

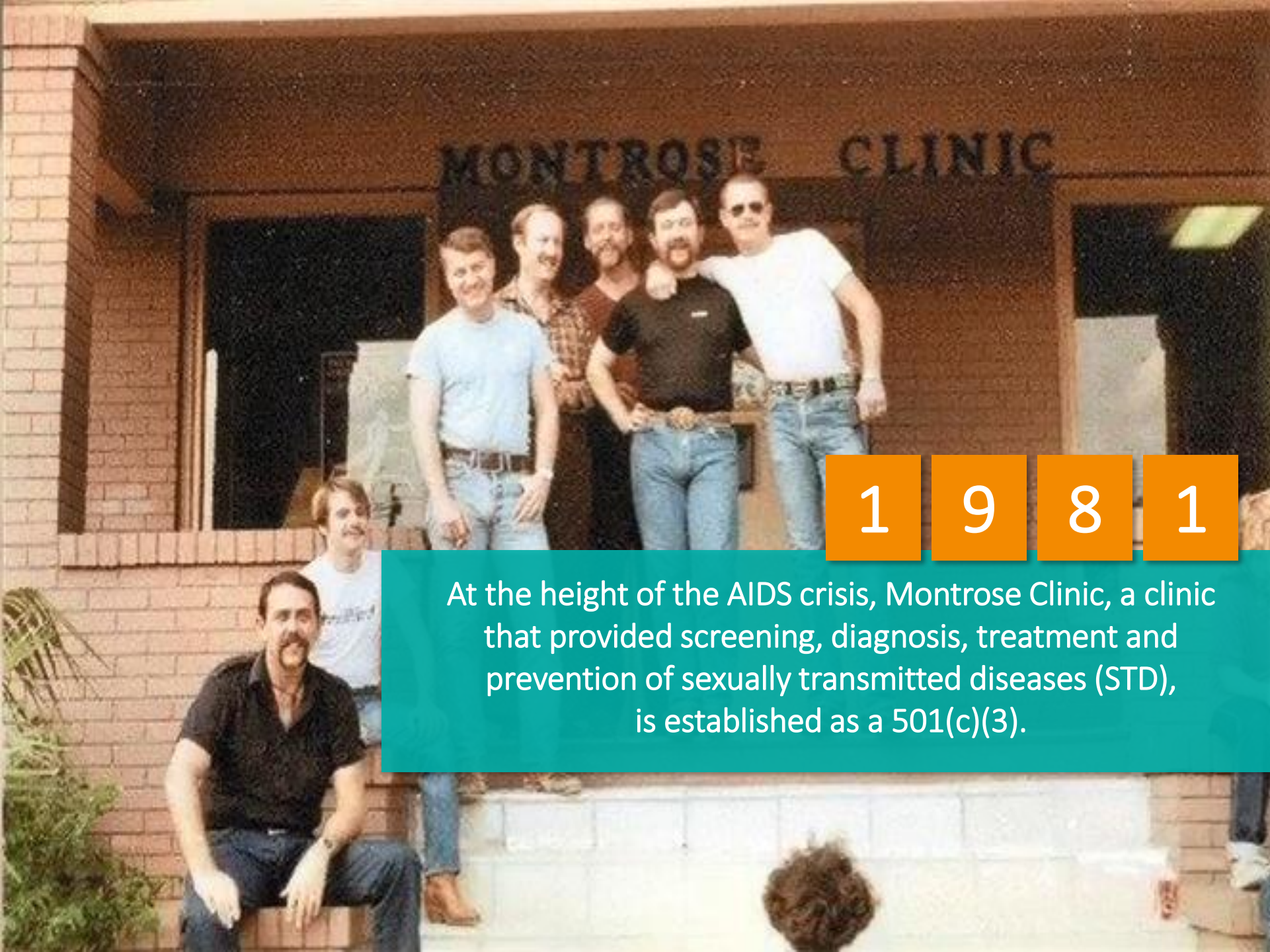


Texas Consortium *for the*
Non-Medical Drivers of Health

Advancing Research, Policy and Practice

Food Is Medicine Programs in Health Systems: Where Should We Begin?

The Legacy Story



1 9 8 1

At the height of the AIDS crisis, Montrose Clinic, a clinic that provided screening, diagnosis, treatment and prevention of sexually transmitted diseases (STD), is established as a 501(c)(3).



2 0 2 3

58

Locations across Baytown,
Beaumont, Deer Park and Houston



1500+

Legacy employees serving the
community



More than **180,000** patients
served annually and over

1 Million

community members served
over our 40 year history

Legacy by the Numbers

42%

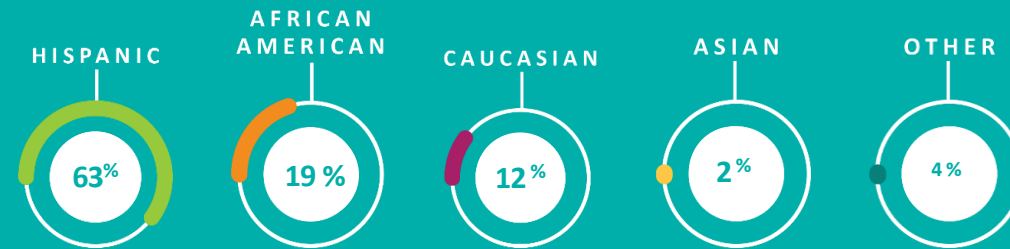
of our patients live at or below 100% of the federal poverty level

