

Healthy
Eating
Research



NOPREN
Nutrition & Obesity
POLICY RESEARCH & EVALUATION NETWORK

Summer Speaker Series for Students 2024

Getting Started!

- Update your name on Zoom, if needed
 - *Right click on your Zoom box, click “rename”*
- Type your name and institution into the chat box!
 - *Question: Which best describes you?*
 - *Ex. Undergraduate Student, Dietetic Intern, Masters Student, Doctoral Student, Post Doc, Public Health Practitioner, Researcher/Professor, Other*
- Remember to keep yourself on mute.
- Type your questions into the chat box.

NOPREN HER Summer Series for Students

Schedule and Topics

- June 12: Food Policies in Schools - More than just Lunch!
- **June 26: Food is Medicine: What does it mean?**
Where are we going?
- July 10: Leveraging Food Service Contracts at 4-year Public Universities to Understand Meal Plan Costs and Affordability
- July 24: Policy Systems and Environmental Strategies to Support Young Children's Diet and Health
- August 7: Collaborating Successfully across Sectors toward Nutrition Security
- August 14: Student Presentations

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

For more information, to register, or to view past recordings: <https://nopren.ucsf.edu/her-nopren-summer-speaker-series-students-2024>

Student Presentations!

The HER/ NOPREN Summer Speaker Series will end with Student Presentations and Poster Sessions on August 14. Stay tuned for more details!

Selected students will give a presentation on a nutrition-related project or research they worked on over the summer. **Applications are due July 17th.** To apply, scan QR code below.



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Session 2:

Food is Medicine –

What does it mean? Where are we going?

Food Security Work Group

The mission of the Work Group is to examine, implement, and disseminate work to support food security through evidence-informed policies, programs, and practices.

In our work, we aim to include and uplift the voices of communities who face historic and ongoing oppression, as these groups are more likely to experience food insecurity.

**To join the listserv, please contact our work group fellow:
Ximena Perez-Velazco (ximenapv@live.unc.edu)**

Today's Presenters



Hilary Seligman, MD MAS
University of California San
Francisco



Lisa Goldman Rosas, PhD MPH
Stanford University



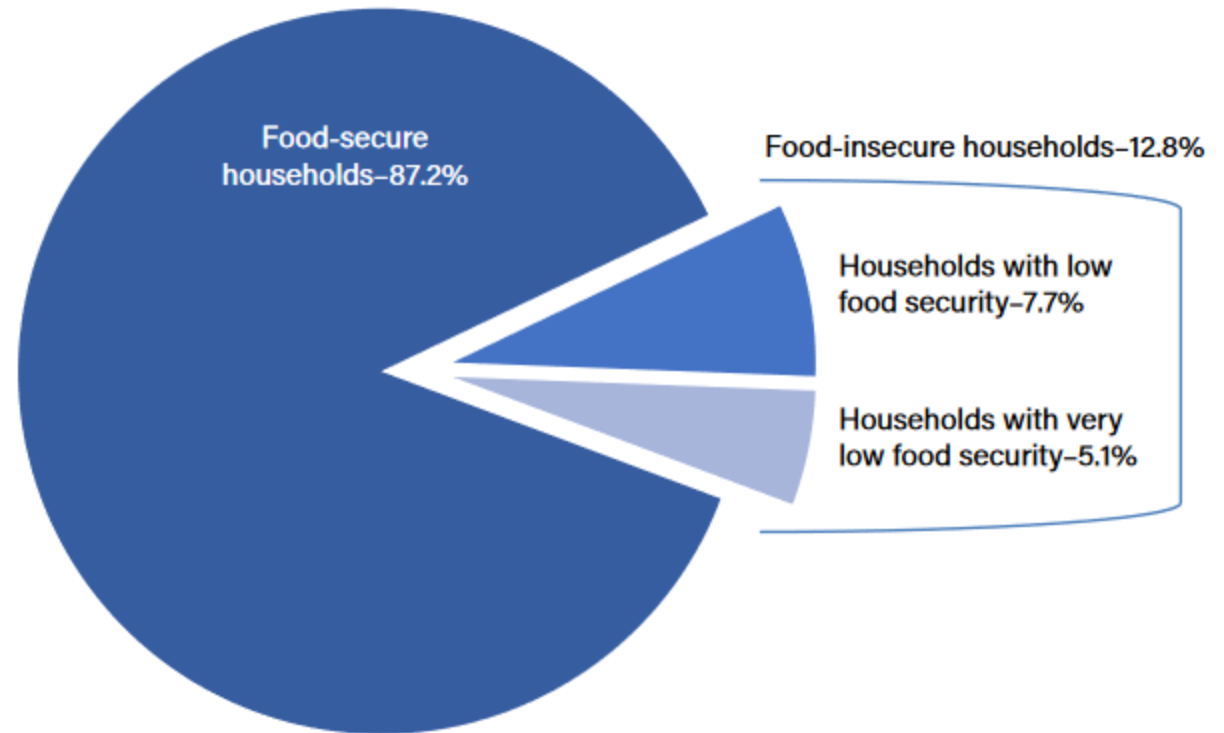
Melissa Akers, MPH CPH
University of California San
Francisco



Ronli Levi, MPH RDN
University of California San
Francisco

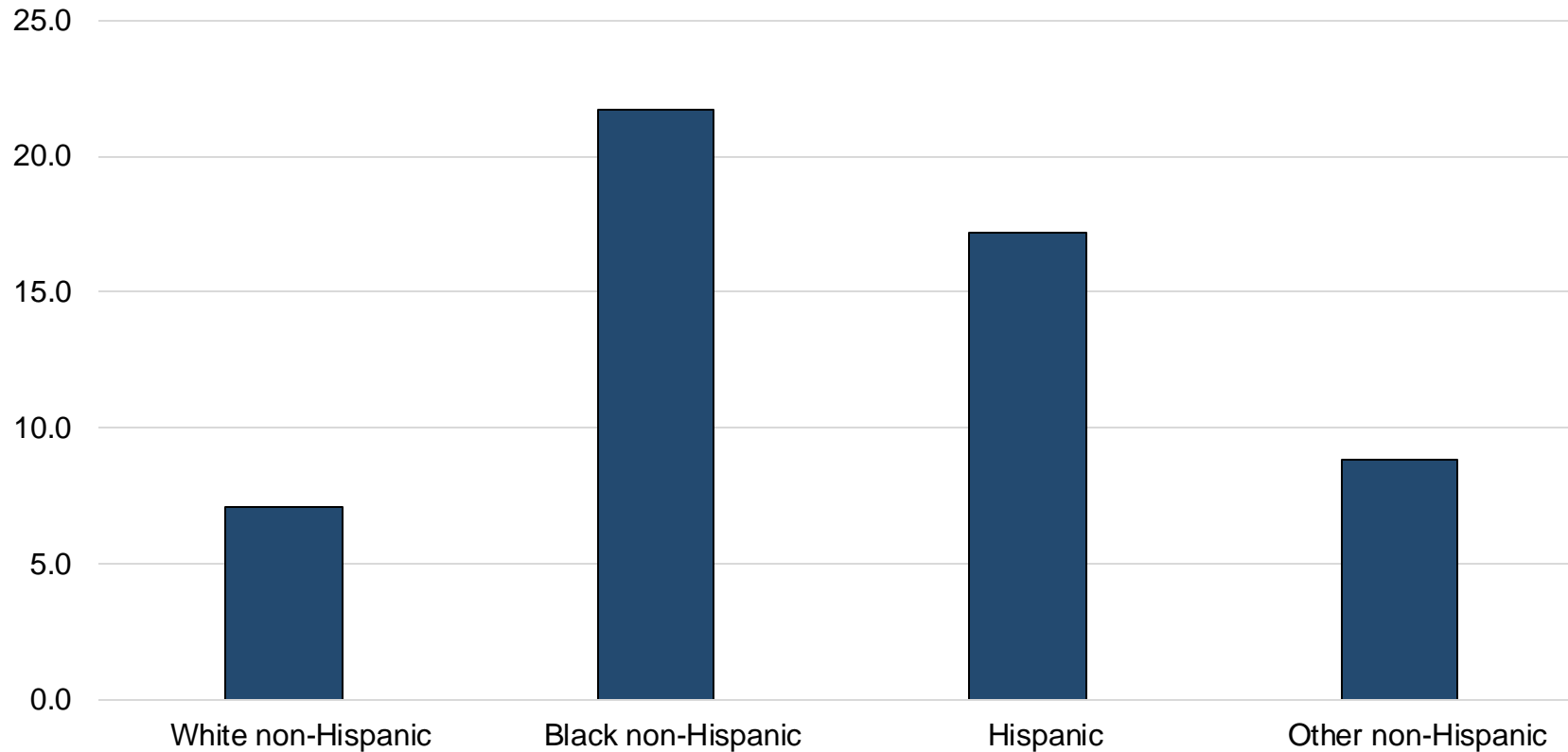
1 in 8 US Households Food Insecure in 2022

