Translating data into impact: baseline insights from a 21-site food as medicine program

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Center for Nutrition & Health Impact
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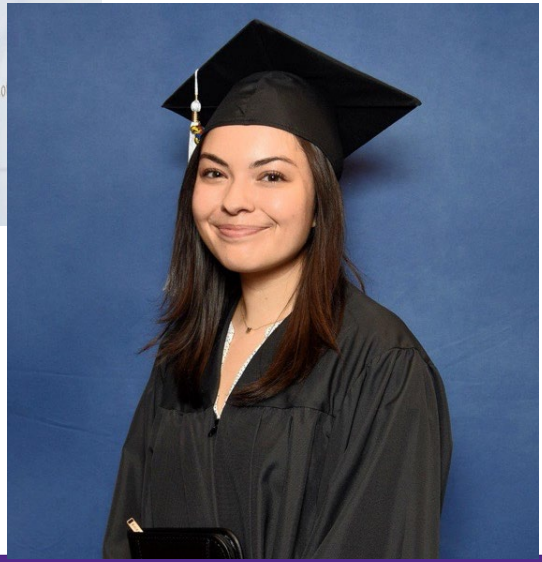
About Me

- Community Health B.S.E. from University of Kansas
- Began my career in public health philanthropy at Sunflower Foundation
  - Food is Medicine
  - Kansas Fights Addiction
  - Trails
- Transitioned to Center for Nutrition & Health Impact in 2024



Outline

- APE Site & Preceptor Background
- Literature Review Findings
- Project Description & Activities
- Results, Discussion, & Implications
- Products
- Competencies
- Acknowledgements & References

Center for Nutrition & Health Impact

- Established in the 1970s as the Swanson Center for Nutrition, Inc.
- Nonprofit research institute specializing in research and program evaluation, capacity building, & strategic planning
- Originally headquartered in Omaha, Nebraska; transitioned to fully remote in 2021
- Led by Dr. Amy Lazarus Yaroch

CENTER FOR Nutrition & Health Impact

Dr. Victoria Zigmont

- Health Services Research Scientist, Center for Nutrition & Health Impact
- Ph.D., Public Health, Ohio State University
- M.P.H., Health Promotion, Southern Connecticut State University
- Previous Chair for Food and Nutrition Section of the American Public Health Association

Literature Review Findings

- Chronic Disease in the United States
  - "*A condition that lasts one year or longer and requires ongoing medical treatment and/or restricts activities of daily living*" – Centers for Disease Control & Prevention
  - Almost 50% of U.S. adults have cardiovascular disease; 75% have at least one chronic condition
  - Treatment accounts for 90% of U.S. healthcare expenditures
  - Risk for chronic disease can be reduced through lifestyle changes such as healthy eating & physical activity

Image: "*Drug Aimed at Inflammation May Lower Risk of Heart Disease and Cancer*", Whitten Sabatini, 2017, *The New York Times*

Literature Review Findings

It's not always that simple…

Food Insecurity

Nutrition Insecurity

Image (left): Michelle X. Curran, 2013, North Shore Children & Families

Literature Review Findings

- Food/Nutrition Security and Chronic Disease
  - Food/nutrition insecurity raises risk for chronic disease & vice versa
  - Food/nutrition insecurity = public health challenges
  - Public health activities account for 3% of U.S. healthcare spending
- How can we leverage healthcare to address both chronic disease & food insecurity?
  - Food is Medicine

Literature Review Findings

- Food is Medicine (FIM)
  - A movement to close the gap between healthcare and nutrition
  - Leverages the value of nutritious foods to **prevent AND manage** chronic disease
  - Addresses both medical and public health issues

