

**Healthy
Eating
Research**



Summer Speaker Series for Students 2023

Getting Started!

- Type your name and institution into the chat box!
 - *Question of the day: What is your favorite emoji?*
- Remember to keep yourself on mute.
- Type your questions into the chat box.

Summer Speaker Series for Students

- Explore various public health topics related to:
 - Food and nutrition security
 - Federal nutrition assistance programs
 - COVID-19 implications
 - Nutrition equity
- This series is a collaborative effort of Healthy Eating Research (HER) and Nutrition and Obesity Policy Research and Evaluation Network (NOPREN).
 - Healthy Eating Research (HER) is a national program of the Robert Wood Johnson Foundation
 - Nutrition and Obesity Policy Research and Evaluation Network (NOPREN) is a program of the Center for Disease Control and Prevention (CDC)

NOPREN HER Summer Speaker Series for Students

Schedule and Topics

- June 14: Improving Nutrition Security during Early Childhood
- June 28: Food is Medicine: What does it mean? Where are we going?
- July 12: WIC Policy: Behind the Curtain
- July 26: Making Water Win: Policies to Build Quality & Access
- August 9: COVID-19 Policy Implications for USDA Child Nutrition Programs & SNAP
- August 16: Student Presentations

For more information or to register:

<https://nopren.ucsf.edu/her-nopren-summer-speaker-series-students-2023>

The series will take place on
Wednesdays from 4:00 - 5:00 pm EST

REMINDER!

Apply to be a presenter at the Virtual Student Presentation and Poster Session on August 16!

Selected students will give a 5-10-minute presentation on a nutrition-related project or research they worked on over the summer. Students of all levels are encouraged to apply.

Applications due: Wednesday, July 19th at 5:00pm ET



History of the Summer Speaker Series



Sheila Fleischhacker, USDA NIFA

Founding co-chair of the COVID-19 Food & Nutrition Work Group &
Summer Speaker Series for Students

Healthy
Eating
Research



NOPREN
Nutrition & Obesity
POLICY RESEARCH & EVALUATION NETWORK

Session 2: Food is Medicine: What does it mean? Where are we going?

Food Security Work Group

Meets bi-monthly on the fourth Monday of the month @ 9am PT/12pm ET

To join the work group contact: ximenapv@live.unc.edu



Kaitlyn Harper, Co-Chair



Hilary Seligman, Co-Chair



Ximena Perez-Velazco, Fellow

Food Security Work Group

Previous Presentations:

- Association of Food Insecurity With Greater Family Health Care Expenditures In The US
- Produce Prescription as a Cross-Sector Innovation: findings on Program Implementation & Patient Utilization
- Diet Quality Among Food Insecure Populations

The screenshot shows the JAMA Pediatrics website interface. At the top, there is a search bar and the journal title. Below the navigation, there are social media icons and article statistics: 'This Issue' with 1,070 views, 0 citations, and an Altmetric score of 10. The article title is 'A Call for Consistent Screening and Measurement of Adolescent Food Insecurity' by Kaitlyn Harper, PhD, MSc, MA¹; Hilary Seligman, MD, MAS². The journal is identified as AJPM (American Journal of Preventive Medicine) and is associated with ACPM and APTR. A 'Submit' button is visible in the top right. Below the article title, there are navigation links for 'Articles', 'Publish', 'Topics', 'CME', 'About', and 'Contact'. The article is categorized as a 'RESEARCH ARTICLE' and is available under 'Open Access' with Creative Commons BY-NC-ND license icons. The authors listed are Andrea D. Brown MPH, Hilary Seligman MD, MAS, Sarah Sliwa MS, PhD, Ellen Barnidge MPH, PhD, Kathryn L. Krupsky PhD, MPH, Zewditu Demissie PhD, MPH, and Angela D. Liese PhD. The publication date is 24 May 2022, and the DOI is https://doi.org/10.1111/josh.13199. A 'Get it at UC' button is located at the bottom left of the article preview.

The thumbnail features a green header with the text 'Food Insecurity' and a sub-header 'Screening for Food'. Below this, there is a quote: 'For each statement, p Often True, Sometime' and its Spanish translation: 'Por cada una de las siguientes frecuentemente, a veces o nunca durante los últimos'. The text is partially obscured by a white box.

The thumbnail shows the title 'Food Insecurity and Suicidal Behaviors Among US High School Students*' and the authors: Andrea D. Brown MPH, Hilary Seligman MD, MAS, Sarah Sliwa MS, PhD, Ellen Barnidge MPH, PhD, Kathryn L. Krupsky PhD, MPH, Zewditu Demissie PhD, MPH, and Angela D. Liese PhD. The journal logo 'JOURNAL OF SCHOOL HEALTH' is visible at the top.

The thumbnail displays the title 'Upon "Food Is Medicine"' and the authors: Marydale DeBor, JD and Hilary K. Seligman, MD. The journal logo 'AMERICAN JOURNAL OF PREVENTIVE MEDICINE' is visible at the top.

Today's Presenters



Hilary Seligman
University of California, San Francisco
NOPREN



Chris Long
Gretchen Swanson Center for Nutrition

Food is Medicine: What does it mean? Where are we going?

NOPREN Summer Series for Students 2023

Hilary Seligman MD MAS

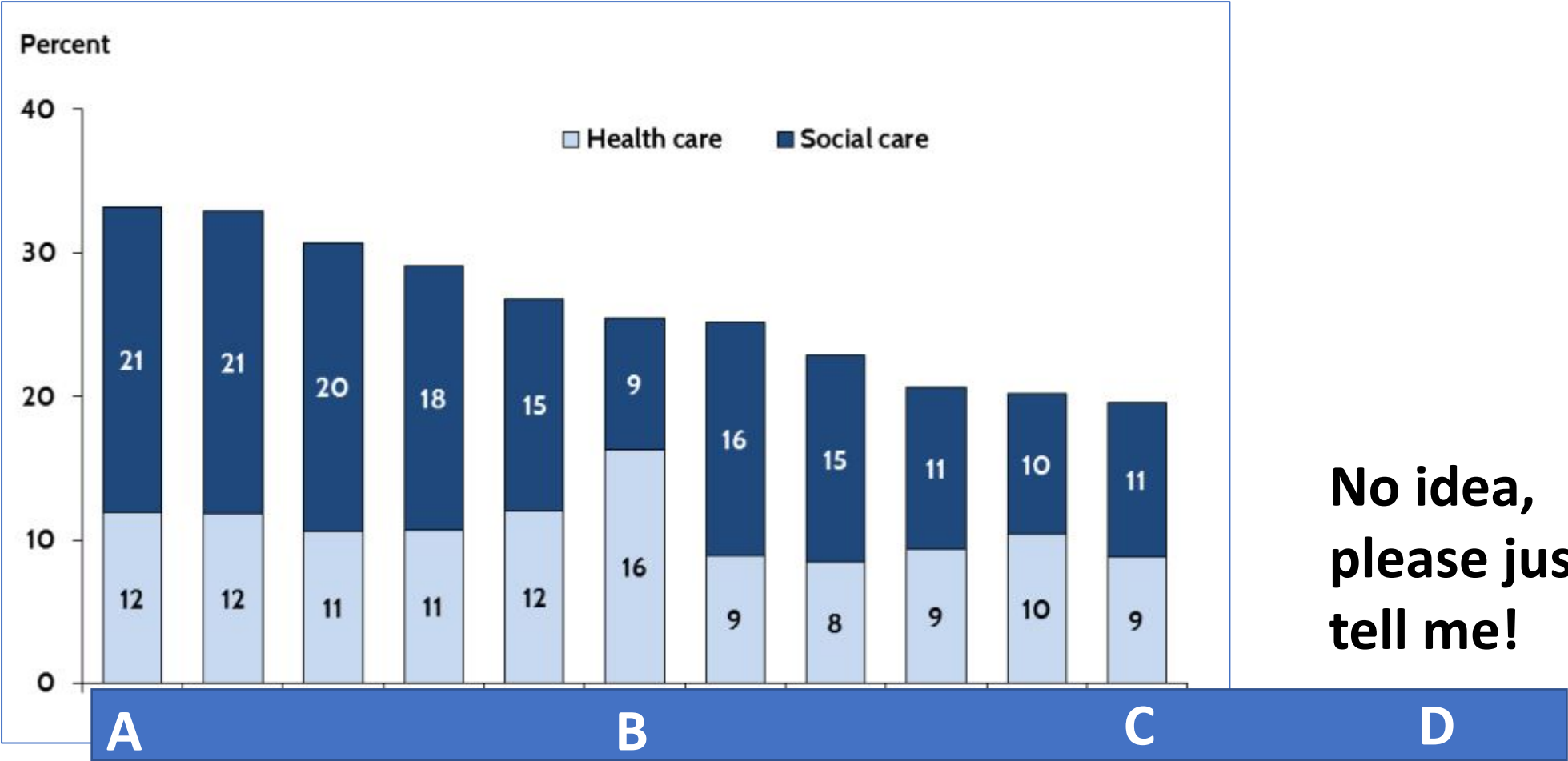
Professor of Medicine and of Epidemiology & Biostatistics, UCSF
UCSF Center for Vulnerable Populations

UCSF Center for Vulnerable Populations
Zuckerberg San Francisco General Hospital



NOPREN
Nutrition & Obesity
POLICY RESEARCH & EVALUATION NETWORK

Poll Question



No idea,
please just
tell me!