Figure 1
U.S. households by food security status, 2022



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2022 Current Population Survey Food Security Supplement.

Disparities in food insecurity rates by race, 2020



These disparities mimic disparities in chronic disease risk.

Source: USDA, Economic Research Service, using data from the December 2020 Current Population Survey Food Security Supplement, U.S. Census Bureau

Bidirectional relationship between food insecurity and poor health

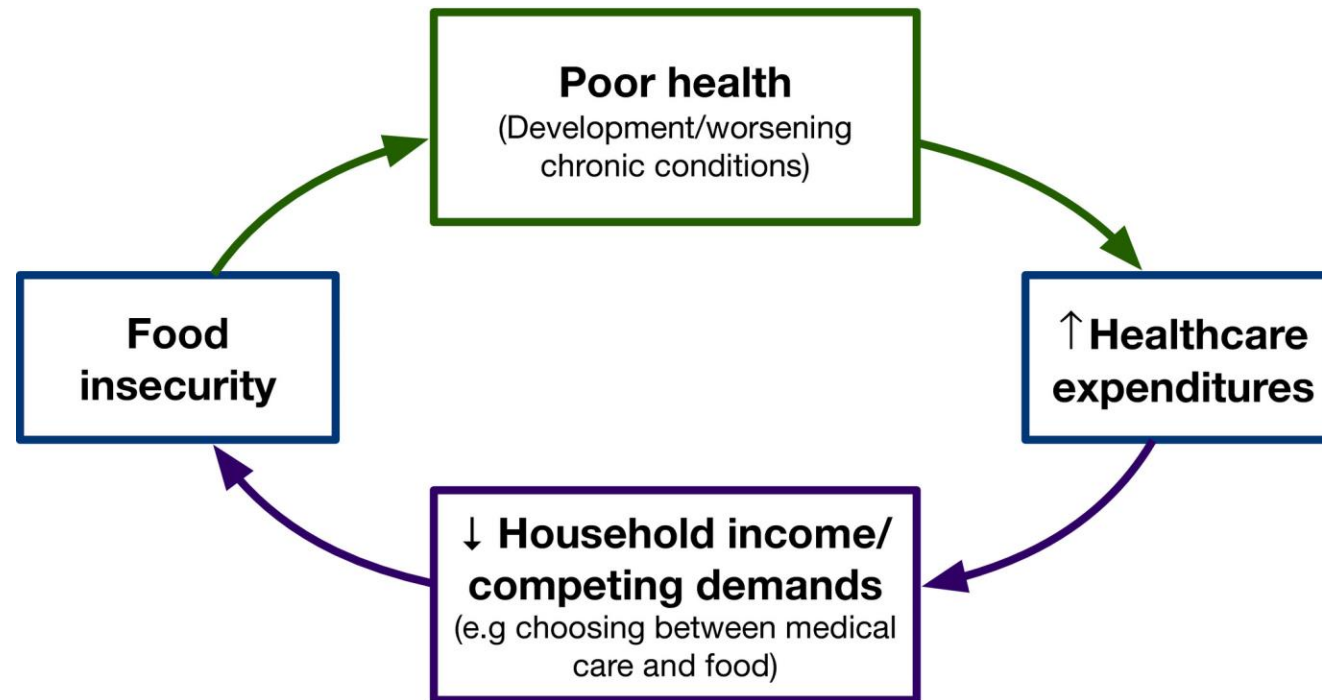
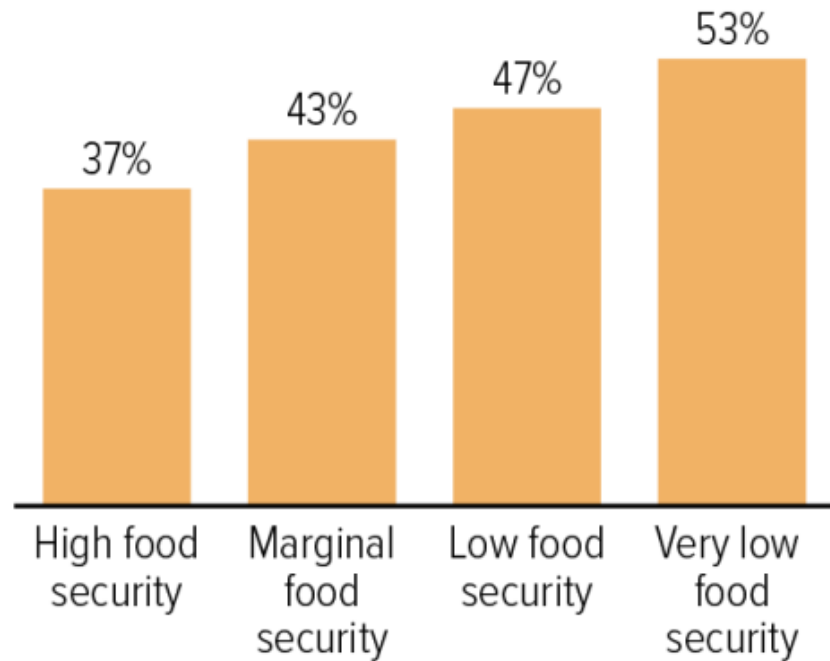