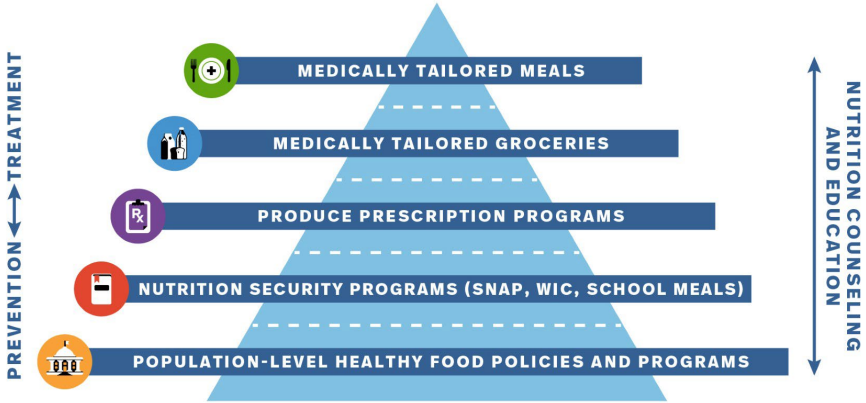


Image: FIM Fact Sheet, 2023, Tufts University Food is Medicine Institute

Literature Review Findings

- FIM in Practice
  - Development of partnerships between healthcare systems and community-based organizations (CBOs)
    - Healthcare systems: screen, refer, track outcomes
    - Community-based organizations: enroll, provide services, patient tracking
  - Challenges:
    - Administrative burden on CBOs
    - Lack of standardization
    - Sustainability?

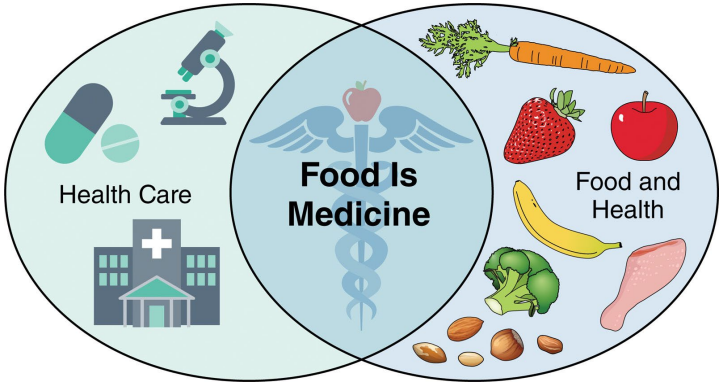


Image: "Food Is Medicine sits between the health care sector and food and health.", 2023, American Heart Association

Project Description & Activities

- Food as Medicine 3.0 (FAM3)
  - Third iteration of a multi-year (2023-26) grant program funded by Elevance Health & administered by Feeding America
    - 21 food bank grantees with multiple healthcare partners
  - Goal is to support food bank-healthcare partnerships to:
    - expand food insecurity screening
    - reduce barriers to food assistance
    - strengthen evidence for FIM models

