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# Putting Fresh Food at the Forefront of the Fight Against Chronic Disease and Food Insecurity

**West Virginia Academy of Nutrition and Dietetics**

**Annual Conference and Expo, March 14, 2024**

Gina Wood, MPH, RDN, LD

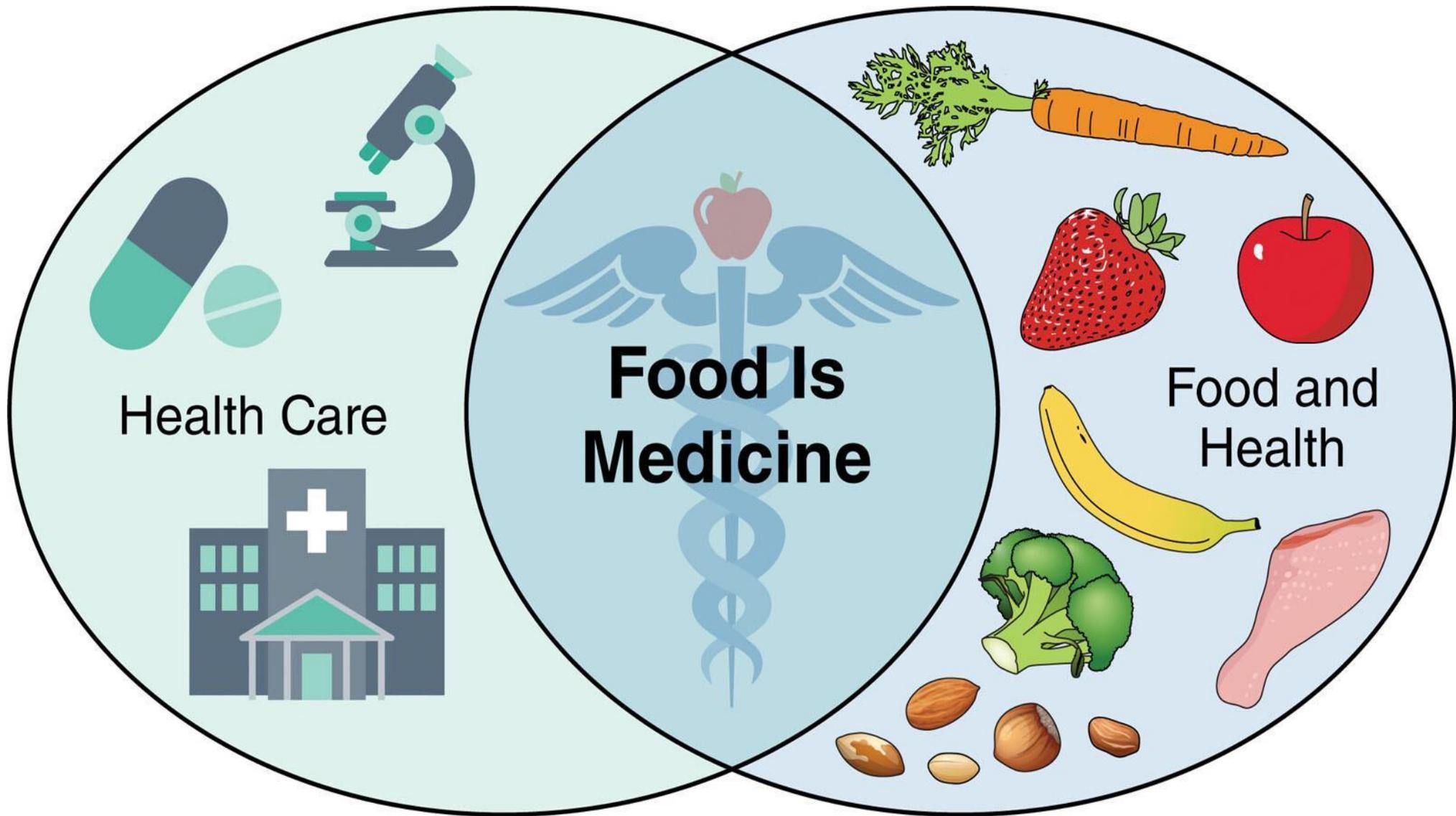


Photo Credit: Amber Higgins, The Garden Market Barbour County

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# Session Outline

- 01 What is “Food is Medicine”?
- 02 Why is it needed?
- 03 Strategies/Interventions
- 04 Funding Pathways
- 05 WV Landscape
- 06 Looking forward?
- 07 Grower and patient perspectives
- 08 Nutrition education snapshot
- 09 Market Experience
- 10 Program Roundtables



Kevin G. Volpp. Circulation. Food Is Medicine: A Presidential Advisory  
From the American Heart Association, Volume: 148, Issue: 18, Pages:  
1417-1439, DOI: (10.1161/CIR.0000000000001182)

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A photograph of fresh green herbs, including a bunch of rosemary tied with a string and other leafy greens, resting on a dark wooden surface. The text is overlaid on the image in a bold, white, sans-serif font.