FIGURE 1

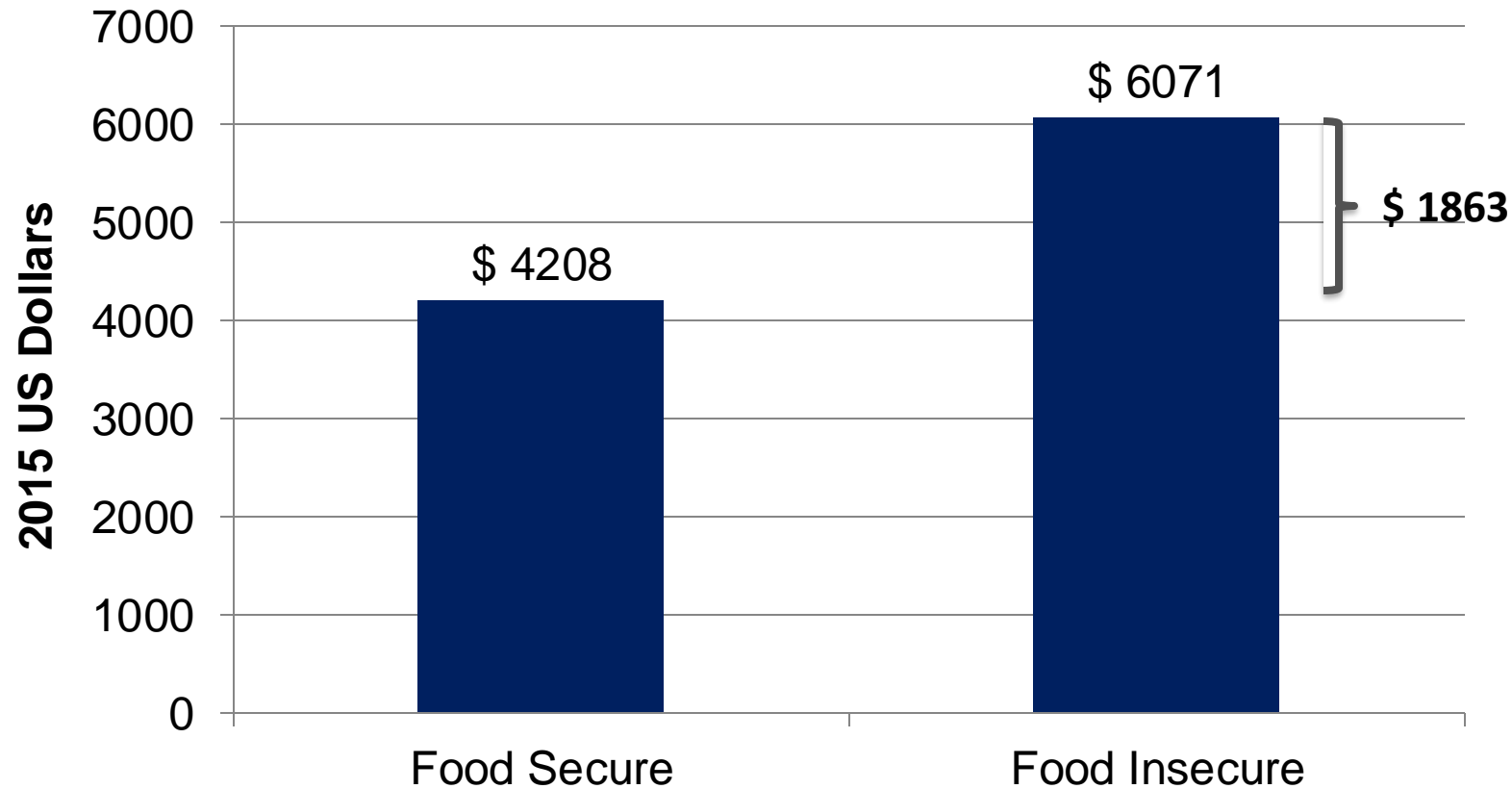
Adults in Households with Less Food Security Are Likelier to Have a Chronic Illness

Probability of any chronic illness



Source: Christian A. Gregory and Alisha Coleman-Jensen, "Food Insecurity, Chronic Disease, and Health Among Working-Age Adults," U.S. Department of Agriculture, July 2017. Adjusted for differences in demographic, socioeconomic and other characteristics. Sample includes working-age adults in households at or below 200% of the federal poverty level.

Food Insecurity & Subsequent Annual Health Care Expenditures



NHIS-MEPS data adjusted for: age, age squared, gender, race/ethnicity, education, income, rural residence, and insurance.

Berkowitz, Basu, and Seligman. Health Services Research: 2017.

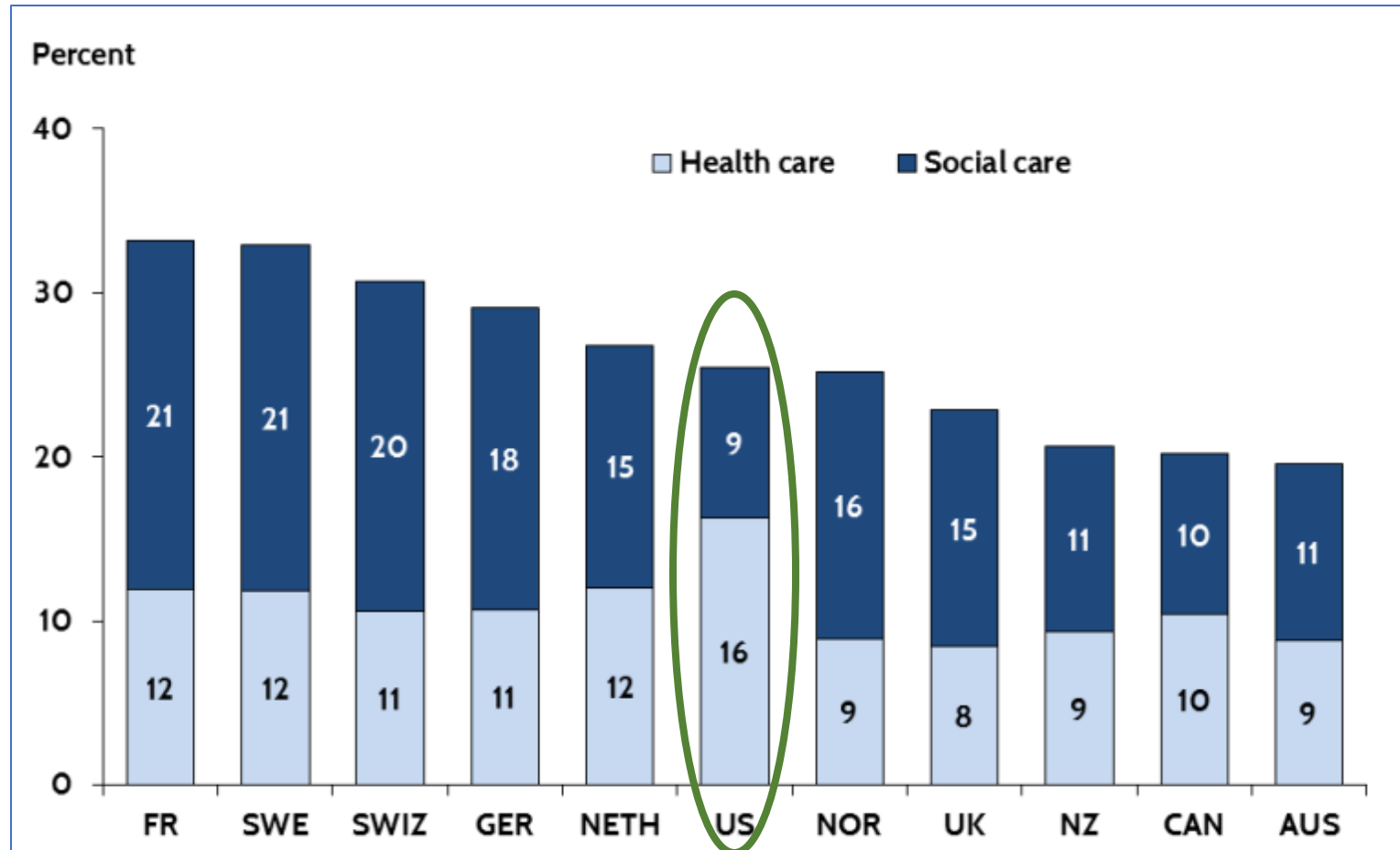


\$77.5

billion

**additional health care
expenditures annually**

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



These is the downstream impact of policies we have put into place.

