-go meals.
- One (1) was a food pantry/soup kitchen providing both food pantry bags as well as meals.

EFPs provided details about the specific clientele they serve:

- Twelve (12) EFPs reported serving older adults.
- Eleven (11) reported serving undocumented individuals.

- Six (6) reported serving unhoused people.
- Ten (10) reported serving families with young children.
- One (1) reported serving individuals living with HIV/AIDS.

EFPs also described the types of food they serve:

- Four (4) EFPs reported serving halal food.
- Three (3) EFPs reported serving kosher food.
- Seven (7) EFPs reported being vegetarian and vegan friendly.

Photo Data and Analysis

The 12 participating EFPs collectively submitted 61 photos. Please see the Appendix for all photos submitted by EFPs.

Of the participating EFP partners who submitted photos documenting food pantry distribution, 16.7% (n=2) submitted at least 10 photos across the data collection period (one per week). The average number of photo submissions per EFP was 5.5. Some partners submitted a single photo, and reported that the content of food served at the EFP was consistent, with no change by week. Note that absence of photos for every week does not necessarily indicate non-participation. Some EFPs operated on varying schedules, or experienced intermittent closures due to holidays conflicts in organization calendars.

Two EFPs submitted photos of grab-and-go meals. This included one EFP operating as a soup kitchen and one EFP that also submitted photos of pantry bags. Ultimately, we decided to omit analysis of grab-and-go meals due to the small sample size and limited conclusions attributable to the data.

- Based on the scoring rubric, the total number of points possible for each photo was 46.
- The lowest score a photo received was 6.3, and the highest score a photo received was 32.
- The mean score was 21.5, with a standard deviation of 6.1.

A weekly breakdown of each anonymized EFP's nutritional quality score is provided in Figure 1. Of the food pantry bags scored, only two EFPs had an average score in the Q1 (Healthy) range, two EFPs had an average score in the Q2 (Mostly Healthy) range,

four had an average score in the Q3 (Mostly Unhealthy) range, and three had an average score in the Q4 (Unhealthy) range. See photos 1 to 3 as example submissions from EFP D, the food pantry with the highest average score.

Figure 1. Nutritional quality of weekly food pantry bag products, by EFP.