Elevance Health | Foundation

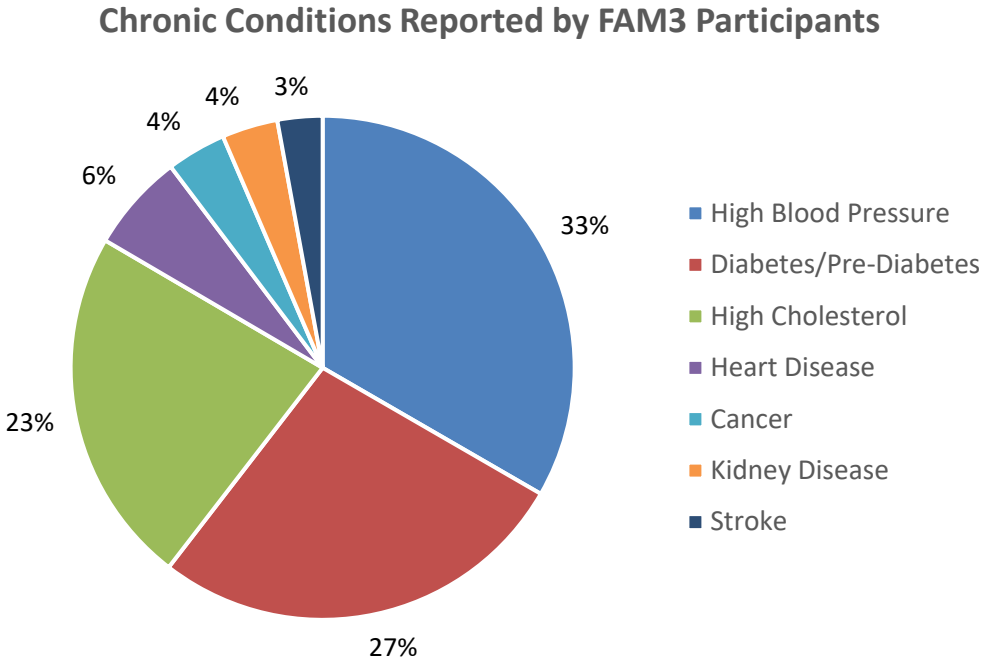
FEEDING AMERICA

Project Description & Activities

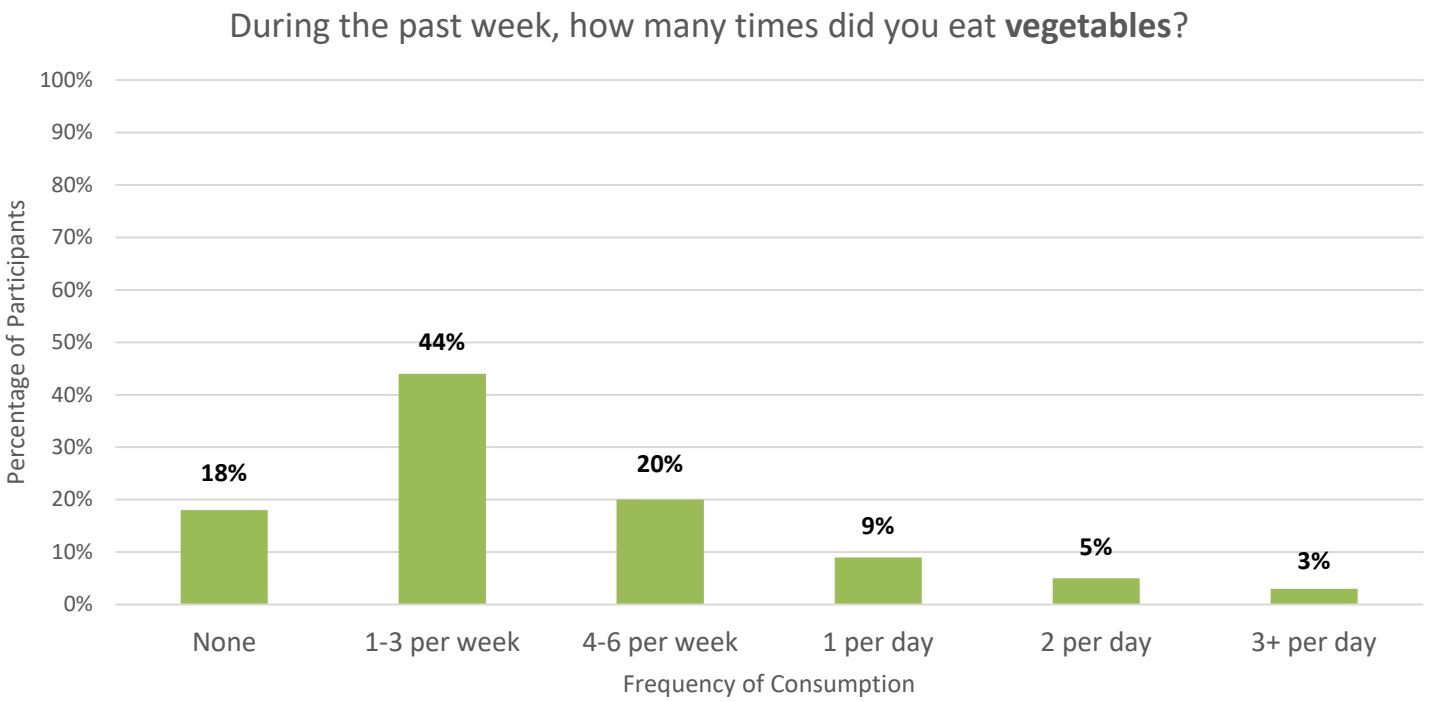
- Purpose of APE
  - Analyze baseline survey data and develop tailored one-pagers to support data transparency & program sustainability for food bank grantees
- Activities
  - Analyze 3,000+ baseline surveys using statistical software
  - Develop 20 tailored program summary one-pagers
  - Collaborate with multi-sector stakeholders for deliverable review and finalization