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

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

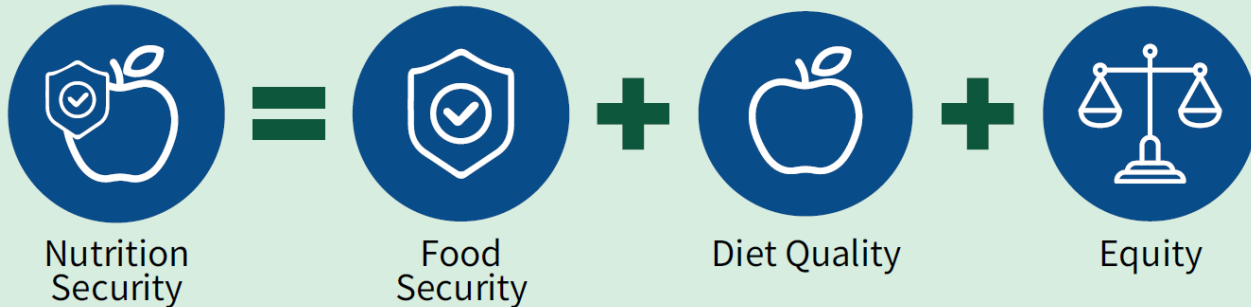
Social Needs

“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)

Nutrition Security vs Food Security (simplified)

WHAT IS NUTRITION SECURITY?

Consistent access to nutritious foods that promote optimal health and well-being for all Americans, throughout all stages of life.



HOW DOES NUTRITION SECURITY BUILD ON FOOD SECURITY?

Food security is having *enough* calories.
Nutrition security is having the *right* calories.



- 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

Largest FIM Program



WIC: BUILDING A HEALTHY FOUNDATION



What is WIC?

The Special Supplemental Nutrition Program for Women, Infants, and Children – also known as WIC – supports maternal and child health by providing nutritious supplemental foods, nutrition education, breastfeeding promotion and support, and referrals to important health care and other social services.



Healthy foods



Nutrition education



Breastfeeding support



Referrals

Can FIM programs be scaled?

PROVEN

Can FIM programs impact short and long term health outcomes?

PROVEN

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



- Data transfer between sectors (health care, CBO, & food vendor)
- Data tracking within the electronic health record
- CBO capacity to provide food how, when, where and at the price that healthcare desires
- Fragmentation of the ecosystem outside of healthcare