Figure 1. Health and Social Care Spending as a Percentage of GDP

Rebalancing Social & Medical Spending to Promote Health. Butler et al. Brookings Institution. 2017

Mis-Alignment Between Health Care & “Social Care” in the US

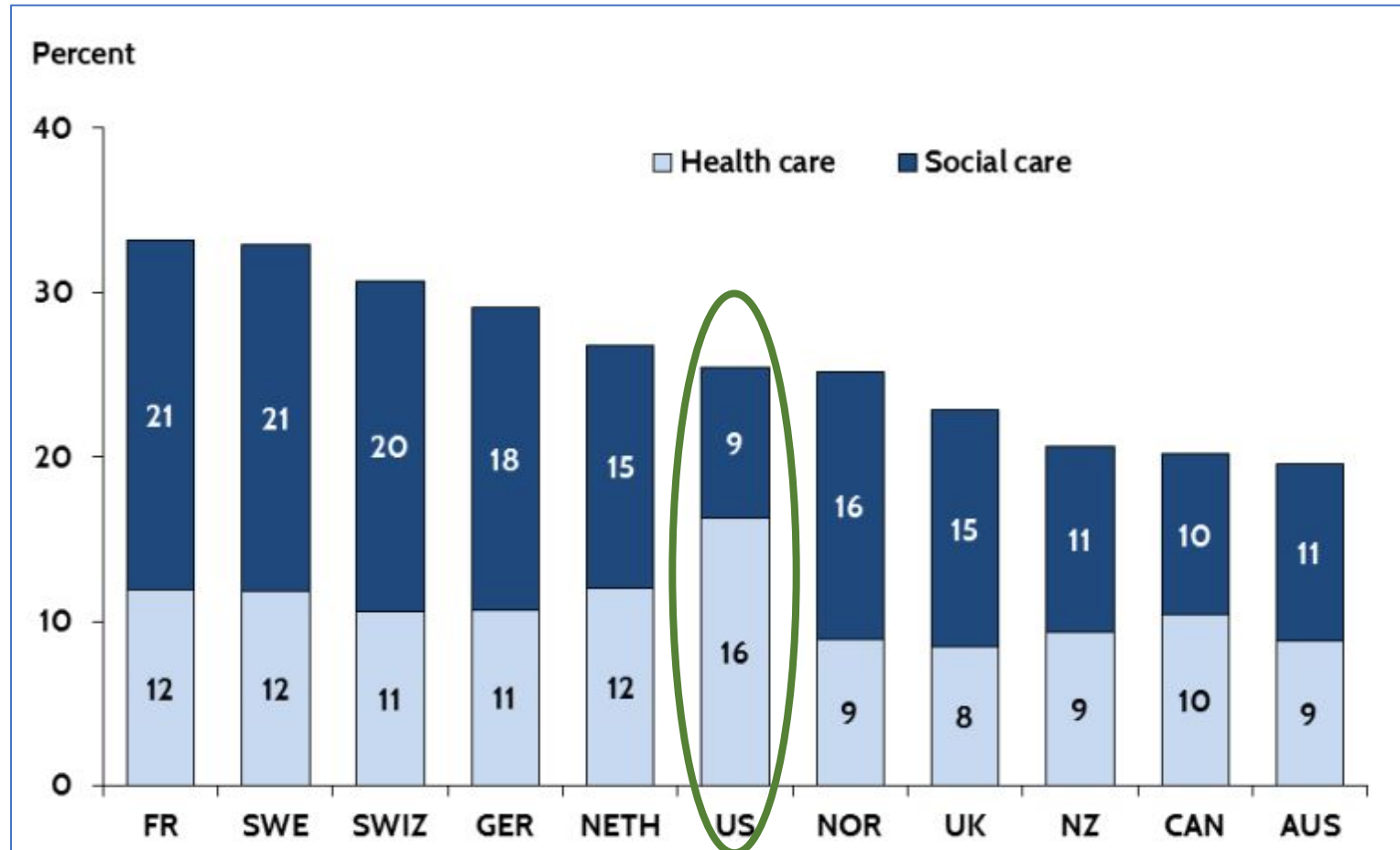


Figure 1. Health and Social Care Spending as a Percentage of GDP

Rebalancing Social & Medical Spending to Promote Health. Butler et al. Brookings Institution. 2017

Poll Question

A patient is at the primary care office. He reports on the Hunger Vital Sign screening tool that he is experiencing food insecurity. The nurse sends him to the food pantry that is in the lobby of the building to get some healthy food. This is an example of:

- (A) Addressing a social determinant of health
- (B) Addressing an acute social need
- (C) Providing clinical care
- (D) A Food is Medicine program
- (E) Both B and D

SOCIAL DETERMINANTS AND SOCIAL NEEDS – MOVING UPSTREAM

STRATEGIES

TACTICS

Improve
Community
Conditions

Laws, policies and regulations that create
community conditions supporting health for
all people

UPSTREAM

Addressing
Individual's
Social
Needs

Include patient screening questions
about social factors. Use data to
inform and provide referrals.

Social workers, community health workers,
and community organizations providing
Direct support to meet patients social needs

MIDSTREAM

Providing
Clinical
Care

Medical
Interventions

DOWNSTREAM

Social
Determinants of
Health

Social Needs

“Meeting Individual Social Needs Falls Short Of Addressing Social Determinants Of Health,” Health Affairs Blog, January 16, 2019. DOI: [10.1377/hblog20190115.234942](https://doi.org/10.1377/hblog20190115.234942)

Food Is Medicine



- Integration of specific food and nutrition interventions in, or in close collaboration with, the health care system
- Target population
 - People with or at high risk for certain health conditions (often diet-related)
 - People with or at high risk of food insecurity


Spectrum of FIM Programs

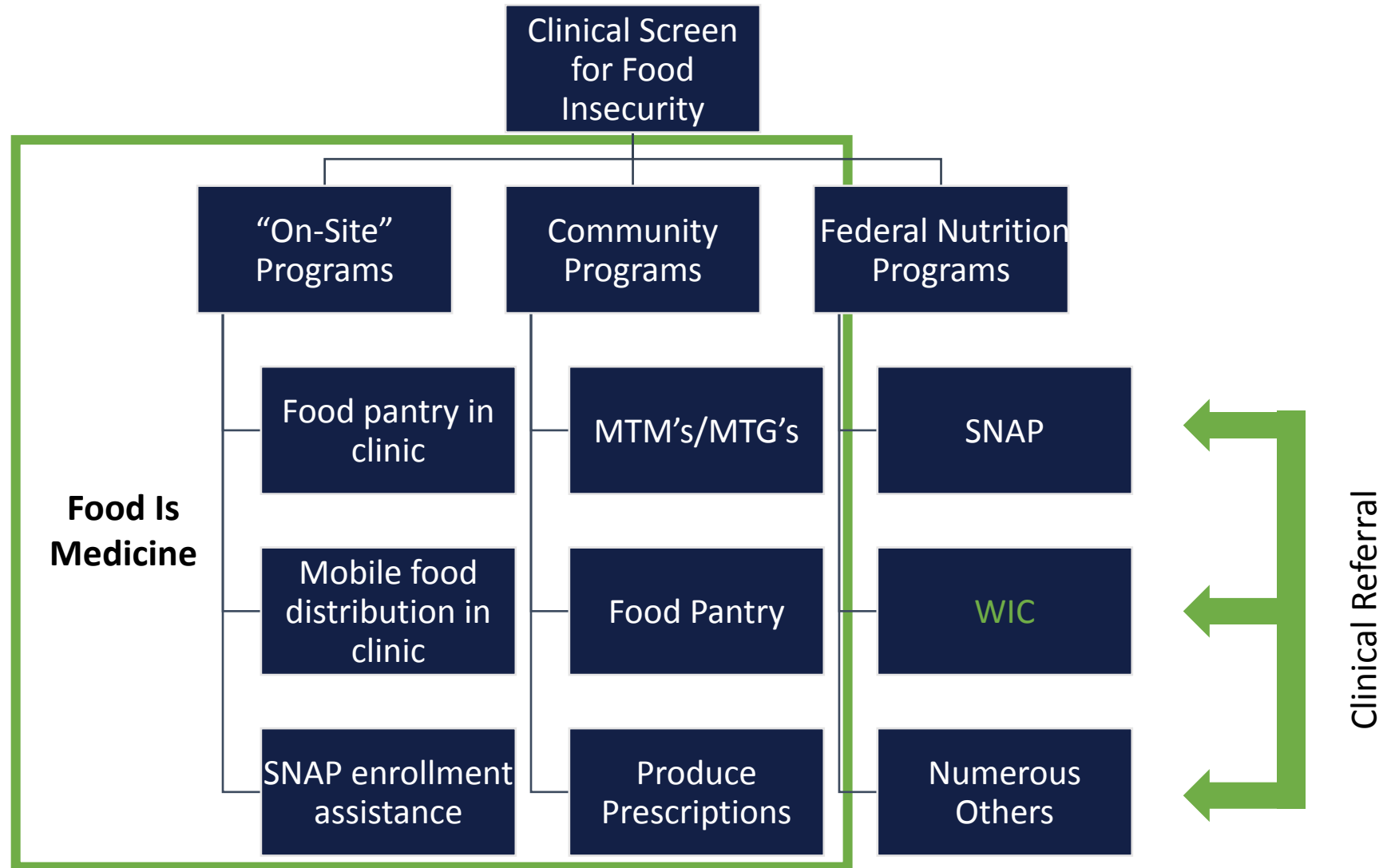
From the perspective of health care

MTM=Medically Tailored Meals

MTG=Medically Tailored Groceries

SNAP=Supplemental Nutrition Assistance Program

 = "food is medicine"