599,333

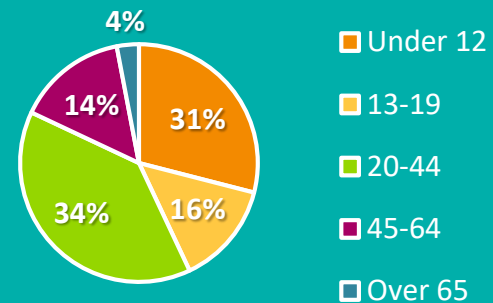
Completed Appointments

200,543

Community members served annually



Patient Age



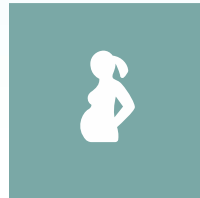
Our Continuum of Care – PCMH Model



Adult
Medicine



Family
Medicine



OB/GYN &
Maternity



Pediatrics



Senior Care



Behavioral
Health



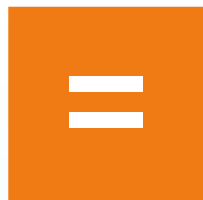
Dental



Vision



HIV/STD Screening,
Prevention &
Treatment



LGBTQ+ Health
Services



Vaccines &
Immunizations

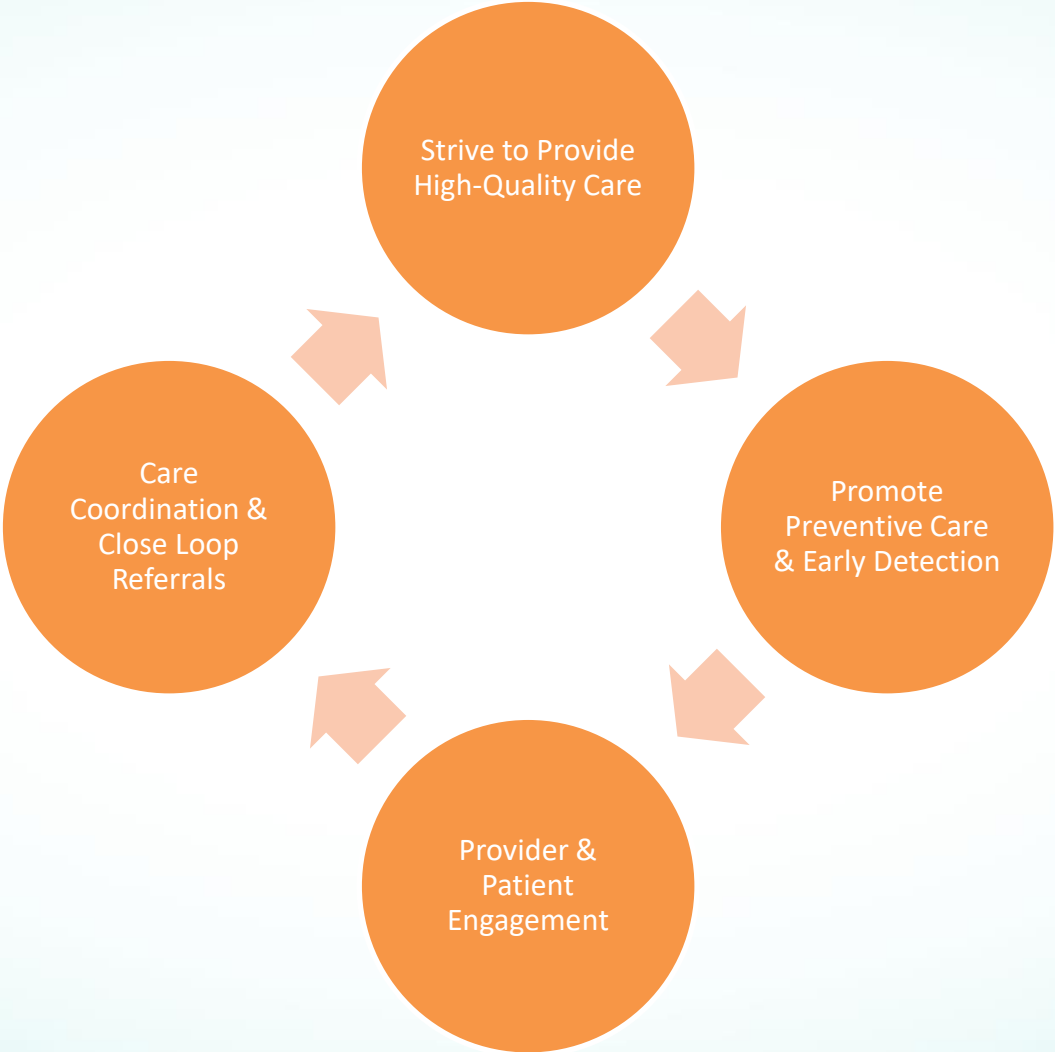


Pharmacy

Additional Services

- Adolescent Care
- Eligibility & Enrollment
- Endocrinology
- Gender Health & Wellness
- Health Promotion & Education
- Patient Navigation & Linkage to Care
- Public Health Services
- School-Based Health Care
- Social Services

Our Care Management Department



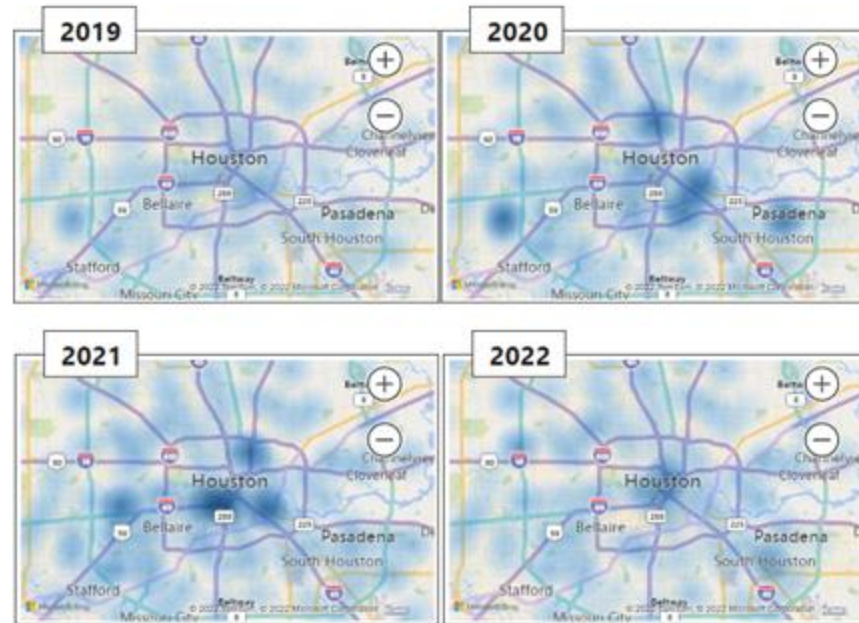
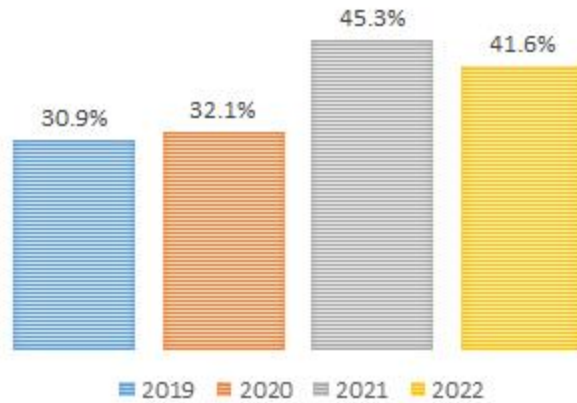
Starting a Food is Medicine Program

SNAPSHOT

- Find a leader(s) that is passionate within your organization;
- Identify or create a network of subject matter experts;
- Craft a vision and program
- Give stakeholders and decision-makers space to ask questions, review research, and set realistic expectations;
- Overcome barriers, language, and cultural differences by considering best practices in health equity