Spectrum of FIM Programs

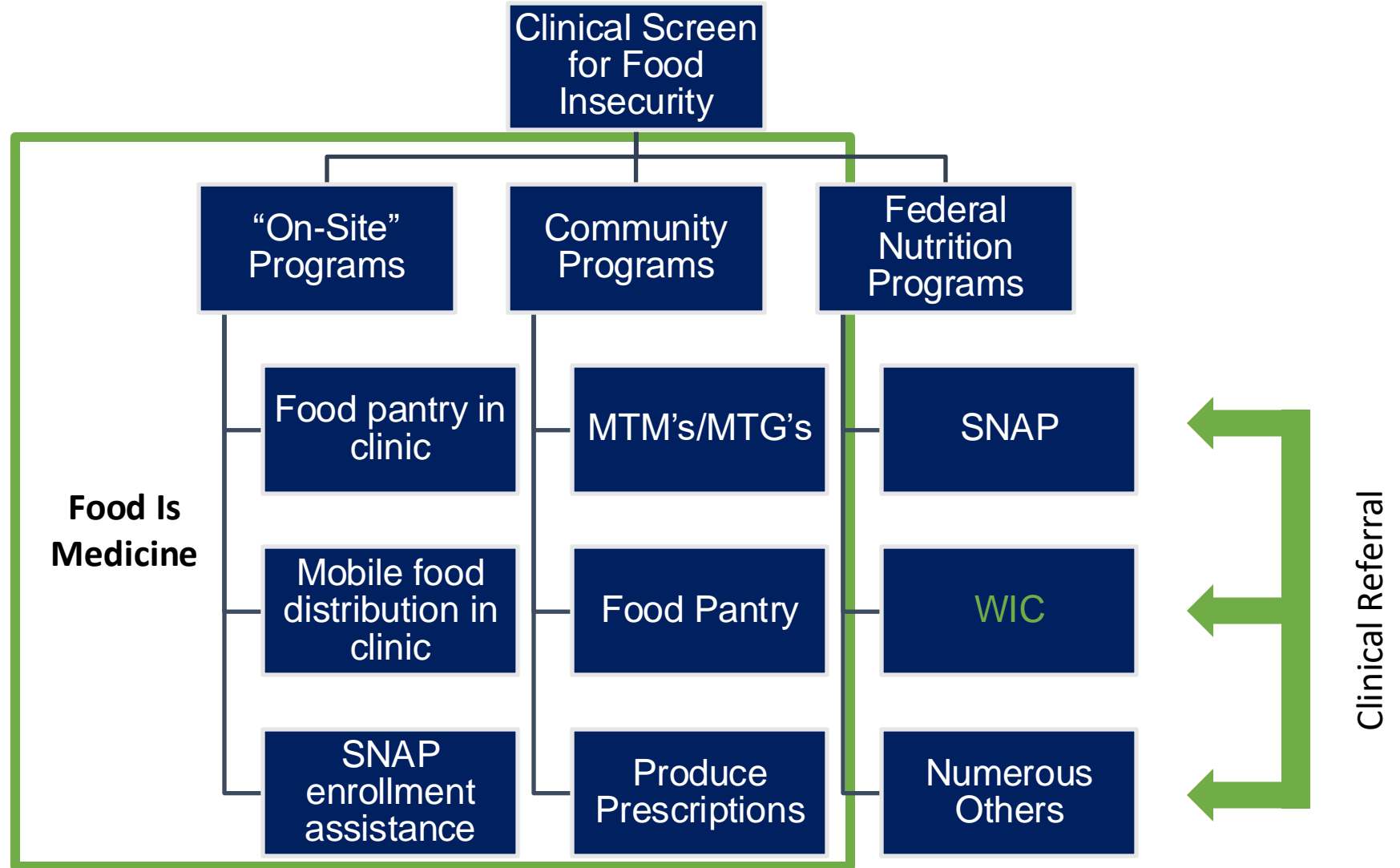
From the perspective of health care

MTM=Medically Tailored Meals

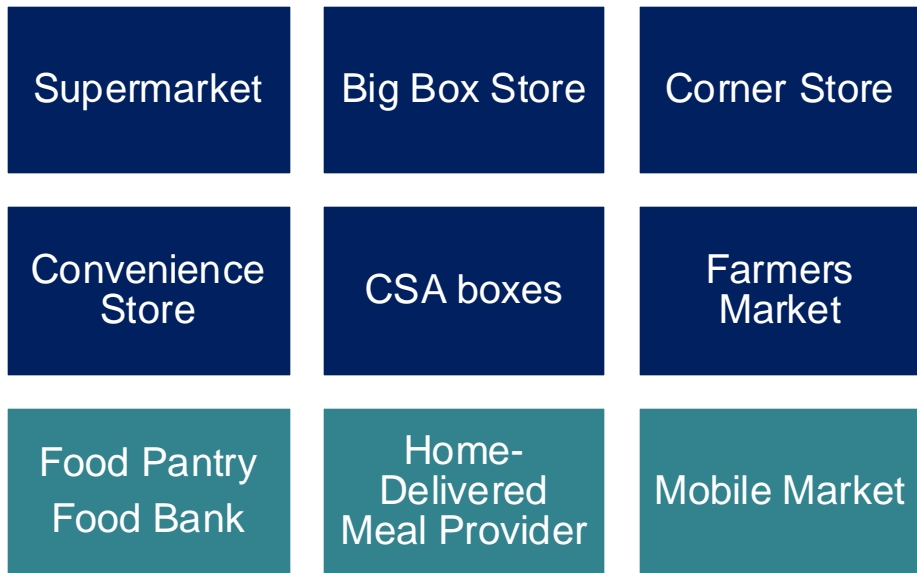
MTG=Medically Tailored Groceries

SNAP=Supplemental Nutrition Assistance Program

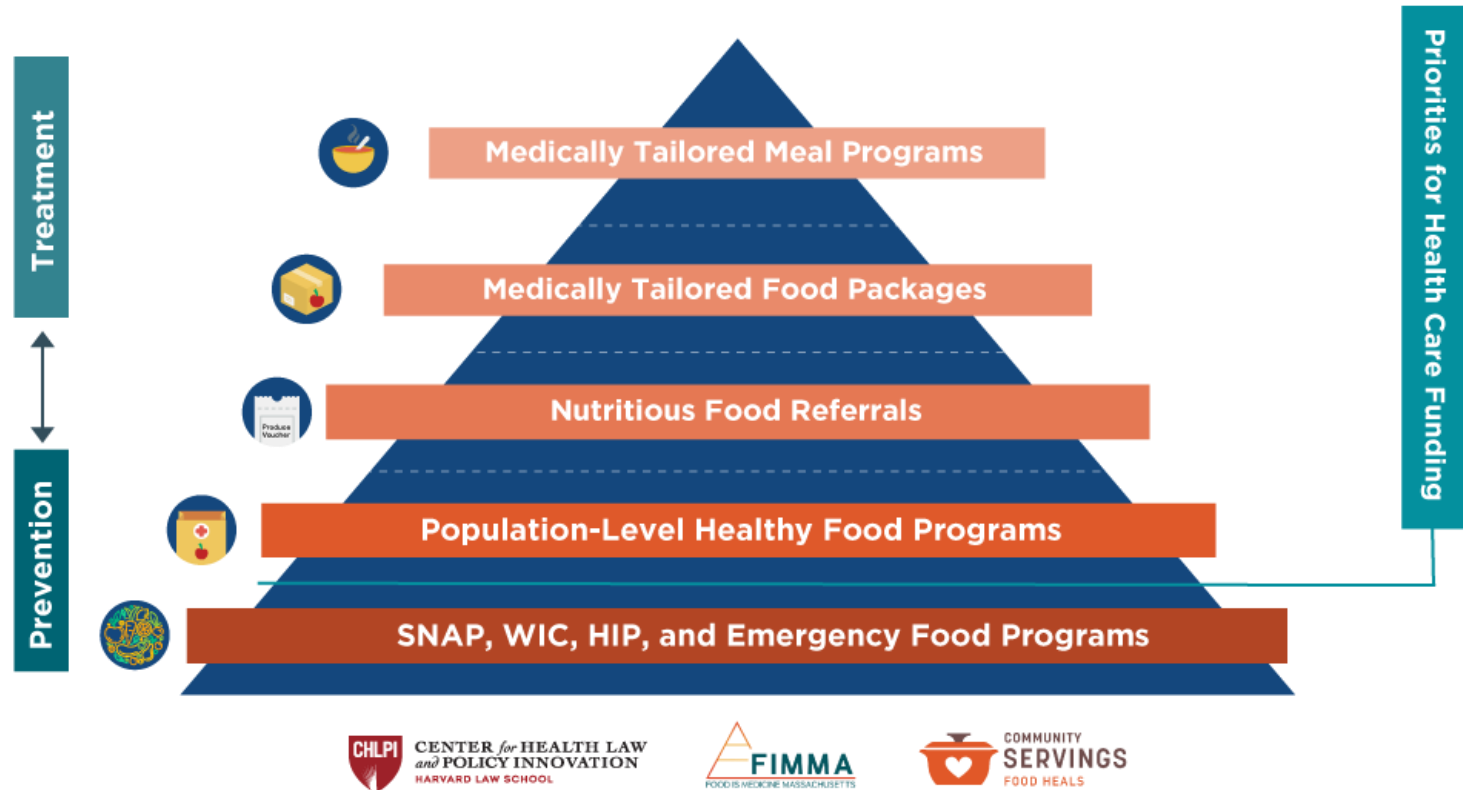
 = "food is medicine"



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 the 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		
MTM's		✓	
	hospital admissions and readmissions, lower medical costs, and improve medication adherence		
MTG's	✓		
	food security		
PPR		✓	
	diet quality, food security, diabetes outcomes		
On-site programs	✓		
	diet quality, food security, diabetes outcomes		

MTM=Medically Tailored Meals

MTG=Medically Tailored Groceries

SNAP=Supplemental Nutrition Assistance Program

PPR=Produce Prescription Program

Summary of Research

Aspen Institute updates:
<https://aspenfood.org/wp-content/uploads/2024/04/Food-is-Medicine-Action-Plan-2024-Final.pdf>

	Weak Evidence	Moderate Evidence	Strong Evidence
WIC			✓
	diet quality, food security, maternal & child birth outcomes, immunization rates, child academic performance		
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	health outcomes, reduces medication non-adherence, and reduces health care expenditures		
MTM's		✓	
	hospital admissions and readmissions, lower medical costs, and improve medication adherence		
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

Figure 1. Number of studies by type of intervention (n=29)

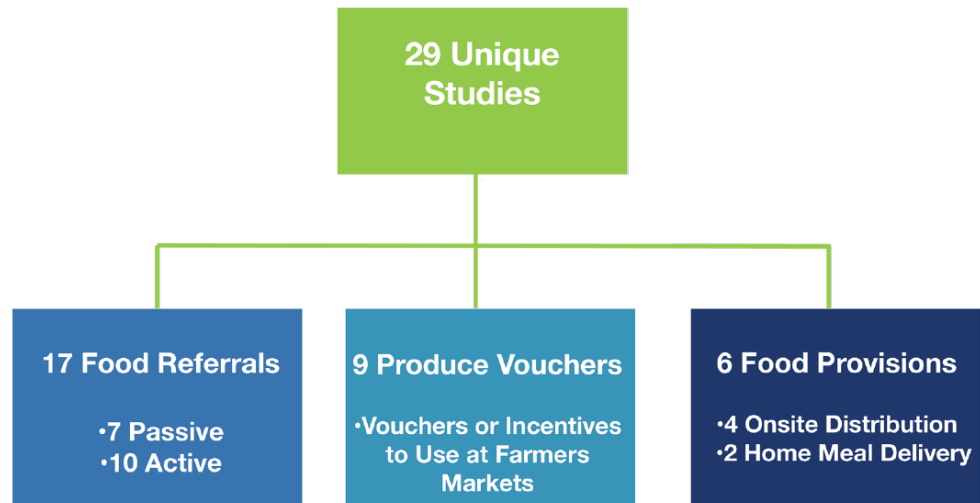


Table 1. Summary of review results: Food insecurity interventions

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



Modelling Studies Have Limitations but Can Fill in Some Gaps

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



Where are the
opportunities?