Results, Discussion, & Implications

- Data Analysis
  - Descriptive statistics generated using R & Stata for 3,000+ baseline surveys
  - Measures included:
    - Demographics
    - Health conditions
    - Public assistance participation
    - Healthcare utilization
    - Dietary habits
    - Quality of life

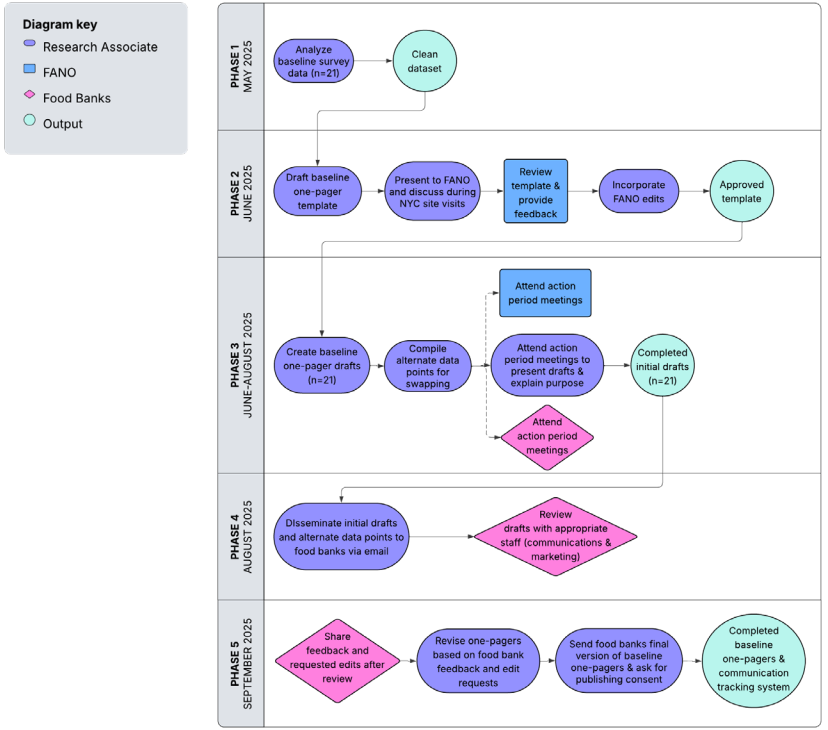


Results, Discussion, & Implications



Results, Discussion, & Implications

- One-Pager Development
  - Template created in Canva and approved
  - Selected indicators varied by food bank
  - Multi-stakeholder review & revisions
  - Final dissemination



Results, Discussion, & Implications

- Challenges
  - Inconsistent variable naming necessitated in-depth data cleaning
  - Missing data due to paper survey administration
  - Unexpected delays in stakeholder review
  - Conflicting communication needs based on stakeholder type