Food Insecurity Screenings

FOOD INSECURITY RATES BY YEAR

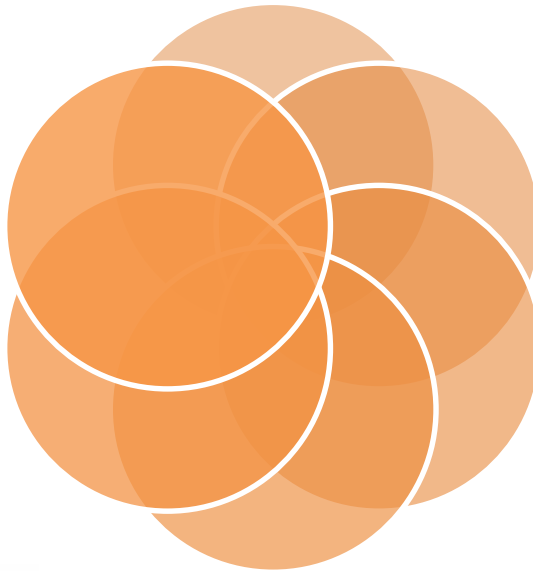


Implementing a Food is Medicine Program

Focused on the patient experience & better health outcomes

Scheduled Monthly Check-Ins

Targeted patients w/ Well Visits



Identified our “unicorn” clinic

Site Leadership

Provider Champions

Patient Population

Drafted MOU/Data Sharing Agreement w/CBO

Trained Staff, Interns, & AmeriCorps Members

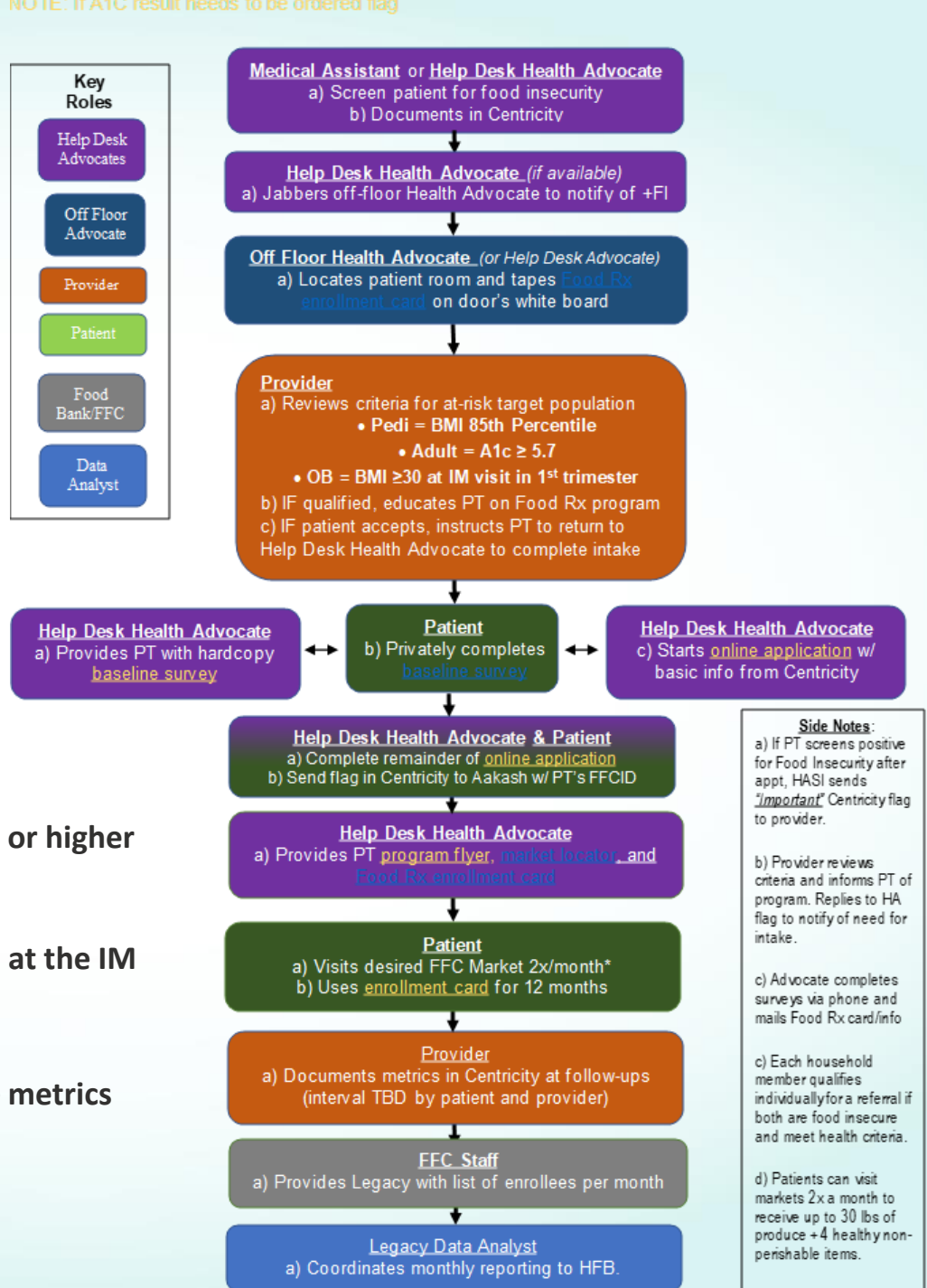
Food Rx



The target population for referrals will include:

1. Pediatric patients with a BMI at the 85th percentile or higher
2. Adult patients with an A1c of 5.7 or higher
3. OB patients with a BMI greater than or equal to 30 at the IM visit in the first trimester

The goal is to see a stabilization or reduction in these metrics over the course of 12 months.



Side Notes:

a) If PT screens positive for Food Insecurity after appt, HASI sends **"important"** Centricity flag to provider.

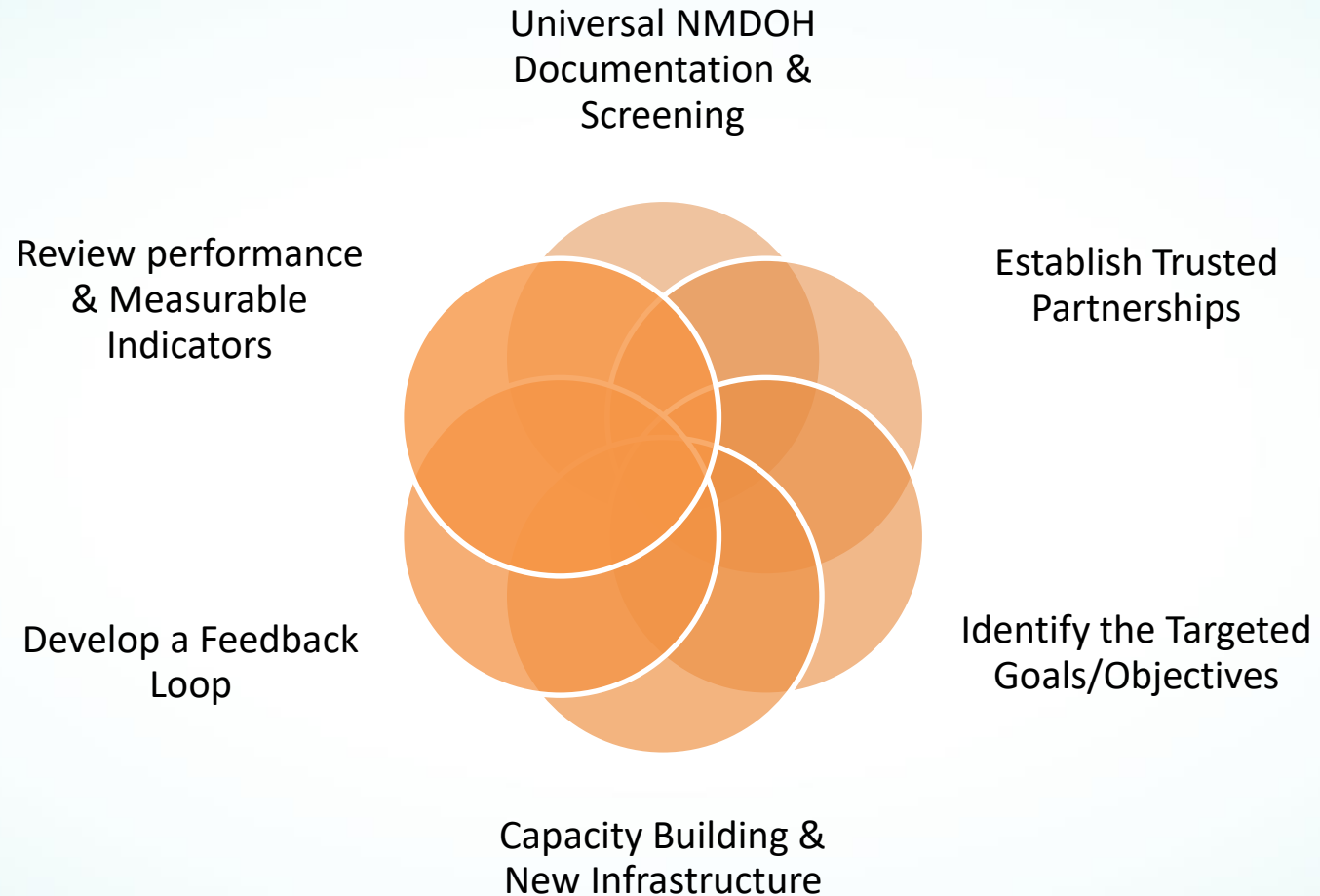
b) Provider reviews criteria and informs PT of program. Replies to HA flag to notify of need for intake.

c) Advocate completes surveys via phone and mails Food Rx card/info

c) Each household member qualifies individually for a referral if both are food insecure and meet health criteria.

d) Patients can visit markets 2x a month to receive up to 30 lbs of produce + 4 healthy non-perishable items.