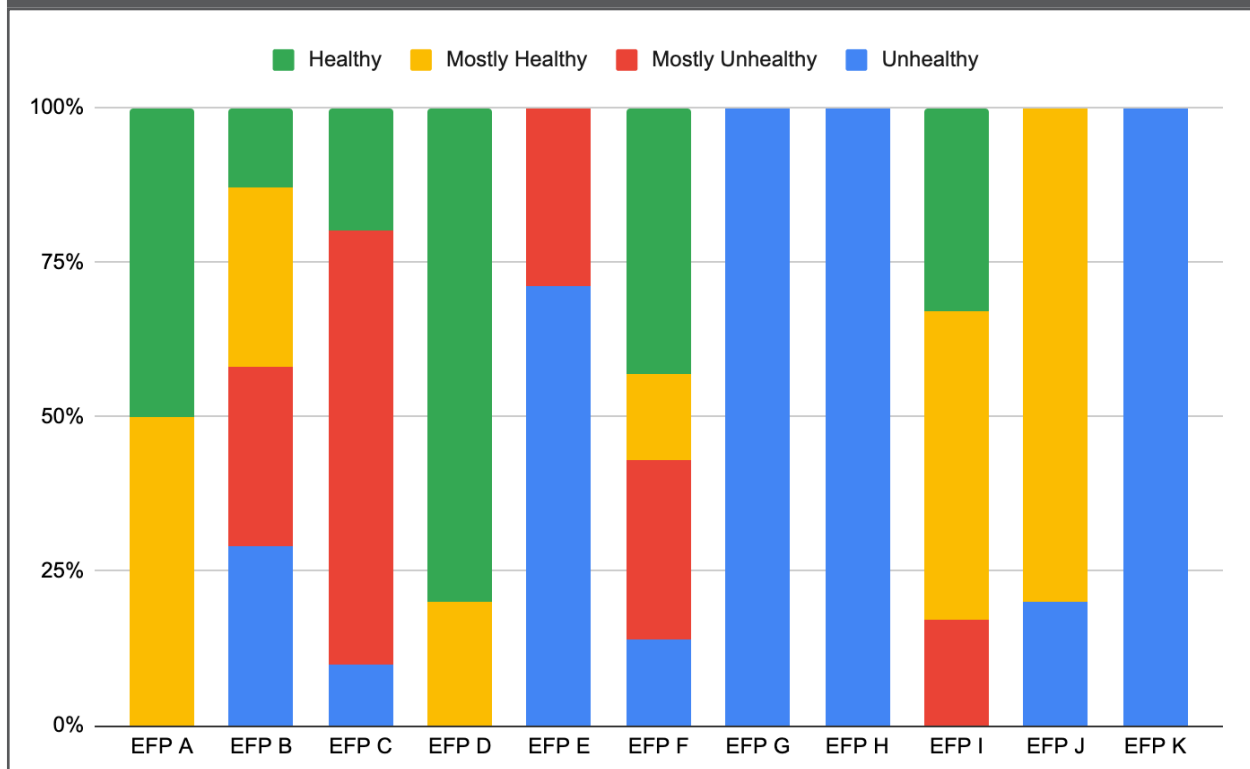




Photo 1. Contents of shelf-stable food pantry bag provided at EFP D during Week 1 of data collection. Items include (from left to right) ready-to-eat vegetable and grain cups, quick oats, canned tuna, black beans, shelled pecans, 1% milk, cups of fruit in 100% fruit juice, Toasted Oat cereal, cups of carrots in water, and ready-to-eat tuna packages.



Photo 2. Contents of fresh produce food pantry bag provided at EFP D during Week 1 of data collection. Items include (from left to right) bag of empire apples, lemons (3) and limes (3), pears (2), oranges (3), mangoes (2), beefsteak tomatoes (3), carrots (4), red potatoes (10 small), and kale.



Photo 3. Contents of [Nourish New York](#)-funded products provided at EFP D during Week 1 of data collection. Items include (from left to right) 3 individual cups of vanilla, low-fat yogurt, pita chips, jarred crushed tomatoes, whole grain pasta, cheddar cheese, and 32 oz vanilla, low-fat yogurt.



Photo 4. Partial contents of food pantry bag provided at EFP C during Week 1 of data collection. Items include (from left to right) Chips Ahoy cookies, avocados (5), Hershey's chocolate, belVita biscuit, orange (1), apples (4), chocolate bars (2), matzos (1 box), and bananas (2 bunches).

Table 3 shows the scores of each photo submitted by a participating EFP. Five of the participating food pantries provided food pantry bags with $\geq 50\%$ fruits and vegetables in every photo provided, earning the photo a bonus point. EFPs C, E, F, G, and J all received a bonus point for every photo submitted.

EFPs with the highest average scores generally provided fresh produce for most, if not all weeks included in the study analysis. EFPs with the lowest average scores generally did not provide fresh produce as frequently as higher scoring EFPs. Statistical analysis of this relationship reveals a correlation coefficient (R) between the average pantry score and the

percent of weeks with fresh produce is 0.6146, demonstrating a moderate association between produce provision and nutritional quality score.

However, not all bags containing $\geq 50\%$ fruits and vegetables were scored highly. Photo 4, submitted by EFP C, is an example of a food pantry that provided $\geq 50\%$ fruits and vegetables but also provided items such as chocolate and cookies. The nutritional quality of the other items in the pantry bags ultimately led to EFP C earning an average score of 19.8 (out of 46) and a 'Mostly unhealthy' nutritional quality rating.

Table 3. Average weekly score by week of Food Pantry photos, in order from lowest to highest average scores