Theory of Change

Identification
of food
insecurity by
positive
clinical
screen



Referral to
FIM program



Enrollment in
FIM program



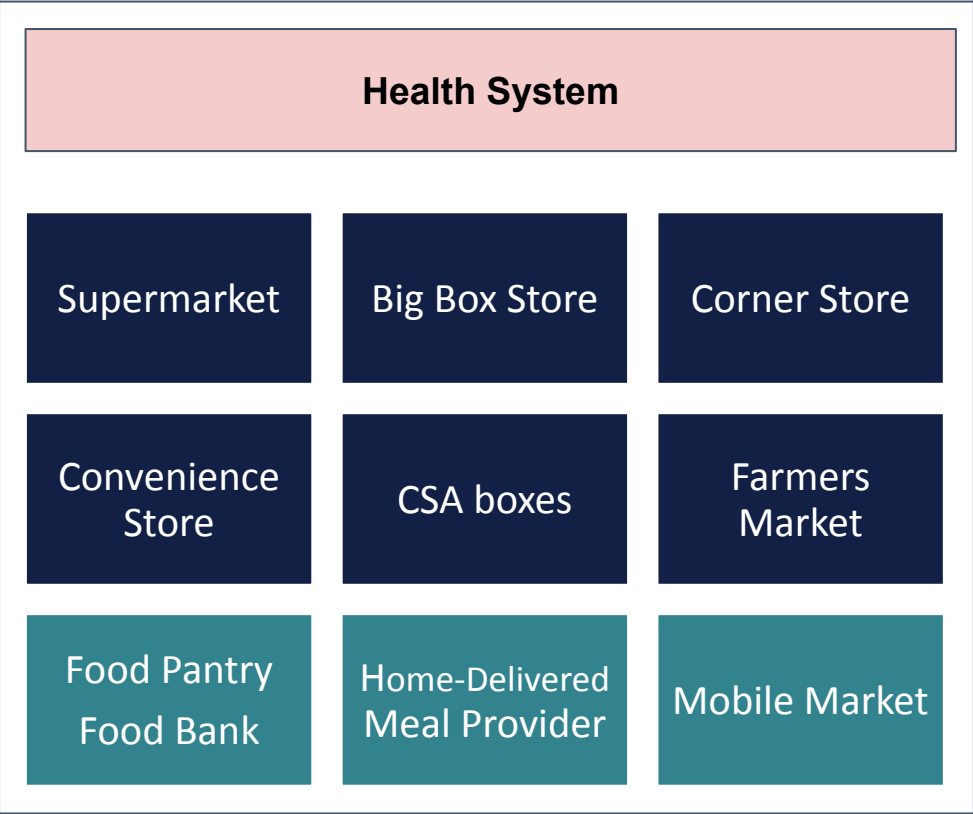
Improved
diet quality,
food security,
and
satisfaction



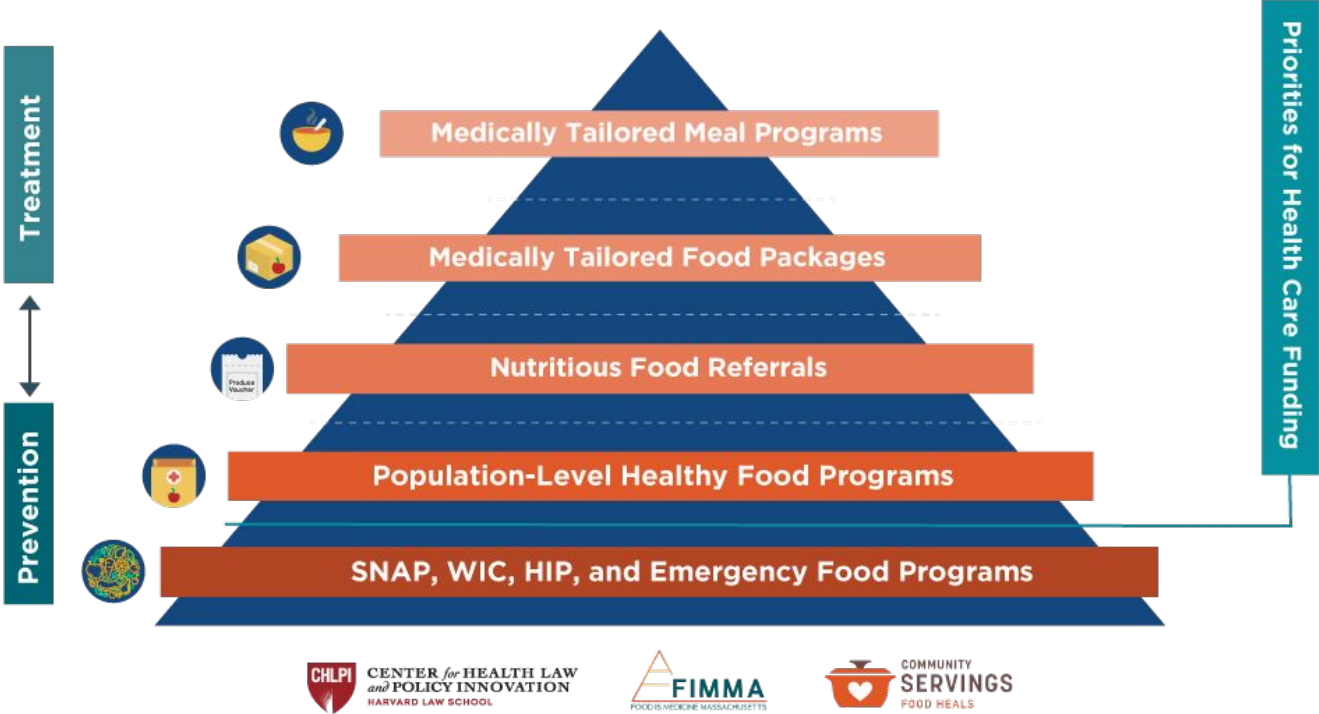
Improvement
of health and
utilization
outcomes



System Fragmentation



FOOD IS MEDICINE PYRAMID



“CSA boxes” refers to delivery of foods directly from the farm to a household.

**What do we know
about the impact of FIM
programs?**

Summary of Research

	Weak Evidence	Moderate Evidence	Strong Evidence	
WIC			✓	
	diet quality, food security, maternal & child birth outcomes, immunization rates, child academic performance			
SNAP			✓	
	health outcomes, reduces medication non-adherence, and reduces health care expenditures			<i>MTM=Medically Tailored Meals</i>
MTM's		✓		
	hospital admissions and readmissions, lower medical costs, and improve medication adherence			<i>MTG=Medically Tailored Groceries</i>
MTG's	✓			
	food security			<i>SNAP=Supplemental Nutrition Assistance Program</i>
PPP		✓		
	diet quality, food security, diabetes outcomes			<i>PPR=Produce Prescription Program</i>
On-site programs	✓			
	diet quality, food security, diabetes outcomes			

Summary of Research

	Weak Evidence	Moderate Evidence	Strong Evidence
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SNAP			✓
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MTG's	✓		
	food security		
PPP		✓	
	diet quality, food security, diabetes outcomes		
On-site programs	✓		
	diet quality, food security, diabetes outcomes		

Aspen Inst FIM Research Action Plan

MTM's: 10 studies, 2 RCT's, 5 with a ctl group, & 5 with >100 pts

MTG's: 12 studies, 3 with a ctl group, & 5 with >100 pts

PPP: 27 studies, 5 with a ctl group, & 8 with >100 pts

Food Insecurity Interventions in Health Care Settings: A Review of the Evidence

Table 1. Summary of review results: Food insecurity interventions

Outcome	Impact		
	Referrals	Vouchers	Food*
Resource use	Mixed (4)	Improved (3)	-
Food security status	Improved^ (2)	Improved (2)	Improved (1)
Health behaviors	Mixed (2)	Improved# (5)	Improved (1)
Health	Mixed (1)	Mixed (3)	Mixed (2)
Cost/utilization	Mixed (1)	-	Mixed (1)

Numbers in parentheses indicate the number of studies that reported on each outcome.

* Based on two studies of home-delivered meals, and one study of an intervention offering infant formula, nutrition educational materials, and referrals to social work, a medical-legal partnership, and food banks

^ Based on a study with a sample size 13 and a qualitative retrospective study so should be interpreted with caution.

All five studies found improvements, although in one case only for fruit consumption and in another the improvements were not statistically significant.