Opportunities & Challenges



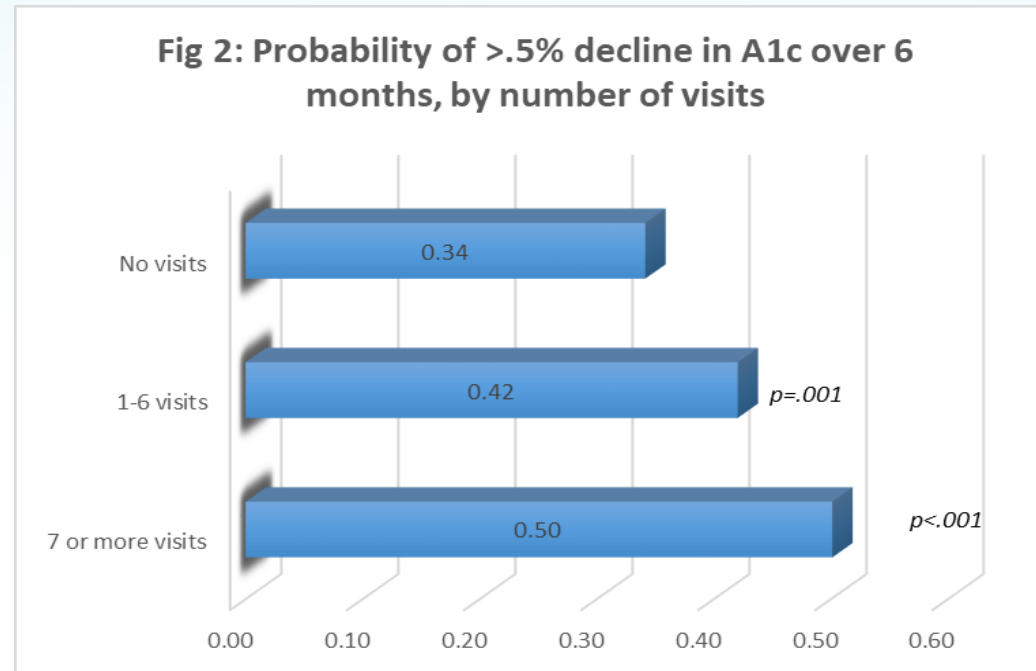
Houston Food Bank Partners with UTHealth Houston for Evaluation of Food Rx

	Control Pre-post difference	Treatment Pre-post difference	Net difference	p-value
A1c (n=746)	-0.24	-0.52	-0.28	0.007
BMI (n=857)	0.25	0.11	-0.13	0.653
LDL (n=216)	-4.3	-5.4	-1.2	0.606
Systolic (n=508)	1.4	-1.8	-3.2	<0.001
Diastolic (n=507)	1.6	-0.95	-2.5	0.028

Statistically significant decreases in HbA1c, SBP and DBP among those who participated in the Food Rx program, as compared to those who were enrolled but did not participate.

Source: Ranjit, N, Aiyer JN, Toups J, Liew E, McWhorter JW, Sharma S. Cardiometabolic impacts of a large-scale, partnership-based regional food prescription program. Under review.

Houston Food Bank-UTHealth Houston for evaluation of Food Rx Magnitude of A1c change may depend on number of pantry visits



A clear dose response effect of the number of pantry visits on the probability of a clinically significant decline in HbA1c. At the highest level of ‘dosage’, half of exposed patients experienced a clinically significant decline in HbA1c.

Source: Ranjit, N, Aiyer JN, Toups J, Liew E, McWhorter JW, Sharma S. Cardiometabolic impacts of a large-scale, partnership-based regional food prescription program. Under review.

Houston Food Bank-UTHealth Houston for evaluation of Food Rx Intensity Matters

	HbA1c	BMI	LDL	Systolic Blood Pressure	Diastolic Blood Pressure
Change in outcome by intensity of exposure (visits per month)	-0.12 (0.04)	0.11 (0.11)	1.8 (0.7)	-1.45 (0.6)	-0.43 (0.47)
<i>p-value</i>	<i>0.09</i>	<i>0.397</i>	<i>0.018</i>	<i>0.016</i>	<i>0.356</i>

The results for the intensity measure (number of pantry visits per month) show that every additional visit per month is associated with significant improvements in levels of HbA1c, systolic blood pressure, and significant negative impacts on LDL levels.

Source: Ranjit, N, Aiyer JN, Toups J, Liew E, McWhorter JW, Sharma S. Cardiometabolic impacts of a large-scale, partnership-based regional food prescription program. Under review.

Thank You



William Lyons, LCSW-S
Sr. Manager of Programs, Health Connect
Wlyons@Legacycommunityhealth.org

UTHealth Houston

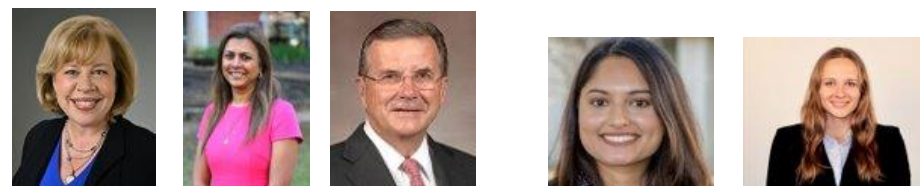
SANDRA MCKAY, MD, FAAP

PRAJAKTA YERAGI, MD

UTHealth Population Health Initiative

- Core Workgroups with co-leads of DOP and SPH/HTI
- Graduate Research Student, Medical Student support (Mathur, Stark)
- Internal Advisory Board

- 24+ faculty, 70+ scholarly products, \$640k+ in grants awarded



Produce prescriptions



Produce prescription programs are gaining traction in the U.S. to improve diet quality

Produce prescription programs show positive impacts on fruit and vegetable intake, child and adult food security, and diabetes and obesity outcomes, with potential to address health inequities among vulnerable populations