Results, Discussion, & Implications

- Interpretation
  - FAM3 largely serves BIPOC communities with low socioeconomic status and high burden of chronic disease
  - Despite this, there is low participation in SNAP and WIC
  - Provides justification for FIM programming in these regions

- Lessons Learned
  - Standardize variables before data collection
  - Budget extra time during project planning for unexpected delays
  - Competing needs from multi-sector stakeholders require delicacy and careful discussion

Results, Discussion, & Implications

- Implications for FIM
  - CBOs carry the burden of implementation and evaluation despite often lacking resources
  - Evaluation should return value to CBOs & support reciprocal partnership
  - Data transparency should be emphasized for both reciprocity and sustainability

Image: Feeding America National Office

Feed More

FOOD AS MEDICINE 3.0 GRANT SNAPSHOT

PROGRAM OVERVIEW

Since 2018, Feed More has been partnering with local safety-net hospitals, health districts, Federally Qualified Health Centers, and free clinics to provide Food as Medicine services in the Central Virginia area. Through 30 sites in 16 localities, Feed More's partnerships focus on food insecurity screening to supply food boxes onsite and referrals to ongoing food resources.

PROGRAM MODEL

Healthcare staff at partnering organizations can provide patients who have screened positive for food insecurity with a healthy shelf stable food box to take home. Additionally, staff can refer patients to the Feed More Help Line to connect them with Feed More's network of food resources and programs, including SNAP application assistance.

PARTICIPANT REACH

APR. 2023 - DEC. 2024

4,275+
patients screened positive for food insecurity

~3,750
patients received food from the program

Anthem Foundation

Feed More is a recipient of Elevance Health Foundation (Anthem Blue Cross and Blue Shield)'s Food as Medicine 3.0 grant, a three-year program supporting partnerships between food banks and healthcare providers to screen patients for food insecurity and connect them with nutritious food resources. This document presents findings from the first two years of this initiative, one of many health and nutrition programs conducted by the food bank.

When entering the program, participants reported the following...[1]

QUALITY OF LIFE

Many participants are experiencing significant challenges across key areas of daily functioning and well-being:

- **Usual Activities**: 17% are moderately to severely limited or unable to perform their usual activities.
- **Pain/Discomfort**: 42% experience moderate to extreme pain or discomfort.
- **Mental Health**: 36% report feeling moderately to extremely anxious or depressed.

HEALTHCARE UTILIZATION

In the past 3 months, one-third of participants visited an emergency room. Also, approximately a quarter of participants reported delaying/skipping necessary medical services and/or running out of medications due to cost. Feed More addresses these barriers by providing healthy foods to support chronic disease management and improve overall health.

1 IN 3 VISITED THE EMERGENCY ROOM

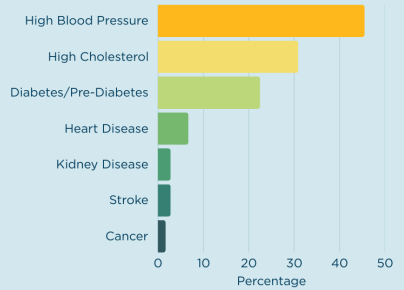
1 IN 5 COULD NOT AFFORD MEDICAL SERVICES OR MEDICATIONS

Further research and health outcomes from this evaluation will be shared in summer of 2026. Reach out to Allison Hallberg (ahallberg@feedmore.org) at Feed More to learn more and connect.

HEALTH CONDITIONS

60% of participants who enrolled in the program reported at least one chronic condition. High blood pressure was the most prevalent, reported by just under half of participants. High cholesterol followed, reported by approximately one-third of participants. Feed More's FAM3 program is designed to treat these chronic conditions using the health benefits of nutritious foods.

*Prevalence of **Health Conditions** Among Participants*



PUBLIC ASSISTANCE

90% of participants reported using at least one form of public assistance, such as health insurance benefits or food-purchasing programs. For example, just under half of participants are SNAP recipients and over half are on Medicaid. Participation in programs like FAM3 could improve participants' health and quality of life while reducing healthcare costs charged to Medicaid.