**Why is the data so
limited?**

Evaluation Challenges

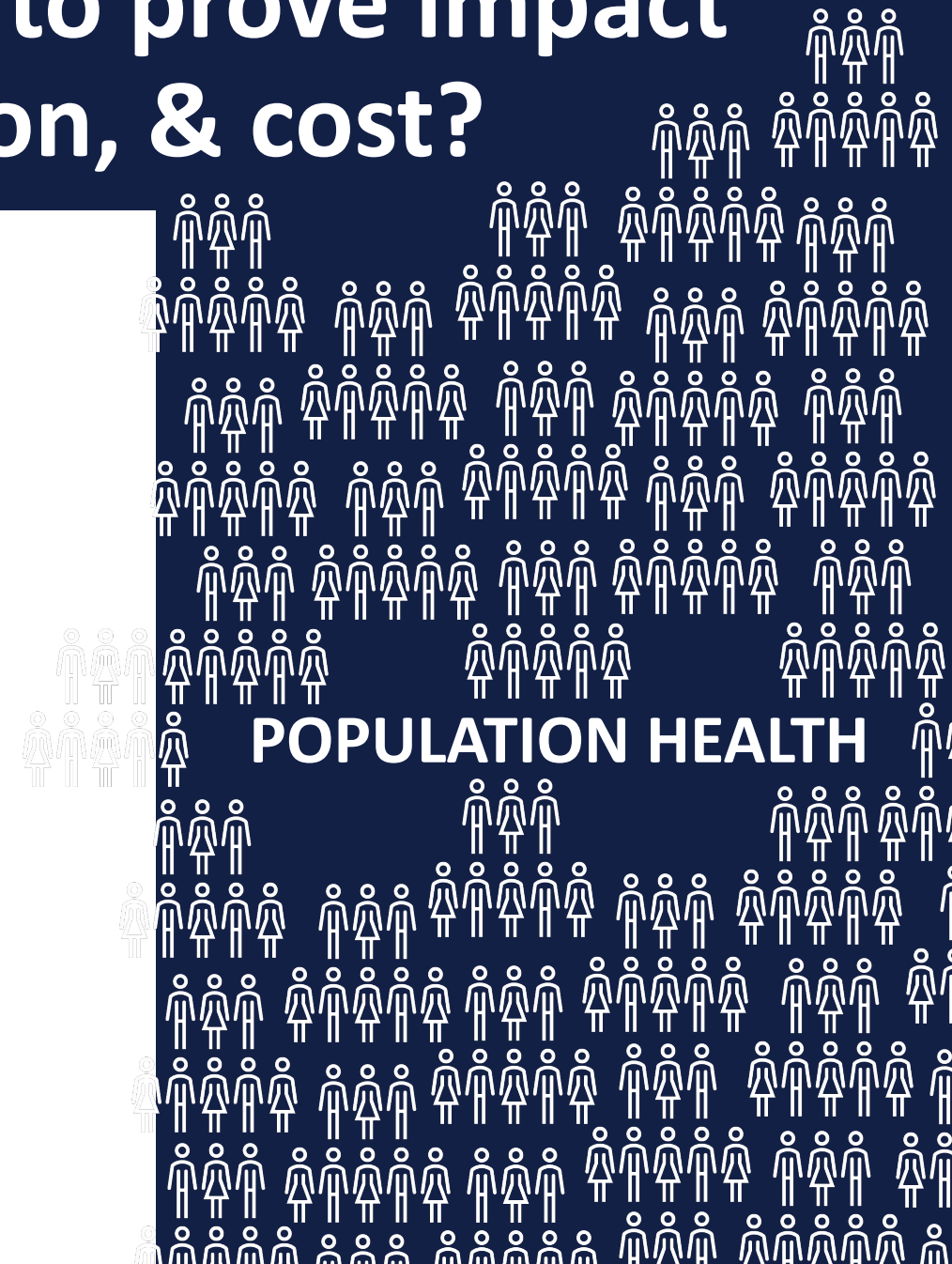
- Almost all programs reach a small number of people
 - Not suitable* for examining health outcomes, utilization, & cost
- Almost all programs offer a relatively small dose & duration
 - Not suitable* for examining health outcomes, utilization & cost
- Many programs are single-site
 - Limited applicability to the field as a whole
- Bottom line: You need a LOT of data to show an impact
 - Most programs have limited funds available for evaluation

“ This is really hard!

* I would argue it is also not ethical

Why is so much data needed to prove impact on health outcomes, utilization, & cost?

- Food security and nutrition programs are generally
 - Better at prevention than at treatment
 - Expected to have an impact over a long length of time
 - Proven by their SMALL effect on a LARGE number of people, rather than their LARGE effect on a SMALL number of people
- If you anticipate a SMALL effect, to show an impact you need
 - A lot of people
 - A long duration of “treatment”
 - A high “dose”
 - A long duration of observation



GusNIP Produce Prescription Program

*Chris Long from the
Gretchen Swanson Center
for Nutrition and
the Nutrition Incentive Hub*



GusNIP Produce Prescription Program (PPR) Rationale

Allow healthcare professionals to prescribe FVs for patients experiencing food insecurity and often chronic disease condition (e.g., type 2 diabetes)

GusNIP Goals

- Increase the purchase and consumption of fruits and vegetables among participating households
- Reduce individual and household food insecurity
- Improve health outcomes of participating households
- Decrease associated healthcare use and costs



PPR Evaluation

- Evaluate impact of project participation on:
 - increased consumption of fruits and vegetables*
 - reduction of individual and household food insecurity*
 - reduction in healthcare use and associated costs*

Year 3 Impact Findings Report & Executive Summary

The cover of the report features a purple background with a faint image of a person. On the right, there is a green circular graphic with a white pattern, resembling a slice of watermelon. The title "Gus Schumacher Nutrition Incentive Program (GusNIP): Impact Findings" is written in white. Below the title, the date range "Year 3: September 1, 2021 to August 31, 2022" is displayed. The Nutrition Incentive Hub logo is in the bottom right. A white box contains the text: "Developed by Gretchen Swanson Center for Nutrition in collaboration with Fair Food Network and U.S. Department of Agriculture, National Institute of Food and Agriculture." Below this, a smaller white box contains the citation: "The Nutrition Incentive Program Training, Technical Assistance, Evaluation and Information Center (NTAE) is supported by Gus Schumacher Nutrition Incentive Grant Program grant no. 2019-70030-30415/project accession no. 1020863 from the USDA National Institute of Food and Agriculture." At the bottom, logos for Gretchen Swanson Center for Nutrition, Fair Food Network, and USDA National Institute of Food and Agriculture are shown.

**Gus Schumacher Nutrition Incentive Program (GusNIP):
Impact Findings**

Year 3: September 1, 2021 to August 31, 2022

 **Nutrition Incentive Hub**
CREATED BY GUSNIP NTAE CENTER

Developed by Gretchen Swanson Center for Nutrition in collaboration with Fair Food Network and U.S. Department of Agriculture, National Institute of Food and Agriculture.

The Nutrition Incentive Program Training, Technical Assistance, Evaluation and Information Center (NTAE) is supported by Gus Schumacher Nutrition Incentive Grant Program grant no. 2019-70030-30415/project accession no. 1020863 from the USDA National Institute of Food and Agriculture.

Suggested citation: GusNIP NTAE. *Gus Schumacher Nutrition Incentive Program (GusNIP): Impact Findings Y3: September 1, 2021 to August 31, 2022*. Prepared for U.S. Department of Agriculture, National Institute of Food and Agriculture; 2023. Accessed [date] <https://nutritionincentivehub.org/gusnip-ntae-y3-impact-findings>

 **GRETCHEN SWANSON
CENTER FOR
NUTRITION**  **FAIR
FOOD
NETWORK**  **USDA** National Institute of Food and Agriculture
U.S. DEPARTMENT OF AGRICULTURE

Emerging Evaluation Priorities

- Engaging practitioners and communities in evaluation agenda setting
- Evaluating and advancing GusNIP PPR projects' efforts to serve underserved communities and geographies
- Evaluating the implementation challenges and opportunities of PPR projects
- Identifying effective combinations of intervention dosages, durations, and health conditions

What else do we need to learn about FAM?

- How will we **know** if Food as Medicine is working?
 - Food security, F&V intake, health outcomes, health care utilization
 - Quality of life for patients, quality of life for clinic teams, economic impact on communities
- Can we **improve** quality of life **and save** health care cost?
 - Building relationships with patients vs. saving money on patients?
- Where will the **food** in Food as Medicine come from?
 - Local/regional growers, the food bank system, large national grocery retailers, meal box shippers?
- **Who** will benefit from Food as Medicine?
 - Local/regional growers, local/regional grocers, payers/insurance industry, large national retailers, meal box shippers, community members/patients?
- How will Food as Medicine be **funded** across diverse policy environments (e.g., relatively conservative states)?



**Where are the
opportunities?**



Before I get to the opportunities...

- Many of the next slides refer to produce prescription programs
 - There is lots of thought leadership and momentum here right now
- Produce prescription programs are not necessarily the best program for your clinic, your community, your patient population, etc.
- Almost ALL of the concepts are relevant to other FIM interventions

Opportunities for *the Field*

Access to Large Amounts of Data

- Shared metrics across numerous programs
 - eg GusNIP Produce Prescription Program
- Large health systems with a single electronic health record
 - VA, Indian Health Service, other integrated health systems
- Health insurers
 - Claims data

Produce Prescription Programs in the United States: 2010-2020

Legend

Active Produce Prescription Headquarters

Counties Covered

- 1 - 10
- 11 - 42
- 43 - 100

Inactive Produce Prescription Program Headquarters

Counties Covered

- 1 - 5
- > 5 - 14
- > 14 - 76

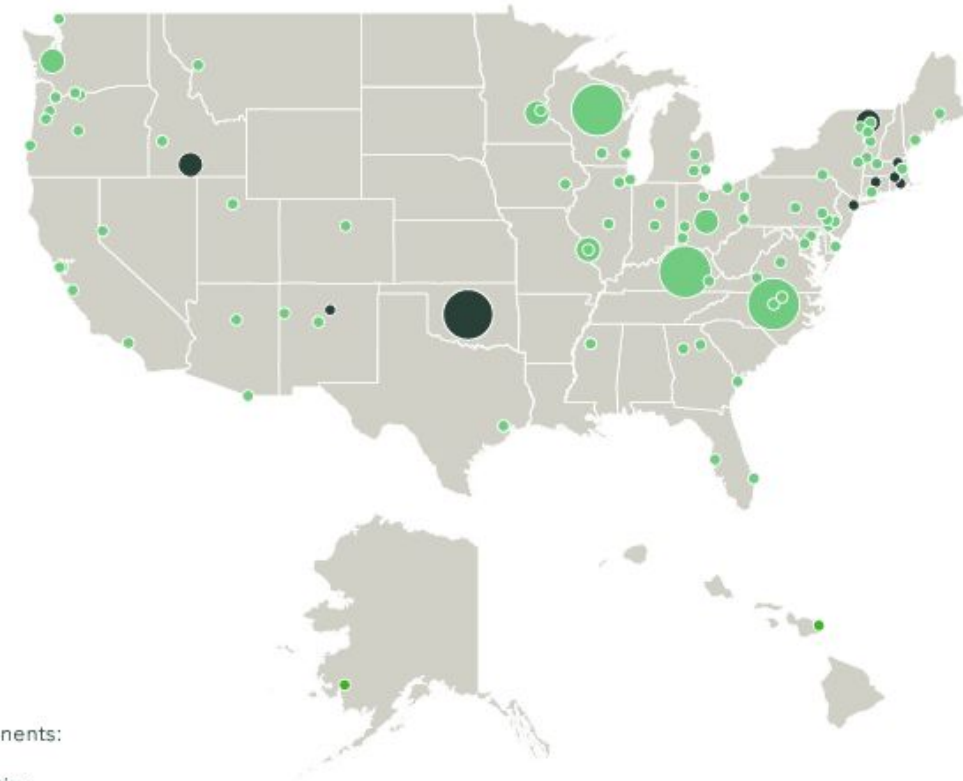
US State Boundaries

Number Active Programs: 94

Number of Inactive Programs: 14

Map reflects programs with these components:

- patient eligibility screening
- partnership with a healthcare organization
- prescriptions for healthy produce (fruits & vegetables with no added fats, sugars & salts at no or low cost)
- repeated dosage
- retail redemption



Opportunities for *the Field*: Modeling Studies

Prescribing healthy food in Medicare/Medicaid is cost effective, could improve health outcomes

New study finds that health insurance coverage for healthy food could improve health, reduce healthcare costs, and be highly cost-effective after five years

Medicare/Medicaid: Healthy food prescriptions



Fruits



Nuts/
Seeds



Vegetables



Whole
grains



Seafood



Plant oils

Insurance covers
30% of cost of eligible
food



\$100 billion

less in healthcare
utilization over
model population's
lifetime



Cost-effective after
5 years

Less diabetes

120
thousand cases
prevented or
postponed

Less cardiovascular disease

3.28
million cases
prevented or
postponed

As or more cost-
effective than
many currently
covered medical
treatments

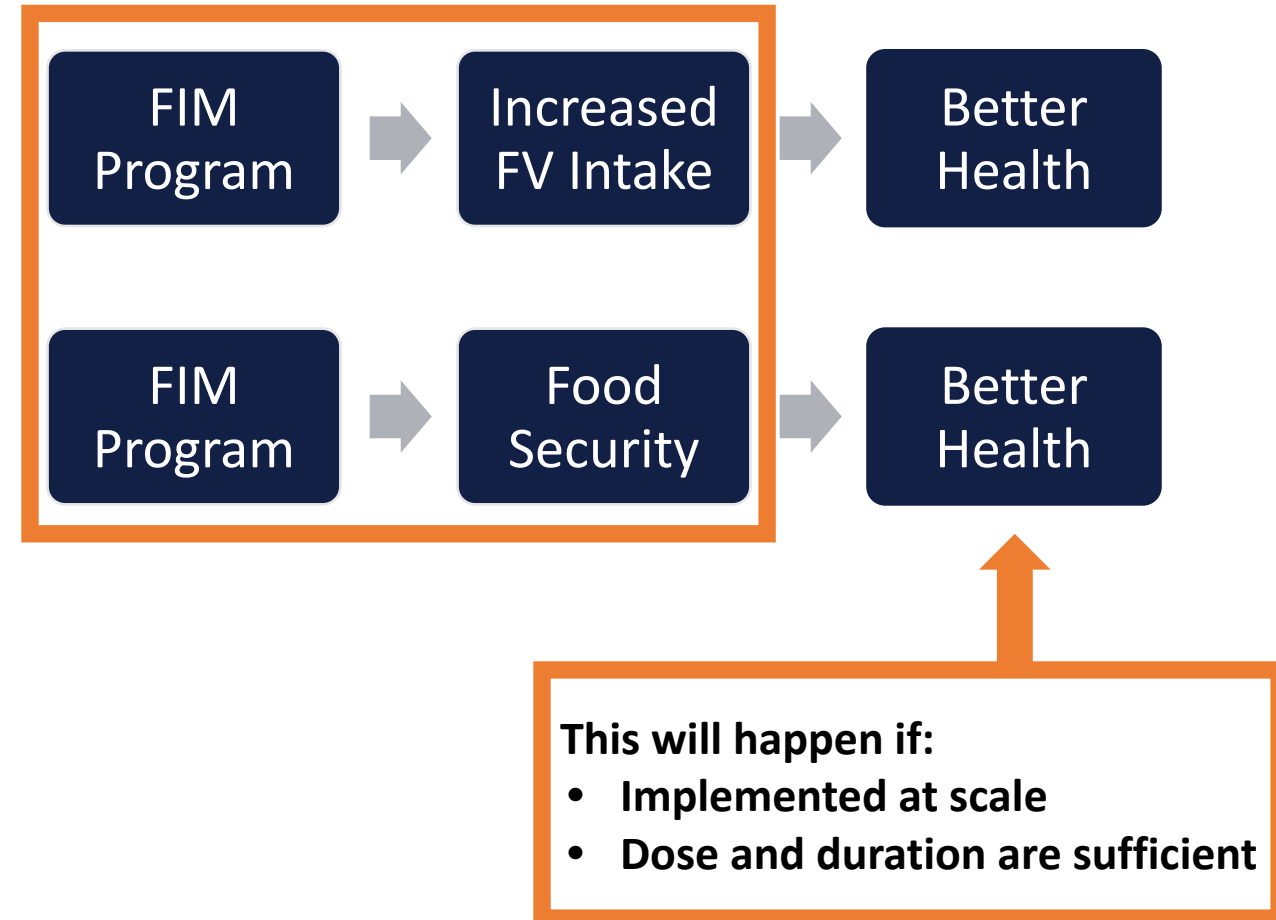
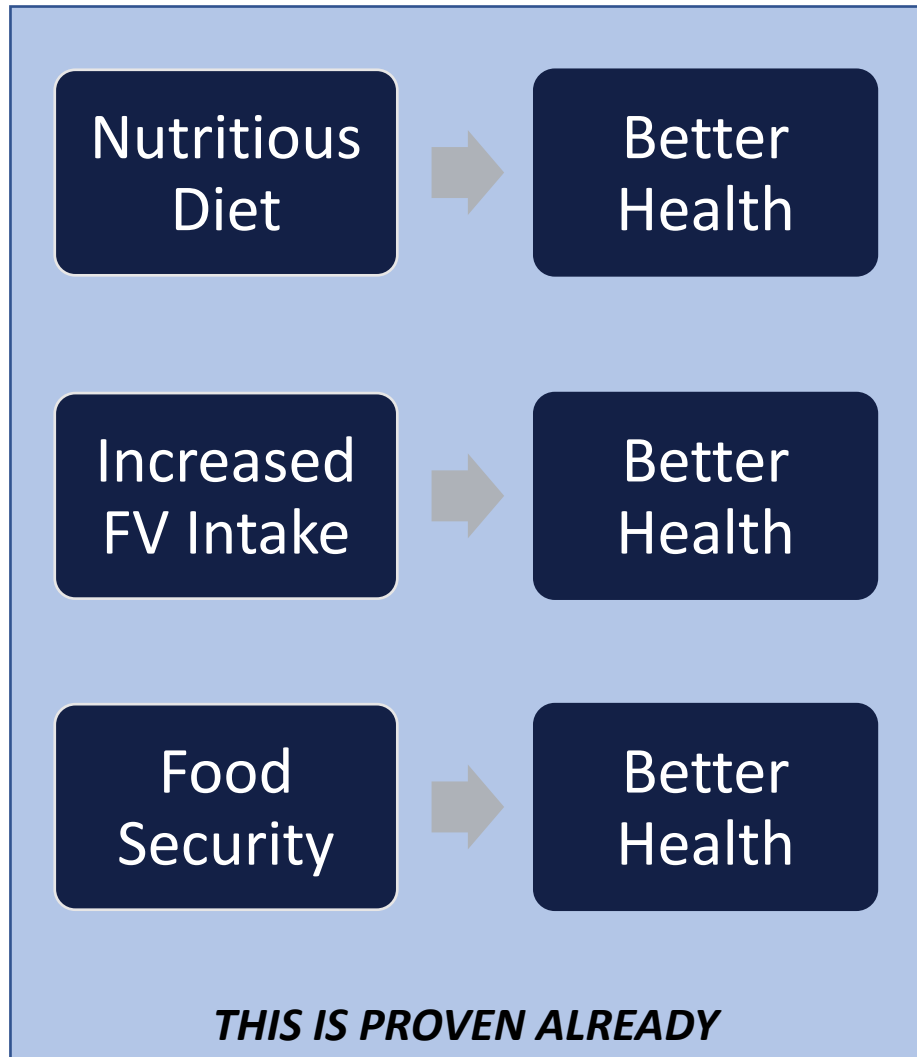


For more information, see "Cost-effectiveness of financial incentives for improving diet through Medicare and Medicaid: A microsimulation study" by Lee et al. (2019).
<https://doi.org/10.1371/journal.pmed.1002761>

Gerald J. and Dorothy R. Friedman
School of Nutrition Science and Policy at
Tufts University