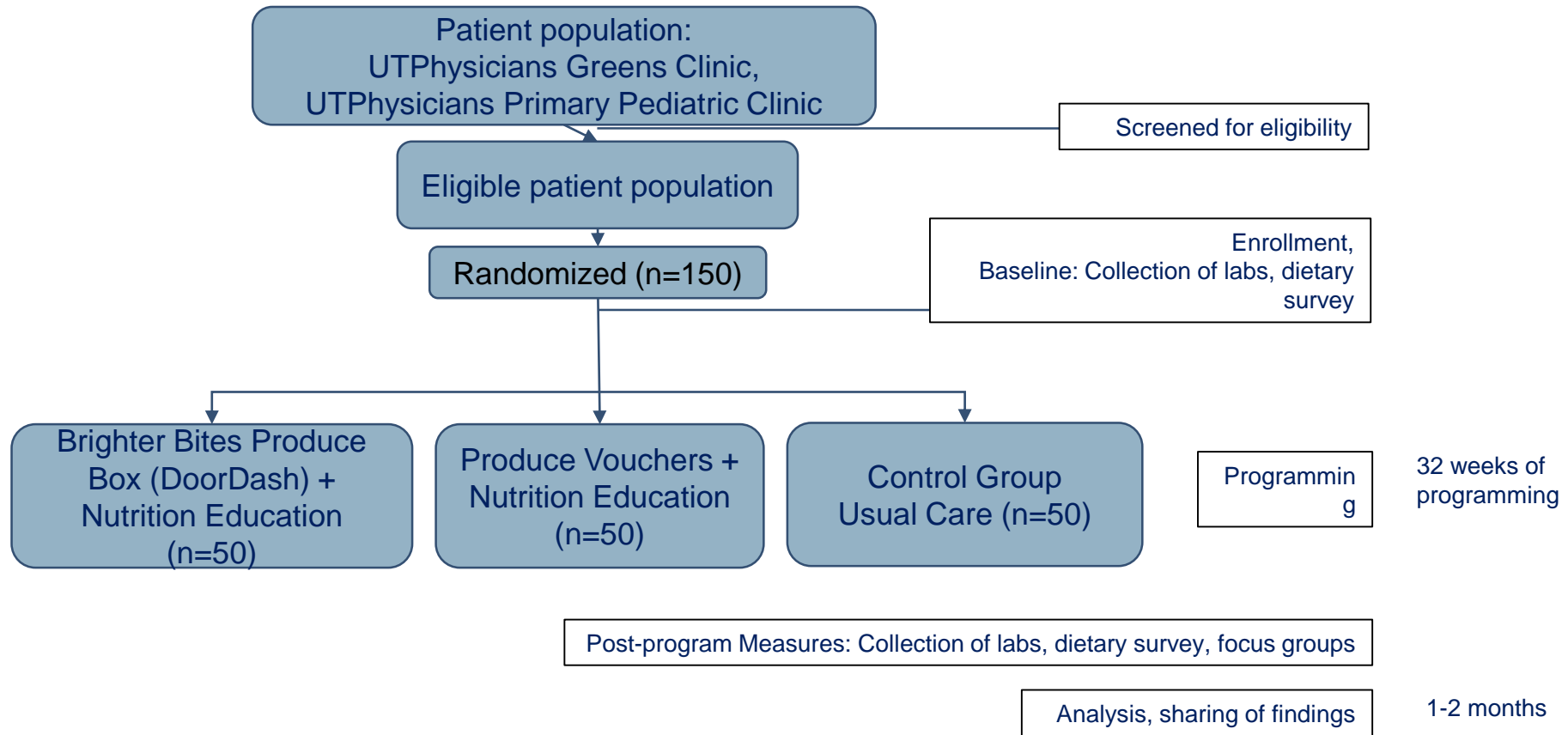
Limited studies evaluating Produce Rx programs in the pediatric setting

Produce prescription programs require strong healthcare, community, and academic partnerships to be successful.

Study Overview

- Randomized control trial (RCT) study
- Pilot study being conducted at UTPB Pediatrics clinic and UTP Green's clinic
- Clinically evaluate the feasibility and preliminary implementation outcomes, and effectiveness of two different produce prescription strategies (Produce box and produce vouchers) in improving obesity-related outcomes and dietary behaviors among a cohort of Medicaid-eligible children aged 5-12 years old

Project Schematic



Eligibility Criteria

- **Inclusion Criteria**

- Patient at UT Physicians Greens Clinic or UT Physicians Pediatric Primary Care in Houston, Texas
- BMI > 85th percentile
- Age 5-12 years
- Within a 10-mile radius of a Brighter Bites school (Delivery radius for Door Dash)
- Medicaid eligible
- Parents able to read/write in English or Spanish to complete surveys

- **Exclusion criteria**

- Patient or family member were currently participating in Brighter Bites at the time of recruitment
- Patient was currently attending a school that offers Brighter Bites programming

Intervention Components

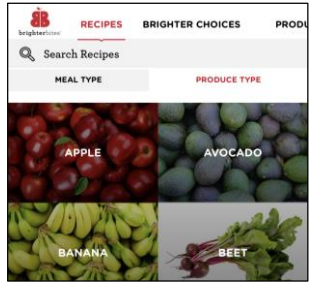
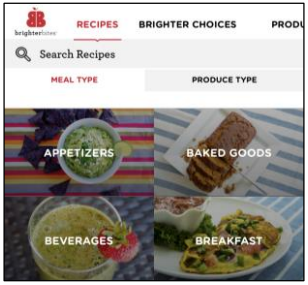
- **Produce Boxes**
 - Home delivery via Door Dash
 - 16 deliveries, every 2 weeks



- **Fresh Produce Card**
 - Plastic physical gift card
 - \$25 for fresh produce
 - 16 reloads, every 2 weeks
 - 6 Retailers: - Kroger - Randall's
- Walmart - CVS - Walgreens - Dollar General



- **Brighter Bites Programming**
 - **Nutrition Education**
 - Printed Handbook
 - Brighter Bites app