[1]preliminary analysis of data spanning 2023-25; intervention concludes in 2026
[2]sample sizes may vary due to missing data

St. Louis Area Foodbank

FOOD AS MEDICINE 3.0 GRANT SNAPSHOT

PROGRAM OVERVIEW

St. Louis Area Foodbank (SLAFB) partners with SSM Health System to provide food markets at hospitals across the city's metropolitan area. Participants receive healthy food bags and a referral to the food bank if desired. SLAFB SNAP outreach coordinators then connect participants to nearby food pantries as well as SNAP, WIC, and government-funded food resources.

PROGRAM MODEL

In partnership with seven hospitals in the SSM Health system, medical professionals screen patients for food insecurity. Those who screen positive are referred to the Bread Basket Program—an in-hospital food pantry, located in a limited-access area within the hospital, that provides low-sodium, shelf-stable foods. Upon discharge, each eligible patient receives a Bread Basket bag to take home. Simultaneously, a social worker can refer the patient—via a digital platform—to the St. Louis Area Foodbank (SLAFB), if desired. Within 72 hours, a SLAFB Community Access Coordinator contacts the patient to share local food pantry locations and provide assistance with public benefits applications.

PARTICIPANT REACH

APR. 2023 - DEC. 2024

~1,800
patients screened positive for food insecurity

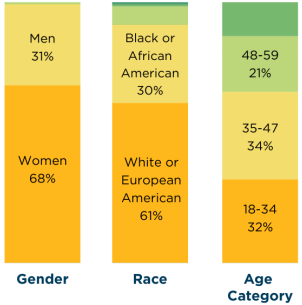
440+
patients referred to SNAP

Anthem Foundation

St. Louis Area Food Bank is a recipient of Elevance Health Foundation (Anthem Blue Cross and Blue Shield)'s Food as Medicine 3.0 grant, a three-year program supporting partnerships between food banks and healthcare providers to screen patients for food insecurity and connect them with nutritious food resources. This document presents findings from the first two years of this initiative, one of many health and nutrition programs conducted by the food bank.

When entering the program, participants reported the following...[1]

DEMOGRAPHICS



RACE LEGEND

White/European American
Black/African American
Multiracial
Hispanic/Latino
American Indian/Alaskan Native

A total of 131 individuals participated in the baseline FAM3 survey.[2] Women represented 68% of participants, and the average age was 43 years.

HEALTH CONDITIONS

Almost two-thirds of participants reported at least one chronic condition. High blood pressure was the most prevalent, reported by just under half of participants. Diabetes & pre-diabetes followed at 29%, and high cholesterol at 28% making them the second and third-most common diagnoses, respectively. SLAFB's FAM3 program is designed to treat these chronic conditions using the health benefits of nutritious foods.

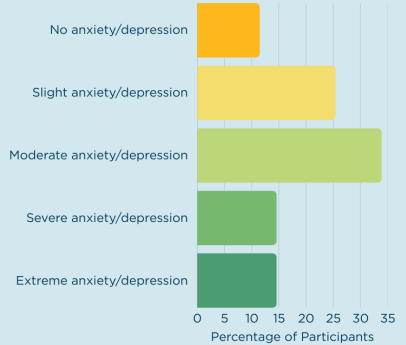
Further research and health outcomes from this evaluation will be shared in summer of 2026. Reach out to Rachel Jones (rjones@stlfoodbank.org) at St. Louis Area Food Bank to learn more and connect.

QUALITY OF LIFE

Many participants are experiencing significant challenges across key areas of daily functioning and well-being:

- **Usual Activities**: 28.5% are moderately to severely limited or unable to perform their usual activities.
- **Pain/Discomfort**: 50% experience moderate to extreme pain or discomfort.
- **Mental Health**: 63.1% report feeling moderately to extremely anxious or depressed.