Site (n=no. photos submitted)	Score per Photo (Average of three research assistants' scores)										Average Score	Average Nutritional Quality	Percentage of photos provided by EFPs that comprised of $\geq 50\%$ fruits and vegetables
	Wk. 1	Wk. 2	Wk. 3	Wk. 4	Wk. 5	Wk. 6	Wk. 7	Wk. 8	Wk. 9	Wk. 10			
H (n=3)	-	10.3	13.3	-	-	12.3	-	-	-	-	12.0	Unhealthy	50
K (n=1)	-	14.3	-	-	-	-	-	-	-	-	14.3	Unhealthy	0
E (n=7)	16.3	22.7	-	16.0	16.0	20.3	16.0	-	8.3	-	16.5	Unhealthy	100
B (n=7)	23.3	25.3	14.0	6.3	24.0	21.0	-	20.3	-	-	19.2	Mostly unhealthy	83.3
G (n=2)	19.7	18.7	-	-	-	-	-	-	-	-	19.2	Mostly unhealthy	100
C (n=10)	17.3	16.0	17.7	18.7	20.7	13.0	22.7	27.3	18.3	26.0	19.8	Mostly unhealthy	100
A (n=2)	-	24.0	18.9	-	-	-	-	-	-	-	21.5	Mostly healthy	50
J (n=5)	23.0	23.3	-	24.7	-	24.7	-	16.0	-	-	22.3	Mostly healthy	100
F (n=7)	-	27.7	25.0	29.3	24.7	-	18.3	16.7	16.3	-	22.6	Mostly healthy	100
I (n=6)	23.7	23.0	22.0	-	24.3	-	29.3	-	28.3	-	25.1	Healthy	50
D (n=10)	30.7	29.3	24.3	23.7	28.3	27.3	31.3	31.7	32.0	31.7	29.0	Healthy	80



This study demonstrated that participating EFPs in NYC varied widely in terms of the nutritional quality of food served.”

Discussion

This study demonstrated that participating EFPs in NYC varied widely in terms of the nutritional quality of food served. Many families rely on emergency food as major components of their diet,^{11,12} indicating the need for a varied and inclusive food pantry bag that offers healthy items within each of the primary food groups in order to provide individuals and families with a nutrient-rich diet.¹³

Widespread and consistent monitoring of the EFP network could ensure that food pantries and organizations providing food of nutritional quality are supported and given the resources/technical assistance (e.g., additional funding to purchase higher quality items, equipment to store fresh produce) they need to improve the nutritional quality of the foods they provide.

Participating EFPs that submitted more photos correlated with higher nutritional quality scores and EFPs that submitted fewer photos correlated with lower nutritional quality scores. Willingness and ability to participate in this project may be an indication of an EFP's increased resource capacity (i.e., more staff, volunteers, and greater resources). This increased resource capacity might also allow EFPs to acquire and distribute foods of higher nutritional quality. For example, a food pantry that has access to refrigeration space might be able to store and distribute fresh produce to the community, whereas a food pantry without that resource would likely have to forgo fresh produce and distribute canned fruits and vegetables instead.

One question that remains is to what extent an organization's characteristics (e.g., size, budget, procurement sources, number of people served) may impact nutritional quality of food served. Future studies should explore how these factors may influence the nutritional quality of food distributed at EFPs.

Limitations

Some photos submitted by EFPs were difficult to decipher (and therefore difficult to score) due to poor photo quality or placement of food products blocking one another. Though EFP partners were provided with examples of acceptable photo structure, it is possible that not all relevant EFP staff saw these examples as the staff submitting the photos may have varied each week. Some EFPs did not pre-bag their pantry items, instead allowing community members to choose their items each week. Choice at the individual level is likely to impact the content of each pantry bag, thus potentially impacting nutritional quality.

Additionally, this study was initially designed to also capture the content of prepared grab-and-go meals served at EFPs (such as soup kitchens). However, the project did not recruit a sufficient sample of sites that served grab-and-go meals to allow for meaningful analysis of them. The few photos of grab-and-go meals that were submitted did not include corresponding recipes, so research assistants were unable to accurately determine the nutritional content of the meals. For these reasons, we excluded analysis of grab-and-go meals, but in piloting this project we have learned important lessons about how best to capture this type of emergency food provided in future studies. We also intend for this to be scaled in the future as well, as our sample size was limited due to a low response rate.

Implications for Policy

This study piloted a practical and efficient method for monitoring the nutritional quality of foods served at a sample of EFPs in NYC. The methods for implementation can easily be scaled with a small amount of resources to engage more EFPs and cultivate a continually updated database documenting nutritional quality of food served at EFPs in NYC. Participation in the project required minimal commitment from both research staff and participating EFPs.

The findings of this study also demonstrate the need for policy changes at the City level. To learn more about potential policy solutions to the issues faced by EFPs in the City, please see the [NY Food 2025 Policy Briefs](#).