Opportunities for *Individual Programs*

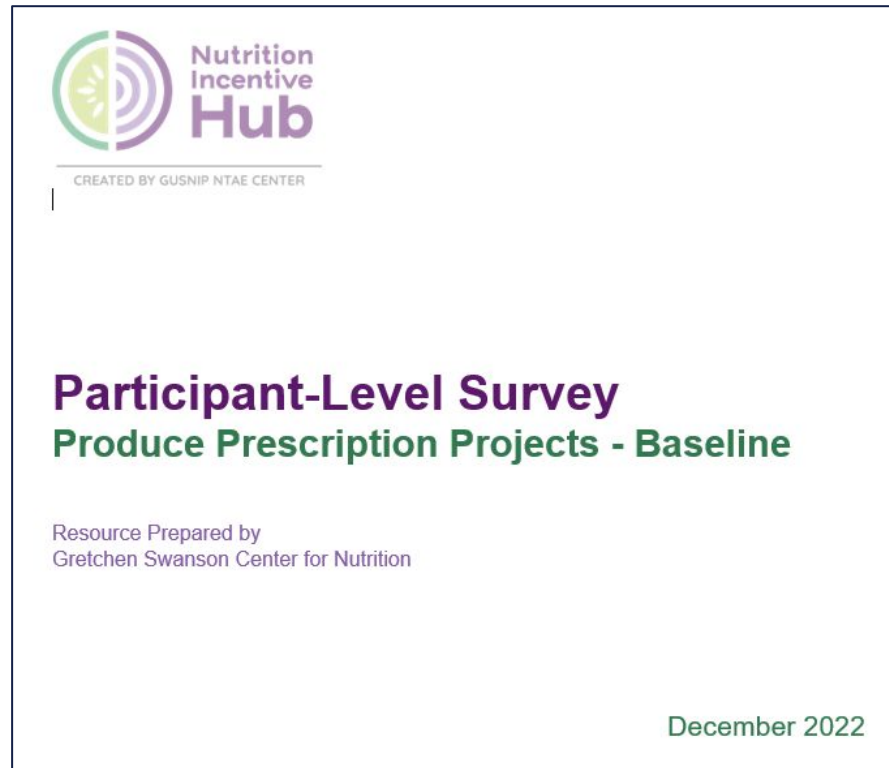
Controversy
Alert!



Opportunities *for Individual Programs:* Shared Metrics

Budd Nugent N, Byker Shanks C, Seligman HK, Fricke H, Parks CA, Stotz S, Yaroch AL. Accelerating Evaluation of Financial Incentives for Fruits and Vegetables: A Case for Shared Measures. *Int J Environ Res Public Health*. 2021 Nov 19;18(22):12140.

Shared metrics pooled data
More participants
More sites



- Food security
- FV intake
- SNAP participation
- Program satisfaction
- Health status
- Basic demographics

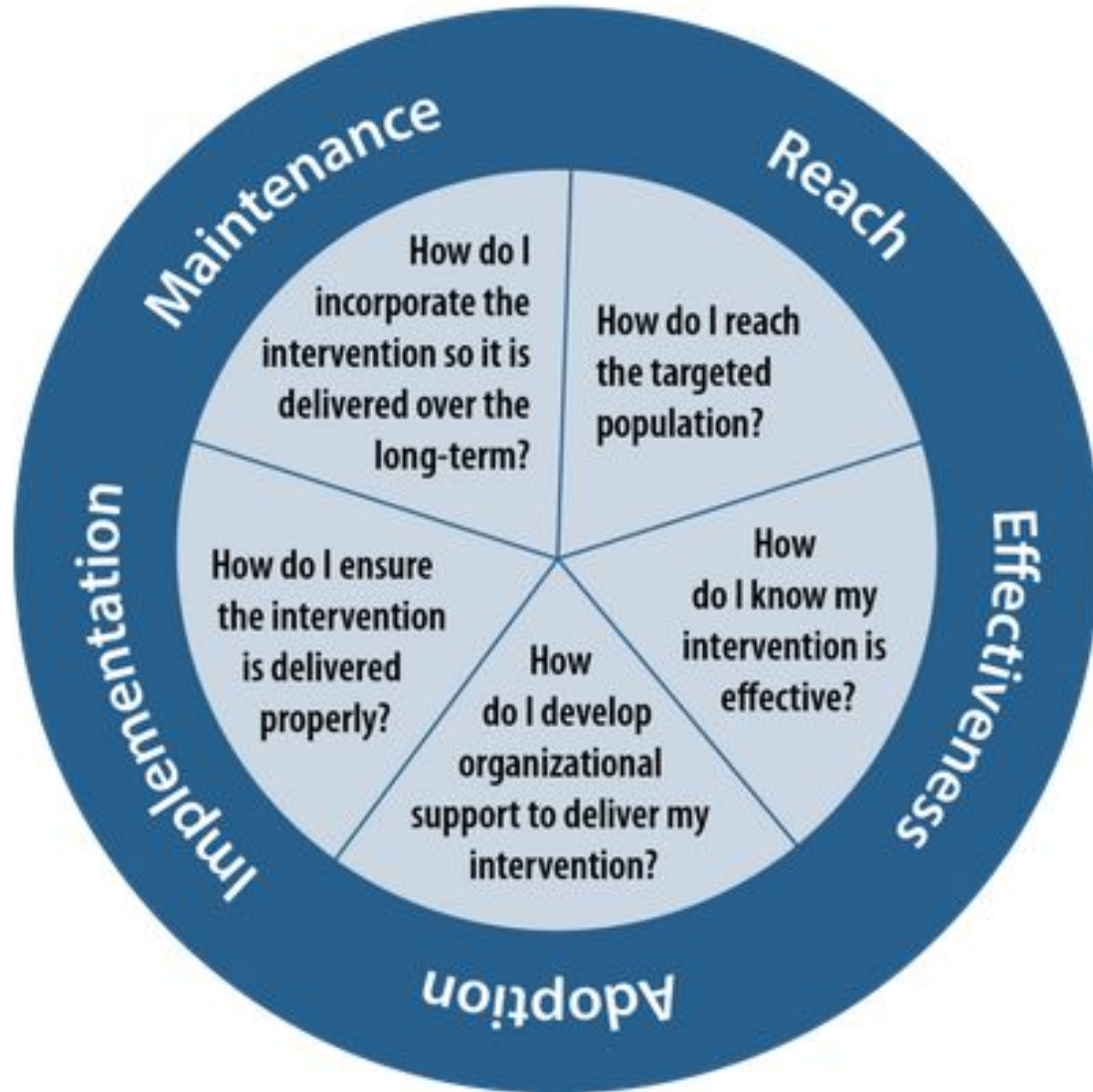
<https://www.nutritionincentivehub.org/resources/resources/reporting-evaluation/core-metrics-produce-prescription/participant-level-metrics>



In the chat box...

What are some challenges for the adoption of Food is Medicine programs by funders, healthcare, community based organizations, participants etc.?

Elements of the RE-AIM Framework



Opportunities for Individual Programs: RE-AIM

Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. *Am J Publ Health* 1999;89(9):1322–7.

Supporting Food & Nutrition Security through Healthcare

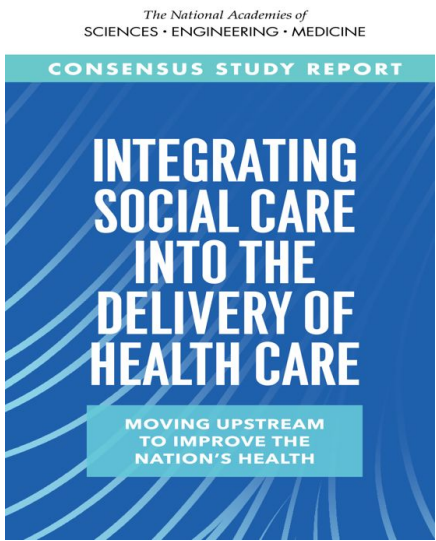
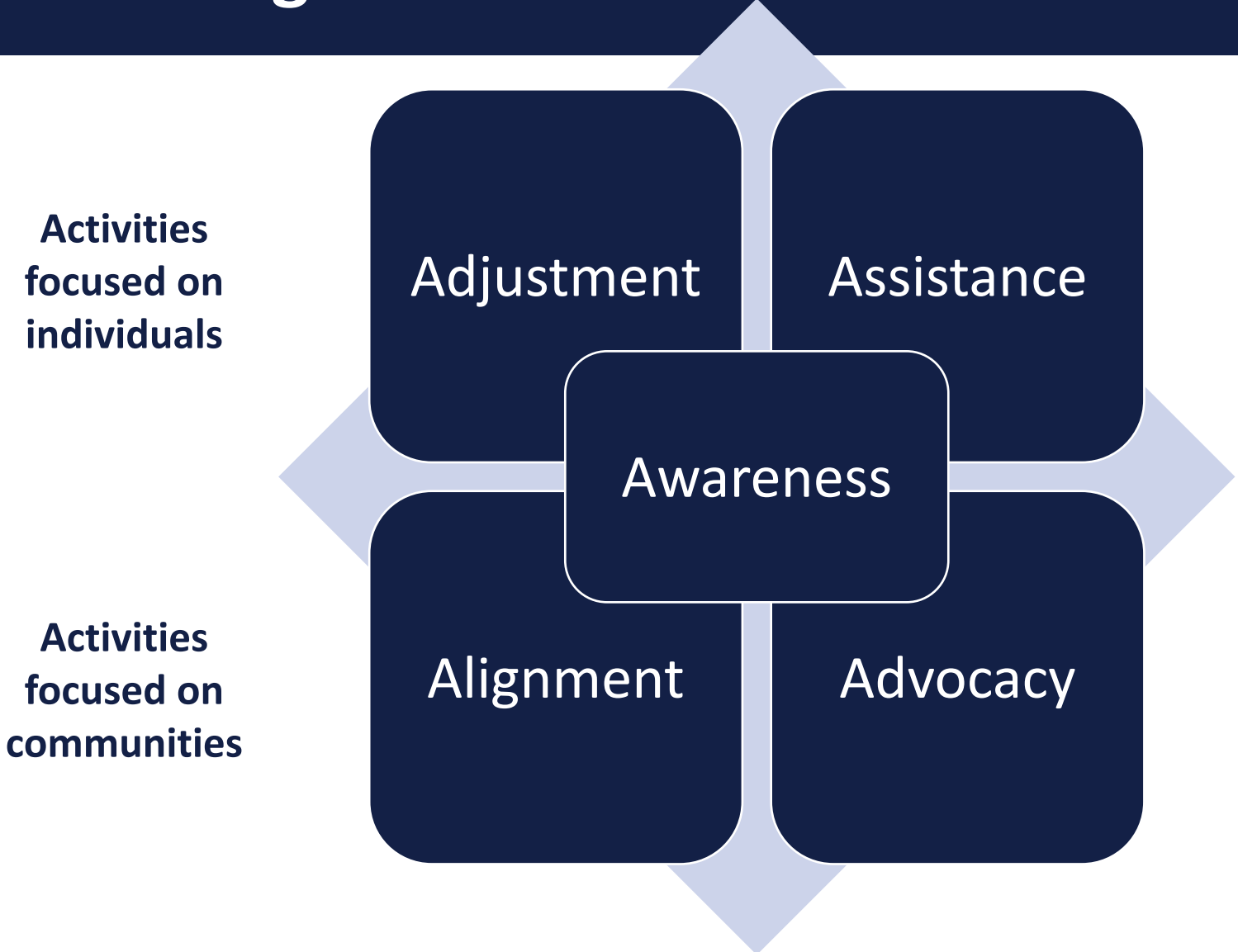
A Resource for Healthcare Systems and their Public Health and Community Partners