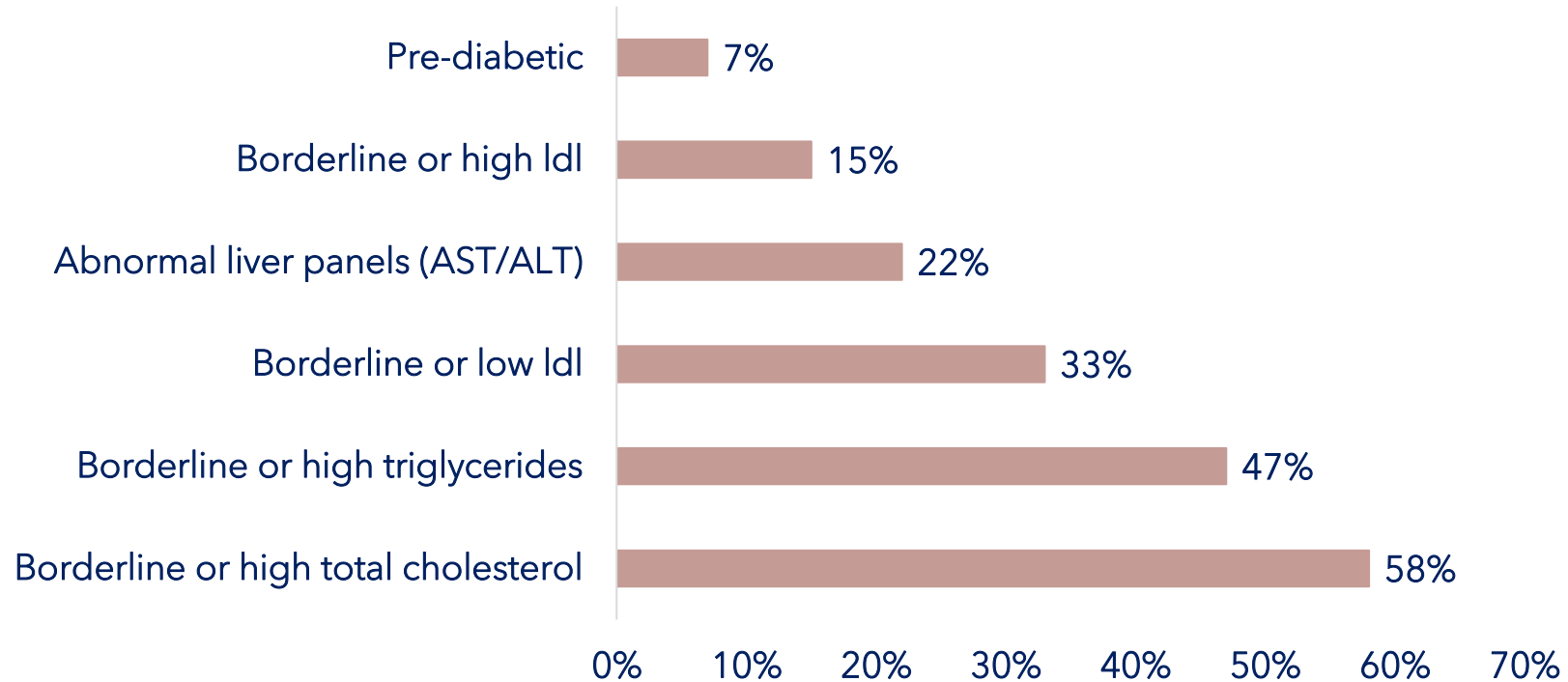
Data gathered/Measures

Measurement Instrument/ Data source	Components Measured	Data
Brighter Bites pre/post survey	Child dietary intake	Child FV intake (parent report)
	Parent dietary intake	Parental FV intake (parent self-report)
	Parent feeding behaviors	<ul style="list-style-type: none"> • frequency of preparing foods from scratch • use of nutrition facts label to make purchasing decisions • eating meals with their referent child
Clinic records	Health outcomes	BMI, weight, blood pressure, hemoglobin A1c, aspartate aminotransferase (AST), alanine transaminase (ALT), and lipid panels (standard for children with a BMI>85 th percentile) (EMR)
	Food insecurity/SDOH	Food insecurity/SDOH
Focus groups with parents	Program satisfaction Acceptability Program improvement	<ul style="list-style-type: none"> • insight into the experience of families receiving produce vouchers or fresh produce boxes • identify possible strategies for program improvement • understand how parents perceive that the intervention activities impacted their families.

Baseline demographic characteristics

- Average age at recruitment 9.0 years, 51% male, 37% identified as Hispanic, 46% identified as Black
 - All participants on Medicaid Managed Care Plans
 - Average BMI percentile: 96.2
- Of those parents that completed the survey (N=124):
 - 92.0% were female parent/caregiver
 - 95.0% reported being on a government assistance program besides Medicaid
 - 62.9% reported having a high school graduate degree or less
 - 62.1% reported being food insecure
 - 27.6% reported being nutrition insecure (compromised quality)

Percentage of children reporting abnormal blood work values at baseline (N=150)



FUTURE PLANS



- Assess implementation outcomes and preliminary impact on clinical, social and behavioral outcomes
- We are likely to see positive outcomes from this study and then expand it to a larger RCT involving more clinics to determine program impact

OUR TEAM

Allison Marshall, PhD, UTHealth Cizik School of Nursing
Mallika Mathur, MPH, UTHealth School of Public Health

Shreela Sharma, PhD, UTHealth School of Public Health

Christine Markham, PhD, UTHealth School of Public Health

Ru-Jye Chuang, DrPH, UTHealth School of Public Health

Mike Pomeroy, MPH, Brighter Bites

Azar Gaminian, MPH, Brighter Bites

Sandra McKay, MD, UTHealth Department of Pediatrics

Prajakta Yeragi, MD, UTHealth Department of Pediatrics

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Katrina Cazsett, UTHealth McGovern Medical School

Maria Andrea Algeria, UTHealth McGovern Medical School

Matthew Law, UTHealth McGovern Medical School

Leah Jeemon, UTHealth McGovern Medical School

Sarah Pacinda, UTHealth McGovern Medical School

Alisha Sansguri, UTHealth McGovern Medical School

Elizabeth Langley, UTHealth McGovern Medical School

Ariana Mc Clendon, UTHealth McGovern Medical School

Addressing Food/Nutrition Insecurity with Medically Tailored Meals and more

Program structure, timeline and metrics

September 2023

Usha Kollipara, MS RD CLSSMBB

Care Transformation & Innovation



Southwestern Health Resources



- Who we are
- Business case and evidence based ROI
- Food insecurity program
 - Community partnerships
 - Medically tailored meals
 - Member facing resources
 - Metrics for success
- Next steps

SWHR Population Health Services

- SWHR population health services supports our providers with tools, resources, education, research and data focused on improving quality and reducing inefficiency, as well as patient interventions and education.

Physician Network

1,800+

UT Southwestern
Faculty Physicians

600+

Texas Health Physician
Group Physicians

2,500+

Affiliated
Physicians

Population Health Services



Data Analytics



Care Coordination



Utilization Management



Referral Management



Patient Experience

Providing Services to Support the Continuum of Care



Food Insecurity and affect on health outcomes



- Food insecurity is associated with higher disease burden, especially diabetes and heart diseases.
- Peer-reviewed evidence suggests, in members with complex health conditions and addressing food insecurity improves health outcomes such as
 - improved diabetes control, ¹
 - blood pressure control, ¹
 - improved BMI, and
 - reduced ED and hospital visits. ²

1. Case Study. Impacting SDOH through cross-sector collaboration. Reading Hospital Tower Health. 2022

2. Berkowitz SA et al. Association Between Receipt of a Medically Tailored Meal Program and Health Care Use. JAMA Intern Med. 2019; 179(6):786-793.