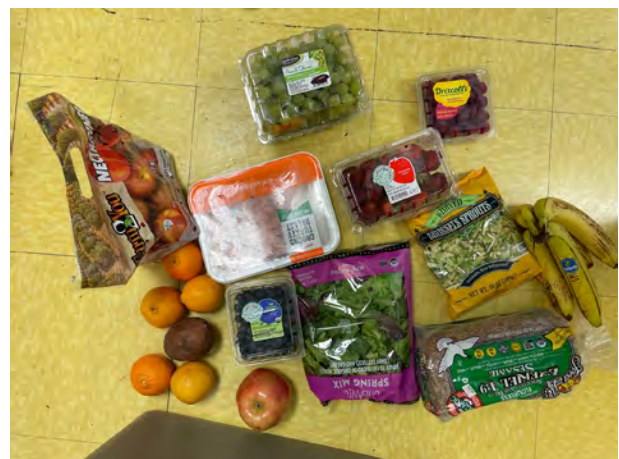
Policy Recommendations Include:

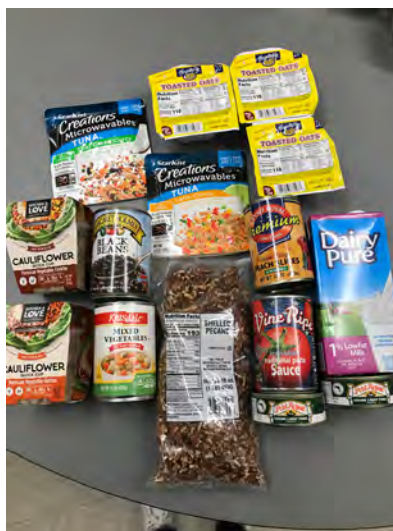
- 1. Ensure a universal definition for “healthy food” used by all NYC agencies and emergency food programs.** A central goal outlined in the 10-year food policy plan that was released by the Mayor’s Office of Food Policy (MOFP) is to ensure that all NYC residents have multiple ways to access healthy food; however the City lacks a universal definition for the term “healthy food” and its applied use in institutional and emergency food settings.
- 2. Require the monitoring and reporting of nutritional quality of food distributed across the EFP network in NYC.** Future interventions that aim to support nutritional standards at EFPs would benefit from similar methods and monitoring processes used in this study. The nutritional quality of food distributed across the EFP network is a critical metric that should be incorporated into the annual Food Metrics report released by the Mayor’s Office for Food Policy. The City should create a position within the Emergency Food Assistance Program for a full time staff person to oversee targeted technical assistance and resource allocation to EFPs to improve the nutritional quality of food distribution.
- 3. Improve the nutritional quality and cultural appropriateness of food provided by food assistance programs.** The City should allocate additional funding for emergency food providers to distribute fresh produce and accommodate the wide range of cultural and dietary needs of community members.
- 4. Strengthen the regional food system, and expand and create material to provide incentives and accountability for purchasing local and regional products by NYC agencies.** [Nourish New York](#) is an important program that supports the regional food system by connecting farmers to food banks for the purchase of surplus agricultural products such as produce, meat, eggs and dairy products. The City should create incentives to maximize participation by emergency food providers in this program, especially among smaller, less resourced pantries and soup kitchens.