Table of Contents

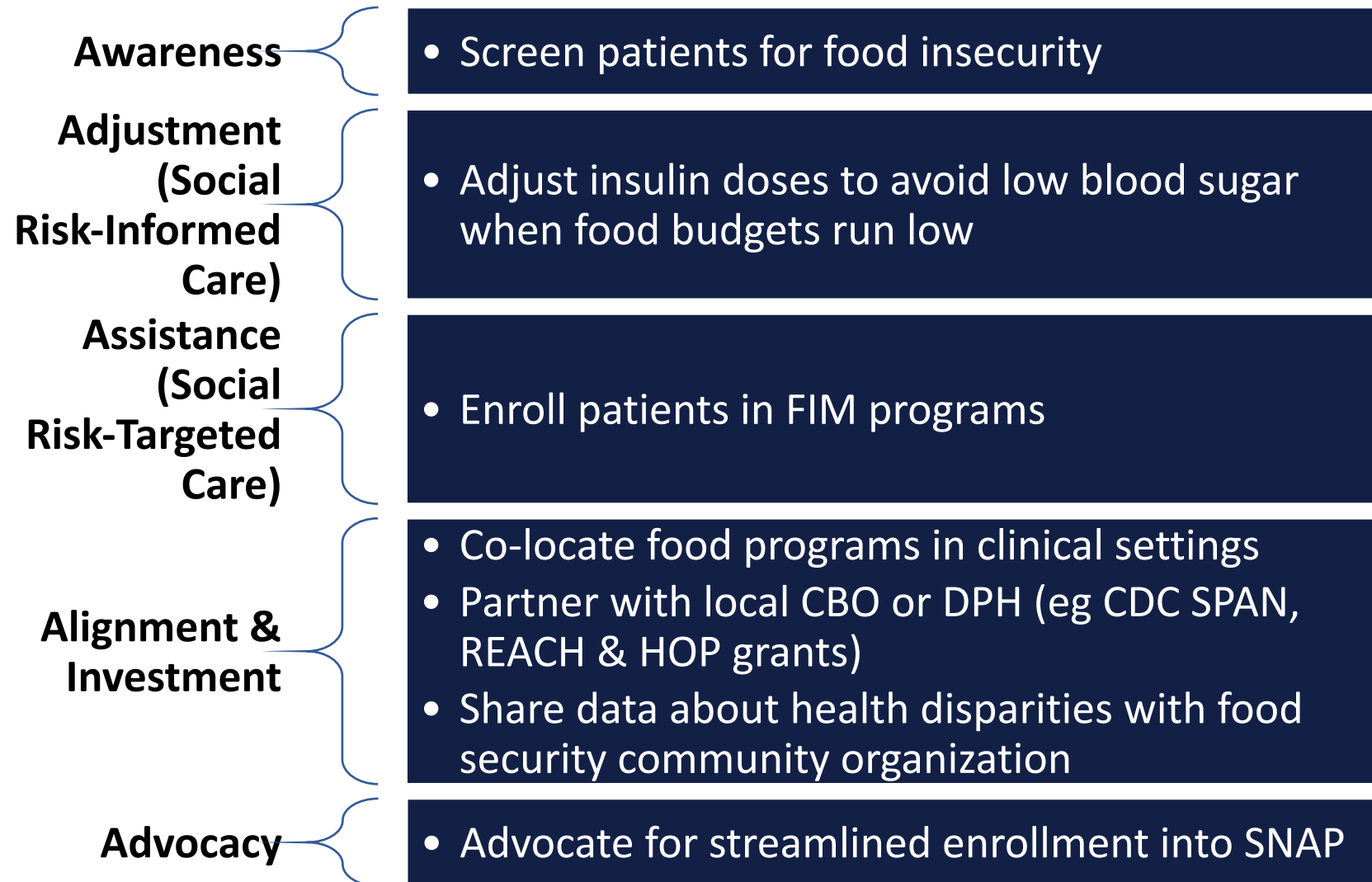
Background	4
The Burdens of Food Insecurity and Nutrition Insecurity	6
Nutrition Security in the Framework of Structural and Social Determinants of Health	8
Equity	8
Food is Medicine	9
Food is Medicine Programs	12
Eligibility for Food is Medicine Programs	13
Referrals to Food is Medicine Programs	14
Spectrum of Food is Medicine Programs	16
Challenges and Opportunities for Partnership	26
Community-Level Food & Nutrition Security Assessment	28
Building Support for Food is Medicine Programs	32
Evaluation	34
Data Collection and Reporting	35
Metrics	38
Quality Improvement vs. Research	41
Institutional Review Boards	42
Data Sharing	43
Funding Mechanisms	44
Grant Funding	45
Healthcare Quality Improvement and Private Sector Funds	47
Medicaid and Medicare Benefits	47
Healthcare Provider Pathways	49
Sustainability through Policy	49
Conclusions	50
References	52
Appendix	60

NASEM Health Care System Activities that Strengthen Social Care Integration: 5 A's



A Vision for the Future

5 A's for Food Security



Adapted from: SIREN (Laura Gottlieb)



In the chat box...

What are some policy opportunities for advancing Food is Medicine at the local, state, and federal levels?

Conclusions

- Tremendous momentum toward implementing & evaluating FIM programs across the US
- Evaluation of FIM programs is hard
 - Right-size your evaluation for the size of your program
 - Examine all elements of the RE-AIM framework, not just effectiveness
 - For effectiveness: consider food security, dietary intake, satisfaction, and redemption rate
 - Use the same metrics others are using
 - We need (and are awaiting)
 - The large, rigorously conducted trial
 - Implementation science approaches to establish best practices

**Want to learn more about NOPREN
or join the network?**

Visit <https://nopren.ucsf.edu>
OR
Contact NOPREN@ucsf.edu

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Nutrition & Obesity
POLICY RESEARCH & EVALUATION NETWORK

Q&A

DNPAO FRUIT AND VEGETABLE PROGRAMS

Diane M. Harris, PhD MPH CHES

Team Lead, Healthy Food Environments

dmharris@cdc.gov

Good Nutrition



Regular Physical Activity



Healthy Weight



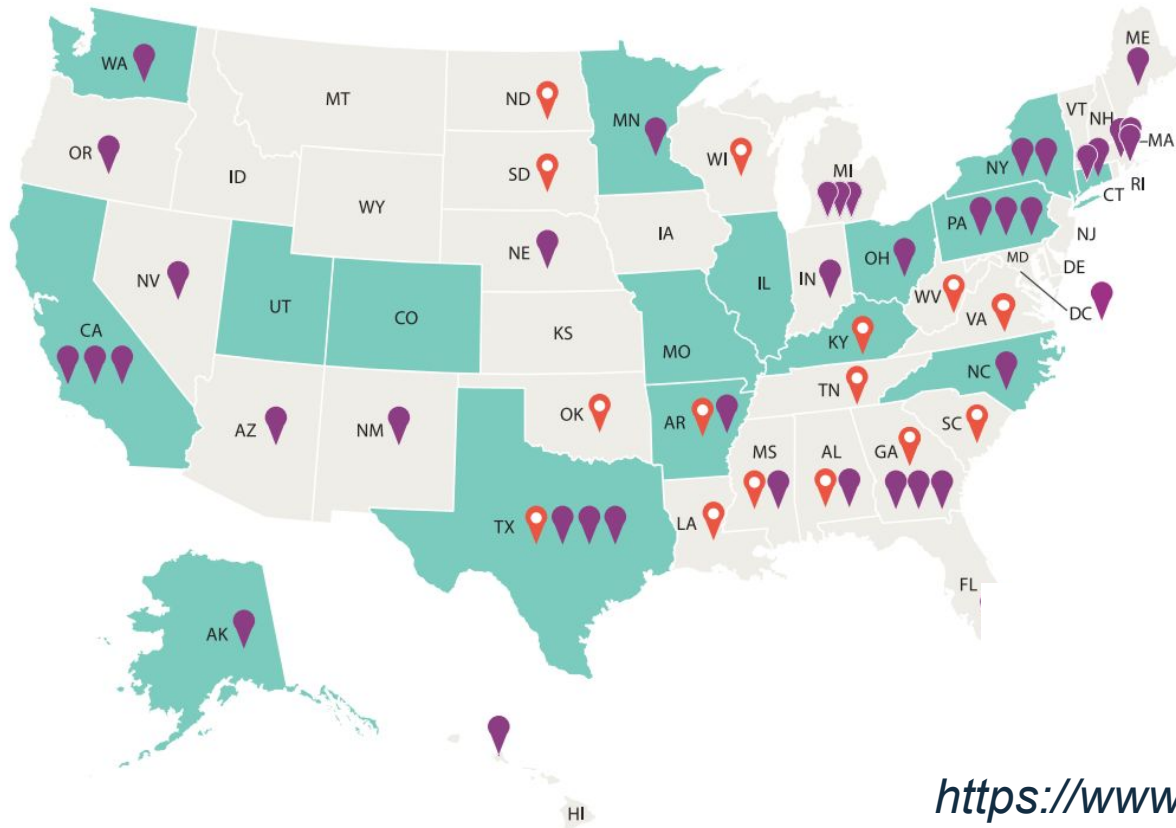
Centers for Disease Control and Prevention