Addressing food insecurity improves clinical outcomes

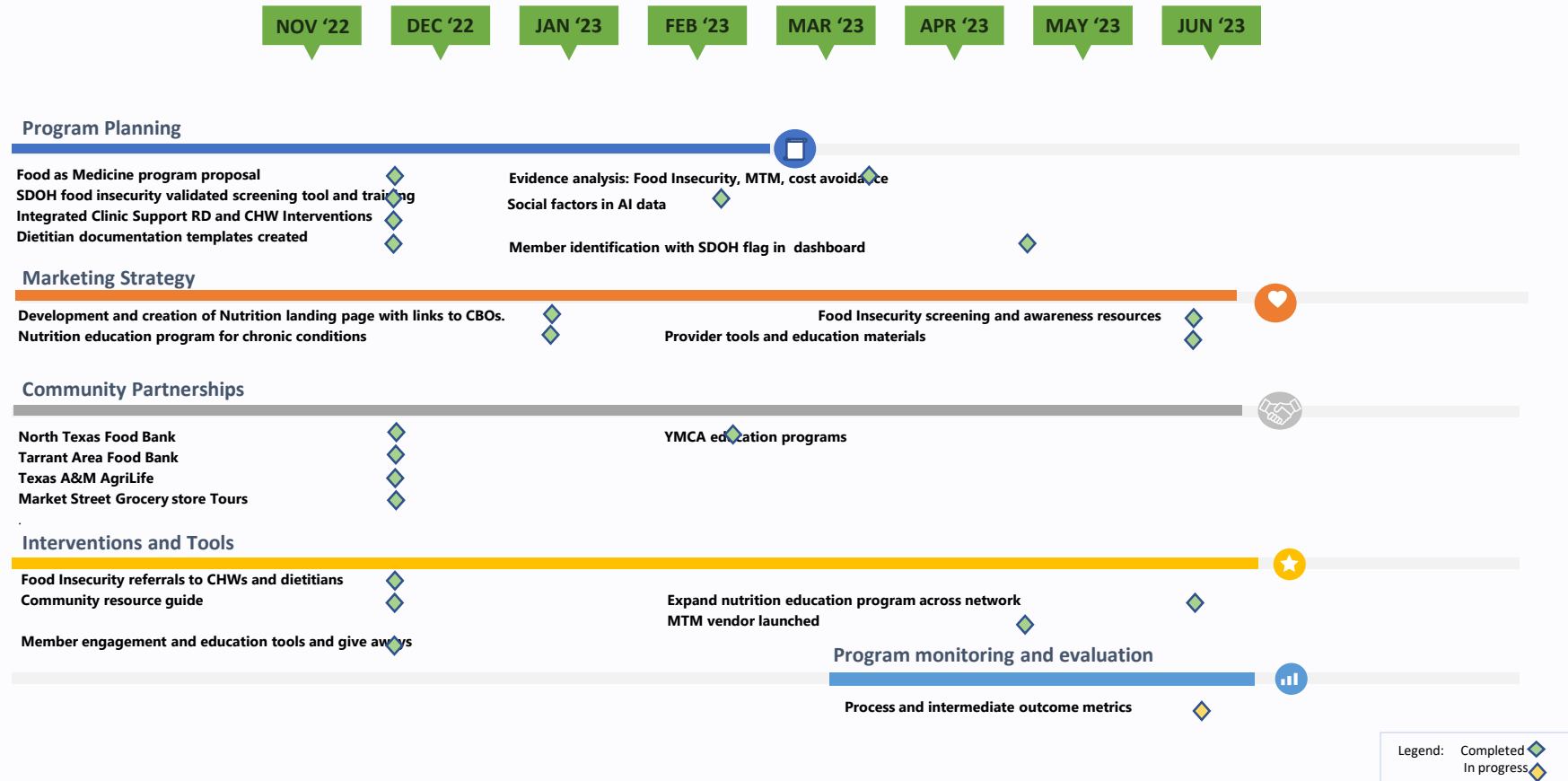
ROI Calculator for Partnerships to Address the Social Determinants of Health Evidence Guide: NUTRITION

Study	Population	Intervention summary	Type of evidence	Intervention cost	Results on utilization and costs of care
HOME-DELIVERED MEALS					
Berkowitz et al. 2018a	Dually eligible Medicare and Medicaid beneficiaries at nutritional risk	Community Servings in Boston provided home delivery of MTM or nontailored food to members of Commonwealth Care Alliance health plan. Those receiving MTM had 5 days' worth of lunches, dinners, and snacks delivered each week. Those receiving nontailored food (i.e., not tailored to their medical needs) received 5 days' worth of prepared lunches and dinners delivered daily through a program similar to Meals on Wheels.	Moderate. Nonrandomized trial with comparison groups: MTM group (n=133 in intervention group, 1,002 in comparison group) Nontailored food group (n=624 in intervention group, 1,318 in comparison group).	Average monthly program costs per participant were \$350 for MTM and \$146 for nontailored food	Compared to controls, MTM group had 70% reduction in ED visits and 52% reduction in inpatient admissions, while nontailored food group had 44% reduction in ED visits and 12% reduction in inpatient admissions. Both MTM and nontailored meal delivery were associated with significantly lower medical spending compared to those not receiving any meal support (average monthly difference of \$570 and \$156 per participant, respectively). There was an estimated monthly net savings of \$220 per participant for MTM and \$10 per participant for the nontailored food program.
*Berkowitz et al. 2019	Adults age 18 and older referred by a clinician due to a medical condition that required medically tailored meals to prevent clinical deterioration and who faced "substantial" social barriers to following an appropriate diet.	Community Servings in Boston. Eligible participants received 10 ready-to-consume MTMs per week over 4 weeks, delivered to their homes. Meals were prepared under the supervision of a registered dietitian nutritionist.	Moderate. Observational study comparing an intervention group (n=499) to a matched control group of nonrecipients (n=521) using an intention-to-treat approach and instrumental variables to control for confounding.	\$350 PMPM including food, dietary tailoring, and delivery	Relative to the control group, MTM recipients had a 49% lower rate of hospital admissions; 72% lower rate of SNF admissions; and 16% lower health care costs, equal to a reduction of \$753 PMPM.
Gurvey et al. 2013	Nutritionally at-risk members of a Medicaid health plan in Philadelphia and Southern New Jersey with life-threatening chronic diseases such as HIV/AIDS, renal disease, and cancer	Clients received 3 free, home-delivered, nutritionally balanced meals a day from the nonprofit Metropolitan Area Neighborhood Nutrition Alliance. Registered dietitians provided medical nutrition therapy to clients, which included nutrition counseling and meal planning.	Moderate. Observational study (n=65 in intervention group, 633 in a similar comparison group).	Not given	Relative to the comparison group, intervention group had 50% fewer average monthly inpatient stays (0.2 vs. 0.4), 37% shorter average length of inpatient stays (10.7 days vs. 17.1 days), and 50% higher average number of ED visits (0.6 vs. 0.3) during the six months after the intervention.

*Indicates studies added to the guide in this update.

The Commonwealth Fund 13

Food Insecurity program Gantt chart



Collaboration with local food banks

- Partnership and collaboration to provide services and programs offered by the food banks (examples: Mobile Pantries, Senior Food Program).
- Resources (training and process) for clinics to refer members needing food assistance.
- Healthcare partnership with SWHR to provide home-delivered produce box and assistance with SNAP applications.
- Quarterly reports on members referred and needs met.



35

Two-Item Hunger* VitalSign™ in Hager et al, 2010 and Baer et al. 2015

“Within the past 12 months, we worried whether our food would run out before we got money to buy more.”

Often True, Sometimes True, Never True

“Within the past 12 months, the food we bought just didn’t last and we didn’t have enough money to get more.”

Often True, Sometimes True, Never True

89-97% sensitivity

83-84% specificity

*Individuals are considered at risk of food insecurity if they answer either or both of these statements are “often true” or “sometimes true”.