Opportunities for *the Field*

Access to Large Amounts of Data

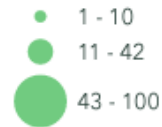
- Shared metrics across numerous programs
 - eg GusNIP Produce Prescription Programs
- Large health systems with a single electronic health record
 - VA, Indian Health Service, other integrated health systems
- Health insurers
 - Claims data

Produce Prescription Programs in the United States: 2010-2020

Legend

Active Produce Prescription Headquarters

Counties Covered



Inactive Produce Prescription Program Headquarters

Counties Covered



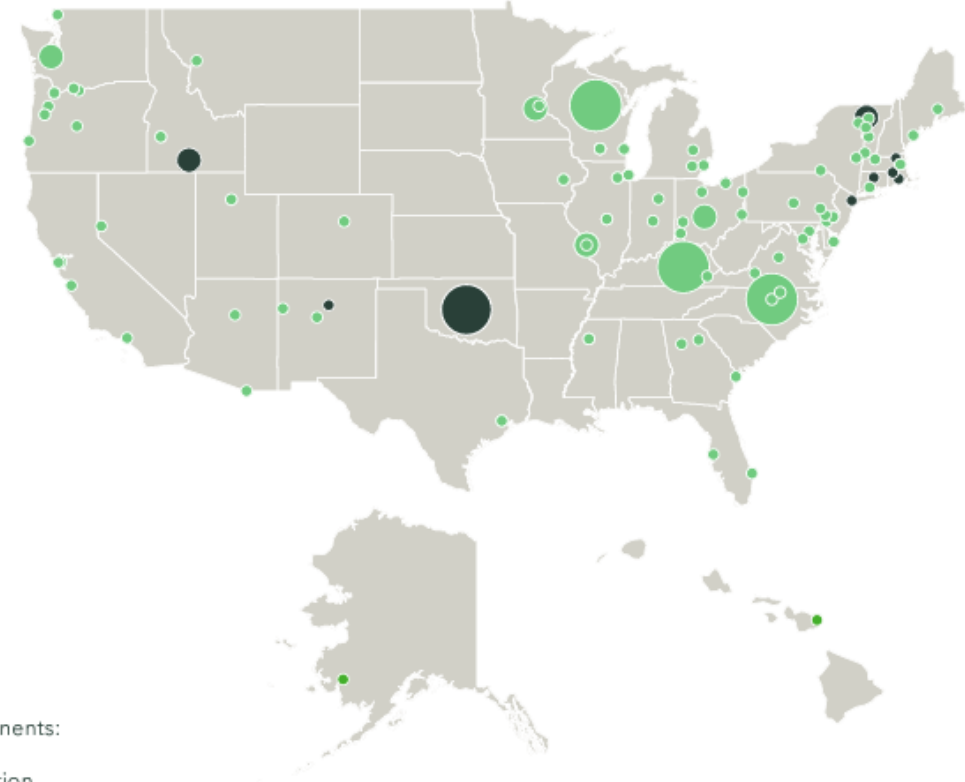
US State Boundaries

Number Active Programs: 94

Number of Inactive Programs: 14

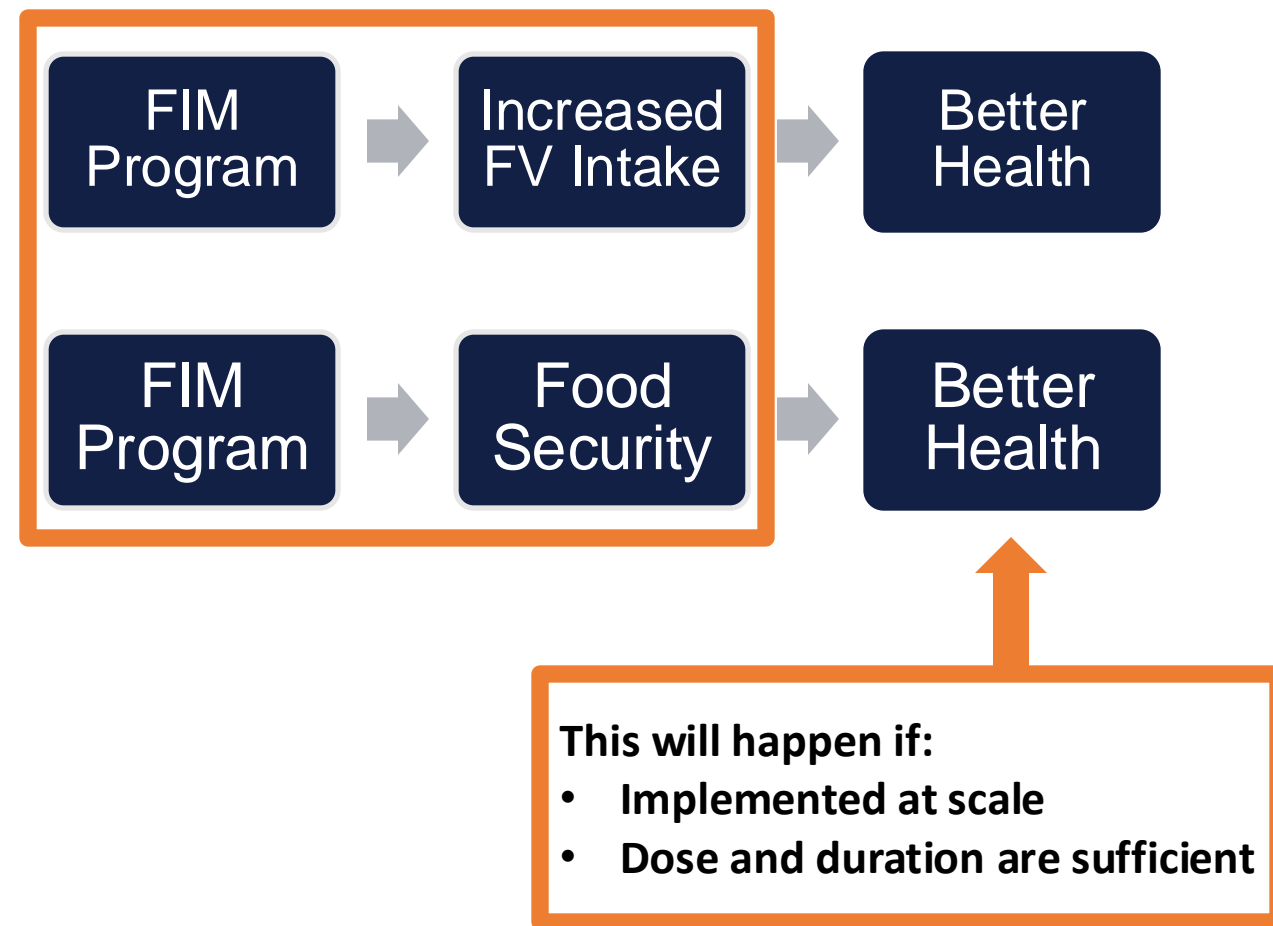
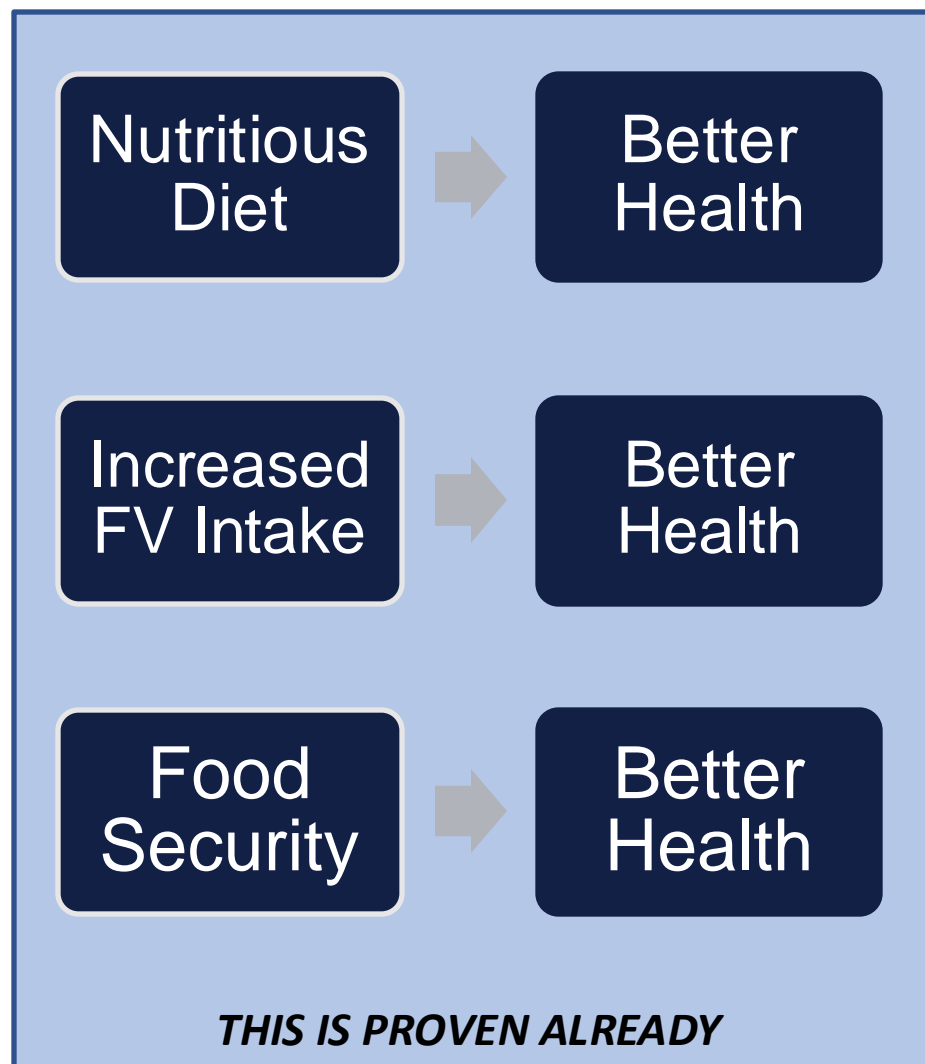
Map reflects programs with these components:

- 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 *Individual Programs*

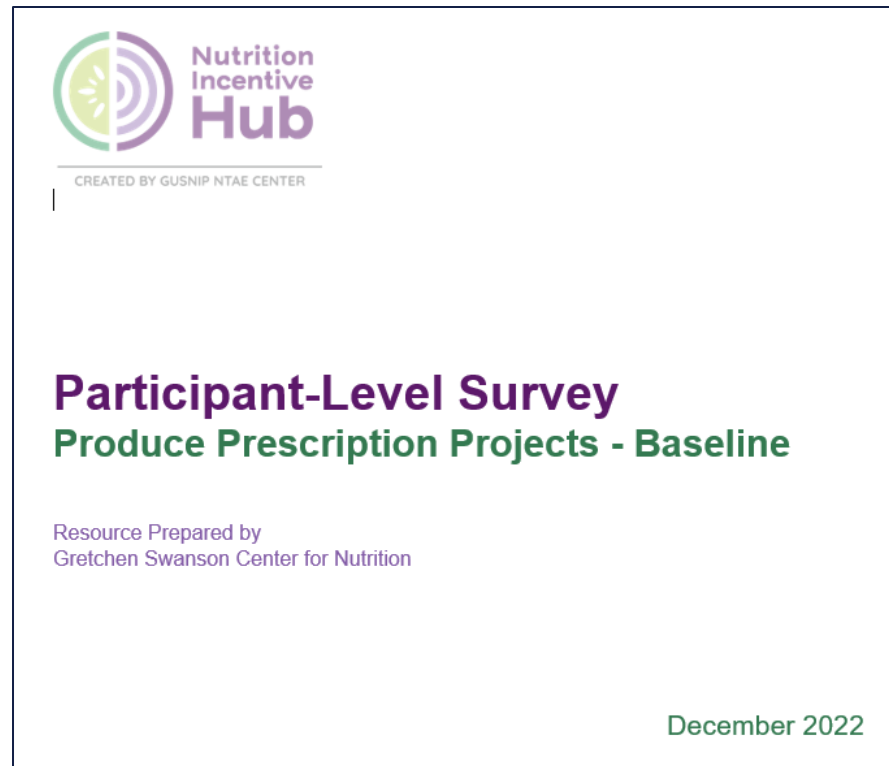
Controversy
Alert!



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.

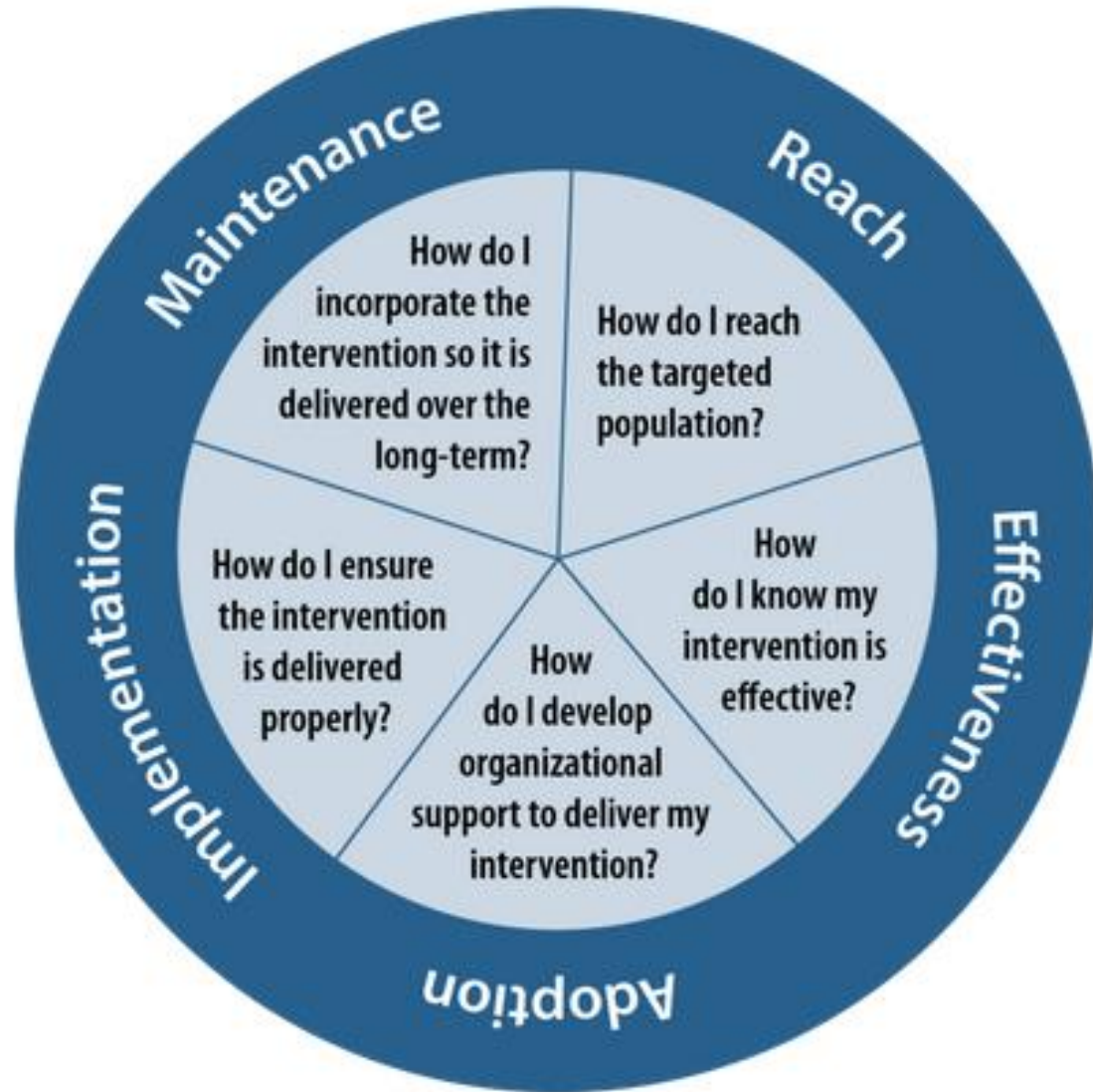
Shared metrics → pooled data →
More participants
More sites