National Center for Chronic Disease Prevention and Health Promotion

Division of Nutrition, Physical Activity, and Obesity (DNPAO)



Fiscal Year 2022



■ State Physical Activity and Nutrition Program (SPAN)

- 16 state and local recipients strengthening efforts to implement interventions that support healthy nutrition, safe and accessible physical activity, and breastfeeding

📍 High Obesity Program (HOP)

- 15 land grant universities leveraging community extension services to increase access to healthier foods and opportunities for physical activity in counties that have more than 40% of adults with obesity

📍 Racial and Ethnic Approaches to Community Health (REACH) Program

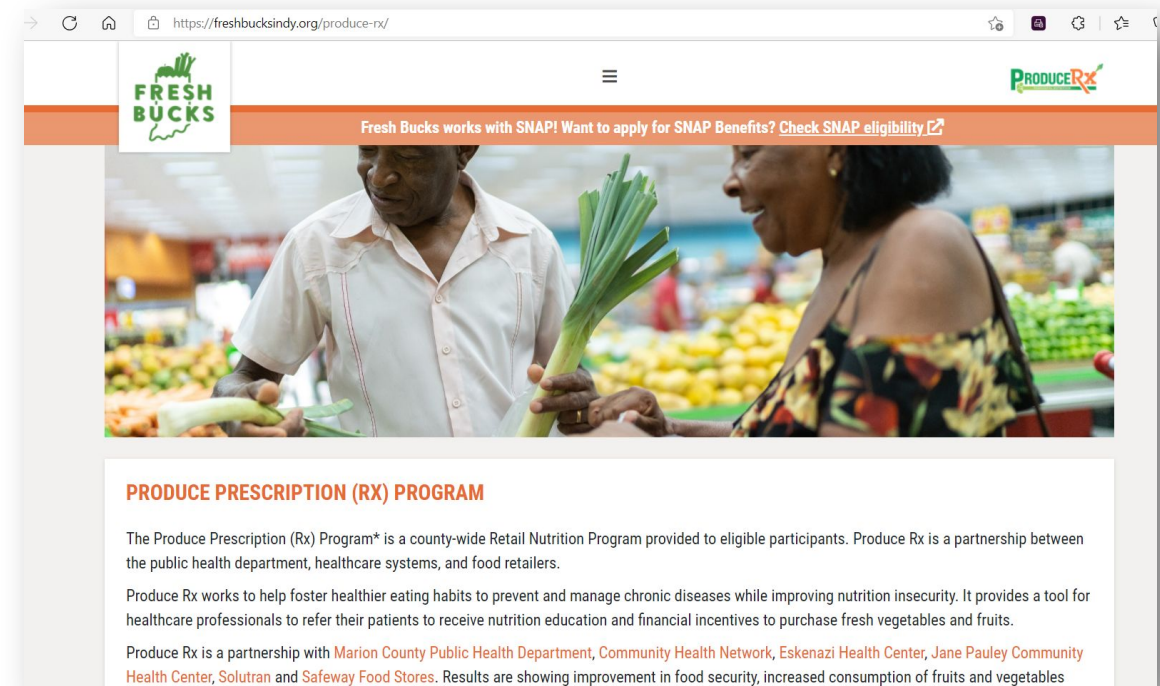
- 40 organizations aiming to improve health, prevent chronic diseases, and reduce health disparities among racial and ethnic populations with the highest risk, or burden, of chronic disease

<https://www.cdc.gov/nccdphp/dnpao/state-local-programs/index.html>

DNPAO'S FUNDED PROGRAM RECIPIENTS

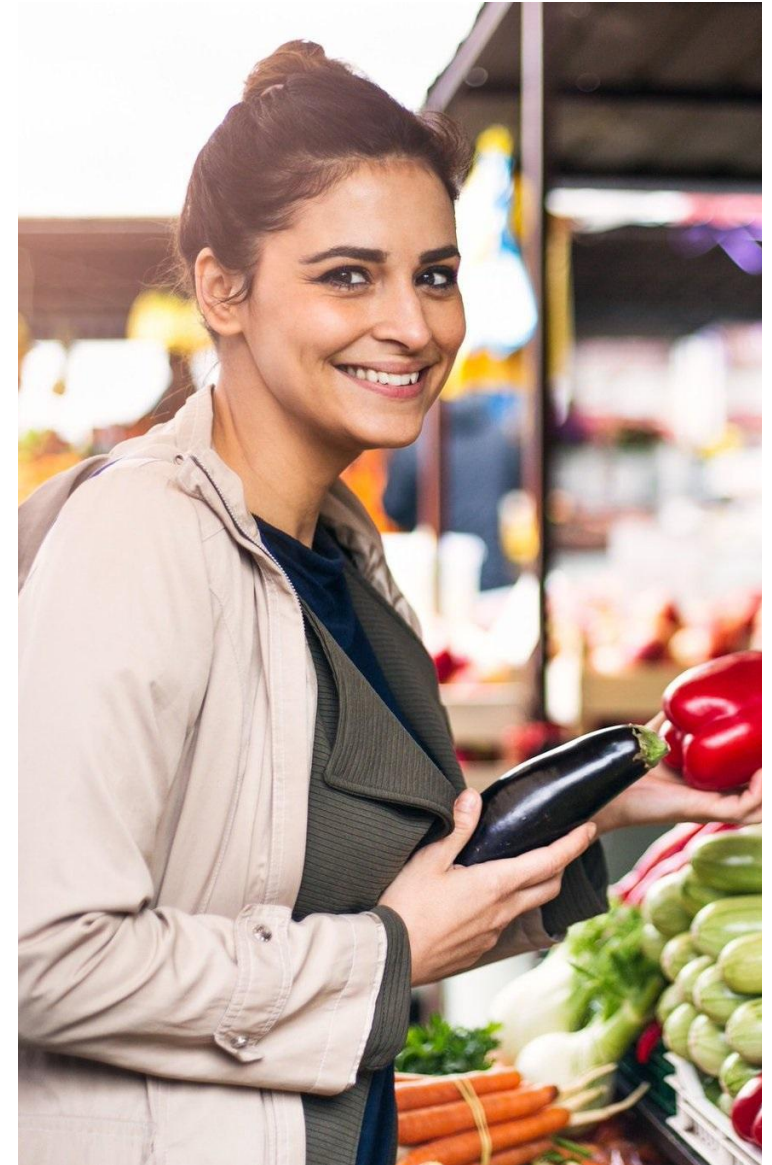
CURRENT REACH RECIPIENTS WORKING ON FOOD IS MEDICINE: PRODUCE PRESCRIPTION PROGRAMS

- Eastern Michigan University
- Health & Hospital Corporation of Marion County
- Houston County Board of Health
- Multnomah County Health Department
- Partners in Health
- Presbyterian Healthcare Services
- Penn. State University Hershey Medical Center
- The Y of Coastal Georgia, Inc.
- Navajo Nation



'23 EXPAND EXISTING FRUIT AND VEGETABLE VOUCHER INCENTIVE AND PRODUCE PRESCRIPTION PROGRAMS

- **State**
 - Engage representatives from Medicaid programs in implementation, expansion, and evaluation incentive or produce prescription programs.
 - Convene state agencies to align activities related to incentive or prescription programs.
- **Local**
 - Help local program providers identify funding sources
 - Build clinical-community linkages to learn what assets are already available
- **State and Local**
 - Strengthen or launch regional, state, or local food policy councils
 - Connect incentive and prescription programs to local food sources



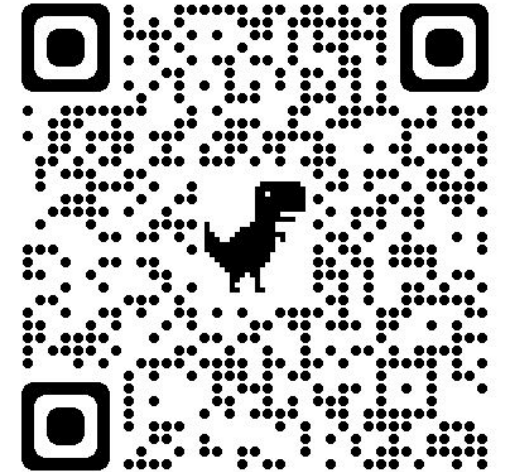
<https://www.cdc.gov/nutrition/state-and-local-strategies/priority-incentives-prescriptions.html>

Announcements

Scan the QR code to evaluate this session

Join us for the next session of the speaker series!

- Wednesday, July 12 from 4:00 - 5:00 PM ET
- Title: WIC Policy: Behind the Curtain



Apply to be a presenter at the Virtual Student Presentation and Poster Session on August 16!

Application Opens: Wednesday, June 14

Applications Due: Wednesday, July 19 by 5pm EST