When asked about their **anxiety or depression**, participants reported...



HEALTHCARE ACCESS & UTILIZATION

In the past 3 months, over 70% of participants either visited an emergency room or required overnight hospitalization. Additionally, over half of participants reported running out of medication or delaying/skipping medical care due to cost barriers. SLAFB addresses these barriers by providing healthy foods to support chronic disease management and improve overall health.

[1]preliminary analysis of data spanning 2023-25; intervention concludes in 2026
[2]sample sizes may vary due to missing data

Freestore Foodbank

FOOD AS MEDICINE 3.0 GRANT SNAPSHOT

PROGRAM OVERVIEW

Freestore Foodbank's Food as Medicine program focuses on 15 clinic-based food pantries across various partner health systems. Most locations have a choice pantry, while others offer patients pre-packed boxes. Some clinics also provide patients with produce vouchers for Freestore's mobile produce truck, or offer pop-ups to their patients and community. Healthcare system partners also refer patients to Freestore's Direct home-delivery produce program.

PROGRAM MODEL

Health care partners conduct a food insecurity screening upon patient intake. If a patient screens positive or indicates that they are in need, the staff provides them with food from the pantry and/or referrals to other Freestore programs. Patients complete preference sheets to customize the foods they receive. At each clinic appointment, the patient receives a healthy food bag with three to four days of food.

PARTICIPANT REACH

APR. 2023 - DEC. 2024

10,500+

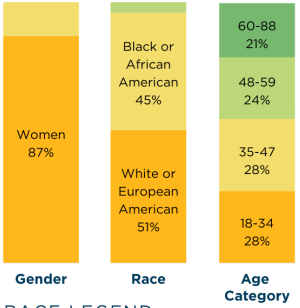
patients screened positive for food insecurity and received food from the FAM3 program

Anthem Foundation

Freestore is a recipient of Elevance Health Foundation (Anthem Blue Cross and Blue Shield)'s Food as Medicine 3.0 grant, a three-year program supporting partnerships between food banks and healthcare providers to screen patients for food insecurity and connect them with nutritious food resources. This document presents findings from the first two years of this initiative, one of many health and nutrition programs conducted by the food bank.

When entering the program, participants reported the following...[1]

DEMOGRAPHICS



RACE LEGEND

White/European American · Black/African American · Hispanic/Latino

A total of 76 individuals participated in the baseline FAM3 survey.[2] Women represented 87% of participants, and the average age was 45 years.

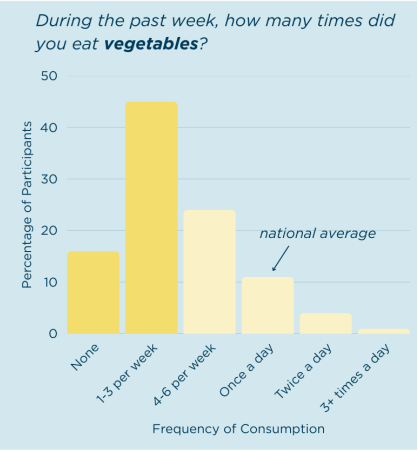
PUBLIC ASSISTANCE

95% of participants reported using at least one form of public assistance, such as health insurance benefits or food-purchasing programs. For example, over half of participants are SNAP recipients and almost two-thirds are on Medicaid. Participation in programs like FAM3 could improve participants' health and quality of life while reducing healthcare costs charged to Medicaid.

Further research and health outcomes from this evaluation will be shared in summer of 2026. Reach out to Ann Viancourt (AViancourt@FreestoreFoodbank.Org) at Freestore to learn more and connect.

DIETARY HABITS

Vegetable intake was low, with 61% of participants consuming vegetables 3 times or less in the previous week; the same percentage reported similarly limited fruit consumption. **This is below the national average fruit & vegetable intake, which is once per day for vegetables and 1.6 times per day for fruit.** Freestore aims to support fruit and vegetable consumption by providing both shelf stable and fresh produce options to help meet patients' dietary needs and preferences.