Medically Tailored Meals



Vendor selection criteria

Vendor offerings,
Therapeutic diets, cost,
taste, reviews

Hidden contractual
requirements



Taste testing

Sample meals
representative of
menus

Objective evaluation



Nutritional evaluation of menus

Meet therapeutic needs
of most common diets



Production and shipping

1 week vs. 2 weeks
Local vs. out of state
Packaging



Additional features (optional)

Dashboard
Text messaging to
member

Medically Tailored Meals Taste Testing

Instructions: Please *write the name of the meal* that you are taste testing. Then, rank based on *scale of 1 to 10 (1-dissatisfied; 5 somewhat satisfied; 10-very satisfied)* by referring to the following criteria: Appearance, taste, texture, consistency. Summary of results below:

Meal Name	Appearance	Taste	Texture	Consistency	Approval Rating (%)	Comments
Overall rating						

Partnership with Roots Food Group

Medically Tailored Meals

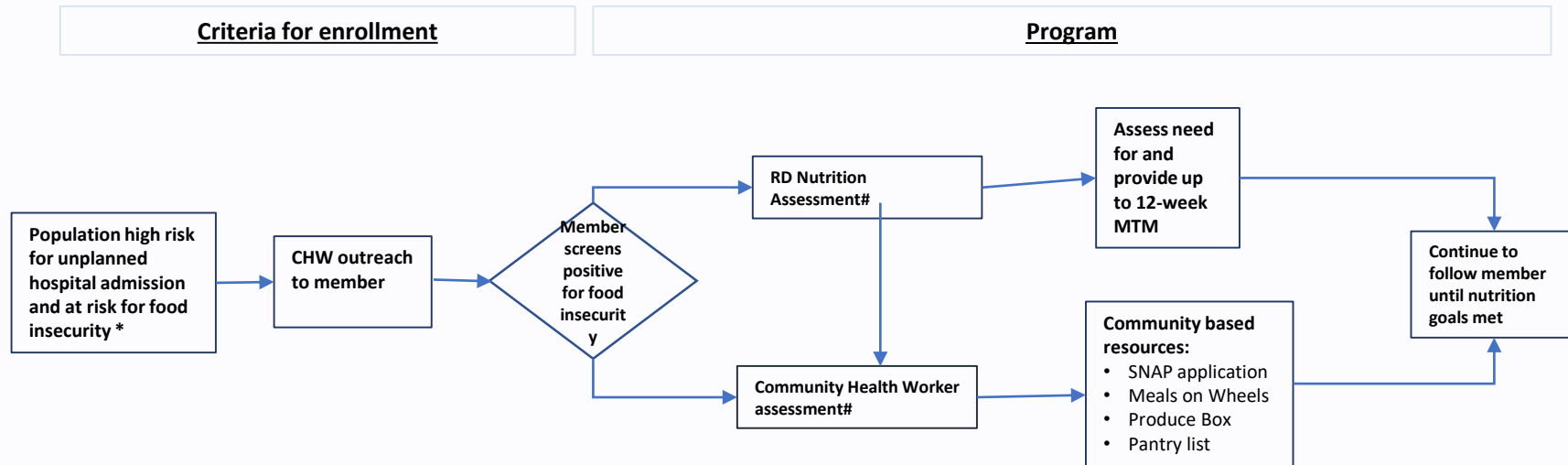


- Rfoodx has a large assortment of entrée recipes and breakfast products that are healthy, diverse in cultural offerings, and taste great.
- All Rfoodx meals are:
 - Compliant with nutritional guardrails of the top chronic diseases
 - Made with all-natural, real food
 - Free of artificial ingredients, additives, and preservatives
- Approved by Registered Dietitians for prevention and maintenance of: diabetes, cancer, heart disease, stroke, hypertension, chronic lung disorders, gestational diabetes, mental/behavioral disorders, congestive heart failure, human immune deficiency, high cholesterol, low vision, blindness, kidney disease and perinatal conditions.



10

Outreach and engagement process



*Criteria includes AI predictive model for unplanned hospital admissions and ADI or LILA for living in low income areas.

RD Nutrition assessment includes nutritional status, need for disease management education programs. CHW assessment includes food insecurity screening and referrals to food banks and other community benefits.

MTM: Medically Tailored Meals from Roots Food Group

Public facing webpage with links to resources

Southwestern Health Resources

Texas Health Resources | UT Southwestern Medical Center

Search site [] [] CONTACT US






For Providers | For Patients | For Employers | News & Stories | About Us

For Patients

PATIENT HEALTH RESOURCE

Nutrition services

Nutrition plays a vital role in improving the overall well-being of people with chronic diseases. Our nutrition program empowers individuals to self-manage their conditions through a healthy diet and lifestyle.



Cooking demonstrations

Cooking Demos — [North Texas Food Bank](#)
Cooking Demos — [Tarrant Area Food Bank](#)

Grocery shopping tips

Healthy Shopping 101 — [Happy + Nourished by Albertsons and Market Street](#)
Learn All About Shopping — [Texas WIC](#)
Sprouts Grocery Store Tour (English) — [YMCA of Metro Dallas](#)
Sprouts Grocery Store Tour (Spanish) — [YMCA of Metro Dallas](#)

Recipes & nutrition education

Cooking Basics — [U.S. Department of Agriculture SNAP-Ed Connection](#)
Eat Right — [Academy of Nutrition and Dietetics](#)
MyPlate Kitchen Recipes — [USDA Food and Nutrition Service](#)
Read Nutrition Labels — [Texas Health and Human Services](#)
Recipes — [North Texas Food Bank](#)
Recipes — [Tarrant Area Food Bank](#)

Cooking demonstrations, recipes and nutrition materials are copyrighted to our community partners and used with their permission.

Communication with members

Let's Talk about Food!

If you've ever struggled to feed your family or worried about how to make food last, you may need assistance with **food security**. Southwestern Health Resources cares about your access to healthy foods. One of our Community Health Workers will contact you to connect with available resources.

from Food Insecurity
*Supplemental Nutrition Assistance Program

to Food Security!

The infographic features a central path leading from 'Food Insecurity' to 'Food Security!'. Along this path are several resource icons: emergency food assistance, SNAP applications, SNAP education, mobile pantries, produce boxes, farmer's market, cooking demos, and grocery store tours. The background includes images of fresh produce and a grocery bag.

Southwestern Health Resources

Texas Health Resources **UT Southwestern Medical Center.**

1601 Lyndon B. Johnson Freeway, Suite 800
Farmers Branch, TX 75234

Have you ever struggled to feed your family or worried about how to make food last?

Call 469-291-4001 between 8 and 5 CT for more information.

Southwestern Health Resources Nutrition Services can connect you to available resources:
southwesternhealth.org/patients/nutrition-services

Southwestern Health Resources

Metrics for success



% members with A1c 0.5, 1 and 1.5 reduction in diabetes members



% members with BP improvement in HTN members



% reduction in avoidable ED visits % reduction in avoidable Inpatient admissions



% reduction in readmissions



% reduction in Total Cost Of Care



Time frame: 6 months and 1 year before and after intervention

- Program pilot launched in June 2023.
- Program expansion in progress.
- On-going monitoring for staff retraining and removing barriers.
- Member success stories shared across network.
- Preliminary metrics tracking in progress.
- Program enhancements to include “Graduation plan”.

Thank you



Southwestern Health Resources



NMDOH Program Index

The first offering of our resource hub, a searchable index of NMDOH programs in Texas that are sponsored by health system entities.

Programs In Texas

Non-Medical Drivers of Health Program Index

You can search for Texas NMDOH programs by selecting your areas of interest in the 8 fields listed below.

You may select one, all, or none of the areas listed under each field. You may also use the search bar below to

An alphabetical listing of all programs grouped by program sponsor appears below.

Index contains 30 programs

Program Sponsor	+
Drivers of Health	+
Target Populations	+
Health Condition(s)	+
Counties	+
Program Status (Active/Inactive)	+
Program Evaluated (Yes/No)	+

Community Health Choice

CareerReady Program

Food Rx

Driscoll Health Plan

Nutrition for Maternal Health

Factor Health at Dell Medical School

FUEL (Food, fUn, frEsh, famILy)

Kidney Health, Eat Well, Live Well

View Program Index: <https://index.driversofhealthtx.org/>

We appreciate your feedback!



QR code link: https://singuserd6695f32.iad1.qualtrics.com/jfe/form/SV_bq3IAqaLSAh8mj4