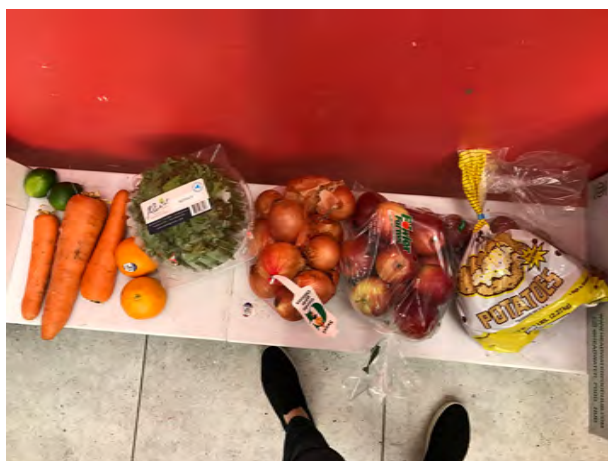
Appendix

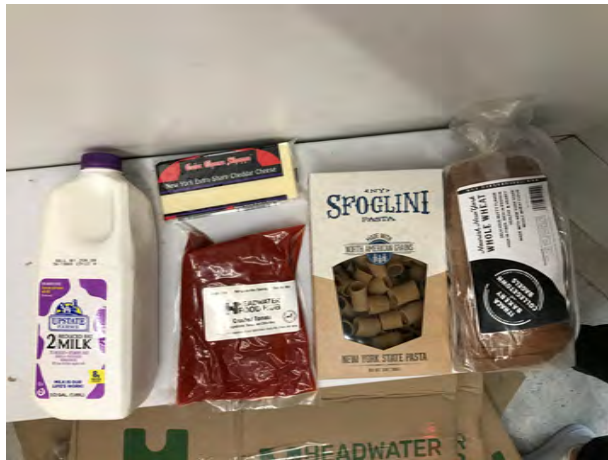
All photos submitted by EFPs are provided below. Note that not all EFPs provided photos for each week of data collection.

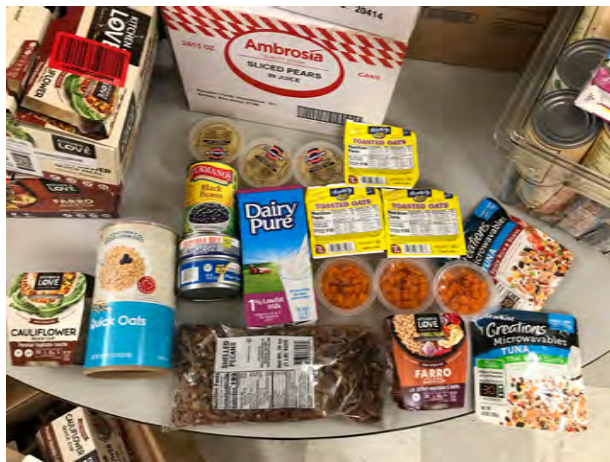








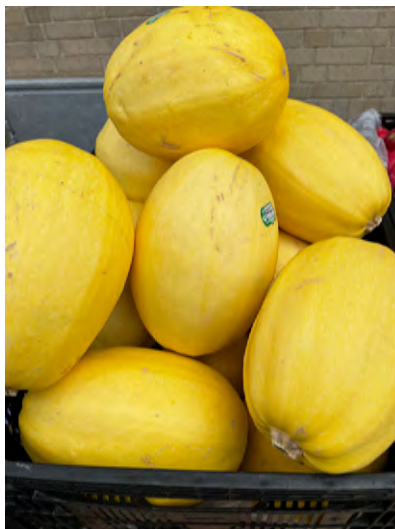




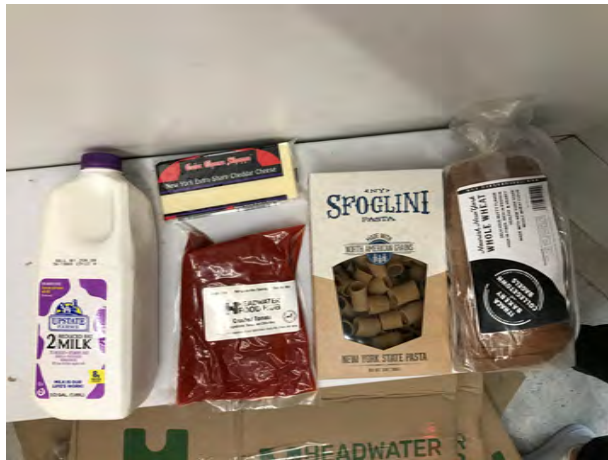


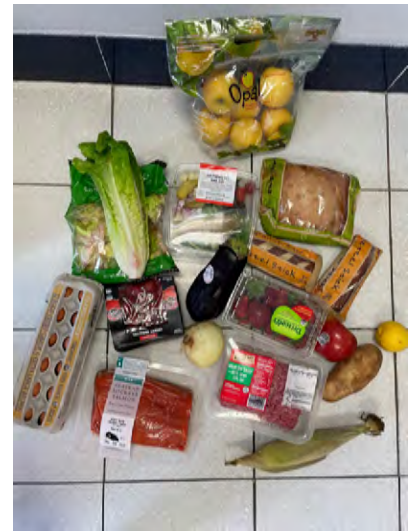




































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