HEALTH CONDITIONS

71% of participants enrolled in the program reported at least one chronic condition. 53% had been diagnosed with high blood pressure. 38% reported a diagnosis of diabetes or pre-diabetes. Freestore's FAM3 program is designed to treat these chronic conditions using the health benefits of nutritious foods.

[1]preliminary analysis of data spanning 2023-25; intervention concludes in 2026
[2]sample sizes may vary due to missing data

MPH Foundational Competencies

Competency	Description of Attainment
(3) Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate	The **baseline survey analysis** demonstrates competency in analyzing quantitative data using statistical software. Survey responses were compiled, cleaned, and organized into an Excel spreadsheet. Descriptive analyses were conducted in **R and Stata.**
(18) Select communication strategies for different audiences and sectors	The baseline one-pagers demonstrate the application and selection of various communication strategies for diverse audiences involved in FIM programming. The one-pagers needed to be **accessible and easy to understand** for those not formally trained in public health research methods. **Visual elements** such as charts and photos were used to support **interpretation of data** and the personalization of each deliverable.
(19) Communicate audience-appropriate public health content, both in writing and through oral presentation to a nonacademic, non-peer audience with attention to factors such as literacy and health literacy	The one-pagers also demonstrate the ability to communicate complex research findings in a format appropriate for non-academic audiences. Statistical findings were conveyed using **clear narrative summaries and visual representations**. Language choices emphasized **clarity and readability** while maintaining **scientific accuracy.**
(21) Integrate perspectives from other sectors and/or professions to promote and advance population health	The development of the one-pagers involved **collaboration** with an array of national **professionals from different fields**, and each stakeholder group brought **different priorities** and expertise. Developing the finalized one-pagers meant balancing these perspectives while maintaining clarity and cohesion in the final deliverables.

Public Health Nutrition Emphasis Competencies

Competency	Description of Attainment
(2) Compare and relate research into practice	Both the analysis outputs and one-pagers demonstrate the ability to convey complex research findings into practical public health applications. **Existing literature on food insecurity, diet-related chronic disease, and FIM informed the interpretation of survey results**. These results were then **translated into program materials** that will be used by food banks to communicate program justification and community characteristics.
(4) Analysis of human nutrition principles	The baseline survey analysis required applying **principles of nutrition epidemiology** to interpret dietary patterns and health outcomes within the participant population. Measures such as fruit and vegetable consumption, chronic disease prevalence, and food insecurity status were examined to understand nutritional risk factors that impact program participants. Interpretation of these indicators **required knowledge of nutritional guidelines and the relationship between diet quality, food access, and chronic disease risk** at a population level.

Acknowledgements

- Committee Members:
  - Dr. Priscilla Brenes, PhD
  - Dr. Valerie Padilla Carroll, PhD
  - Dr. Valetina Trinetta, PhD
- Preceptor & FAM3 Team:
  - Dr. Victoria Zigmont, PhD, MPH
  - Dr. Eric Calloway, PhD, RDN
  - Dr. Christopher Long, PhD
  - Dr. Bailey Houghtaling, PhD, MS, RDN
  - Dr. Eliza Short, PhD, RDN
  - Ashleigh Floyd Clark, MPH
  - Clare Milburn Atkinson, MPH
  - Maryan Isack, MS
  - Laura Flournoy, MS
- Feeding America National Office Team:
  - Perri Kramer, MEM
  - Hannah Schultz, MA
  - Hanna Selekman, LSW
  - Angela Berry, MPA
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- FAM3 Food Bank Grantees
- KSU MPH Office
  - Dr. Ellyn Mulcahy, PhD, MPH
  - Plern Kongsamut, MFA
- My fiancé, Matthew Ruether
- My parents, Rich & Brenda Talavera

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Any questions?

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