- 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>

Elements of the RE-AIM Framework



Opportunities for Individual Programs: Implementation Science

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.

**BIDEN-HARRIS
ADMINISTRATION
NATIONAL
STRATEGY ON
HUNGER,
NUTRITION, AND
HEALTH**

SEPTEMBER 2022





WHITE HOUSE
CONFERENCE ON
**HUNGER,
NUTRITION,
& HEALTH**

Pillar 2

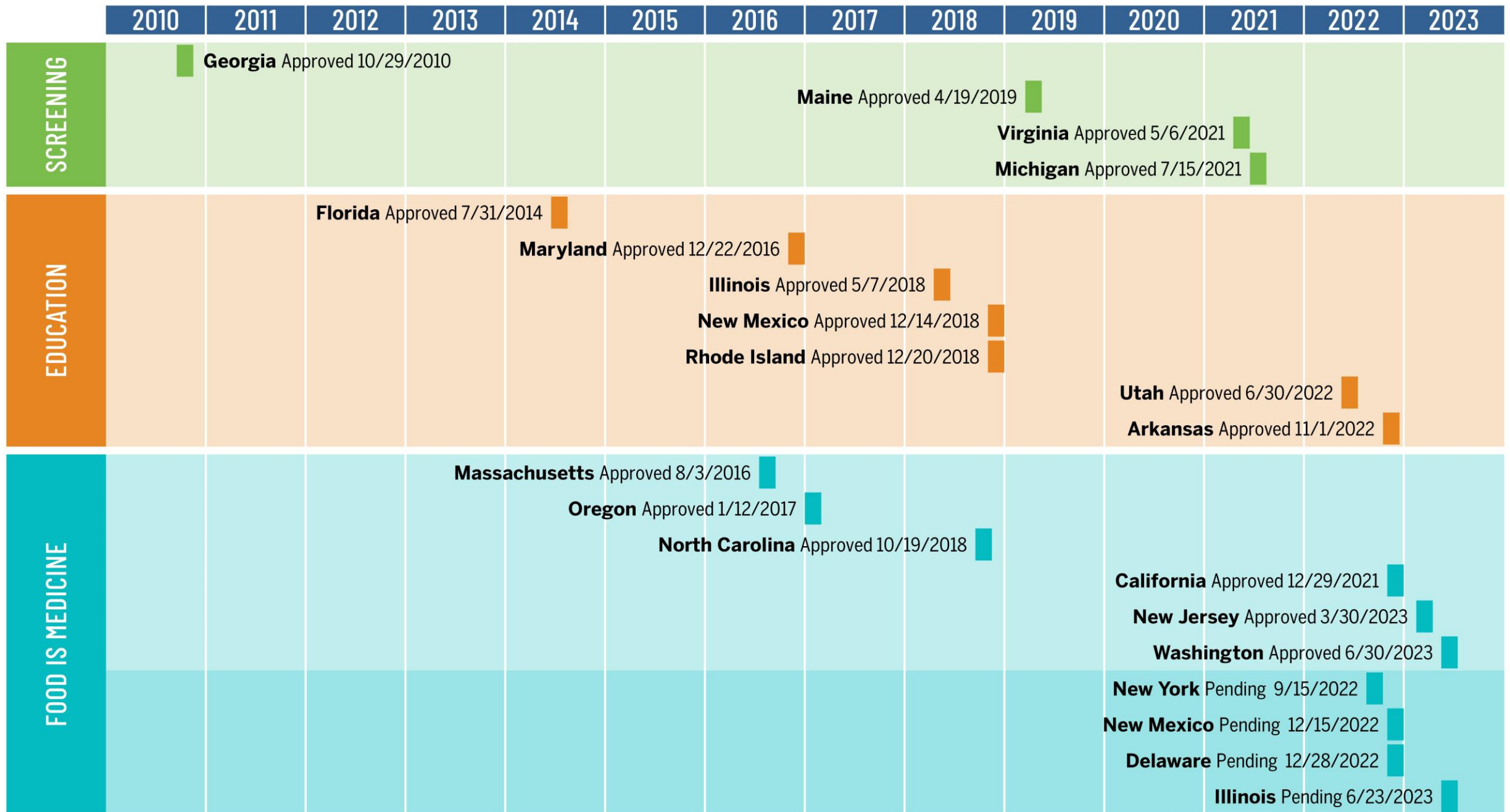
Integrating nutrition and health



#WHConfHungerHealth

Key Plans to Support Pillar 2

- Expands “**food is medicine**” programs in Medicare, Medicaid, the VA, and the IHS, including medically tailored meals and produce prescriptions
- **Universal screening** for food insecurity in federal healthcare systems and **incentivizes payors** to screen for food insecurity and other SDOH
- Supports **data infrastructure** for food insecurity and other SDOH screenings
- Increases **nutrition training** for clinicians



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Q&A

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Breakout Rooms

Purpose: To connect with experts aligned with your potential career trajectory



Hilary Seligman, **MD MAS**
University of California San
Francisco



Lisa Goldman Rosas,
PhD MPH
Stanford University



Melissa Akers, **MPH CPH**
University of California
San Francisco



Ronli Levi, **MPH RDN**
University of
California San
Francisco

Please fill out the session evaluation after today's session.

- You should be directed to fill it out after the call ends OR you may scan the QR code on the right.

Join us for the next session of the speaker series!

- Wednesday, July 10 from 4:00 - 5:00 PM ET
- Title: Leveraging Food service Contracts at 4-year Public Universities to Understand Meal Plan Costs and Affordability



To view the recording or learn more about the series: <https://nopren.ucsf.edu/her-nopren-summer-speaker-series-students-2024>