**Food is Medicine encompasses a broad range of approaches that promote optimal health and healing and reduce disease burden by providing nutritious food — in conjunction with human services, education, and policy change — through collaboration at the nexus of healthcare and community.**



# Basic Principles of “Food is Medicine”

**Recognizes that nourishment is essential for good health, wellbeing, and resilience**

**Facilitates easy access to healthy food across the health continuum in the community.**

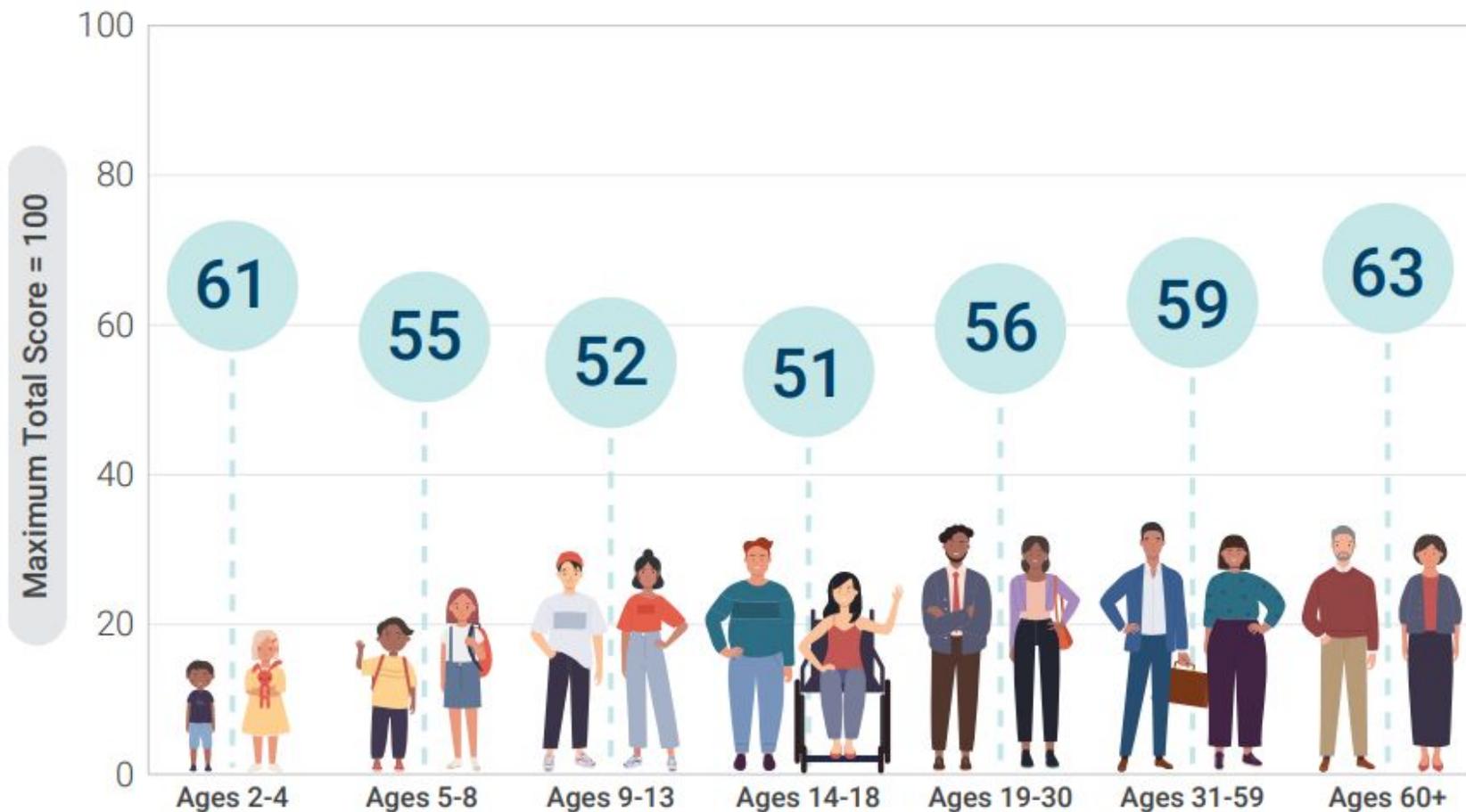
**Cultivates understanding of the relationship between nutrition and health.**

**Unites partners with diverse assets to build sustained and integrated solutions.**

**Invests in the capacity of under-resourced communities.**

Figure 1-4

## Adherence of the U.S. Population to the *Dietary Guidelines* Across Life Stages, as Measured by Average Total Healthy Eating Index-2015 Scores



**NOTE:** HEI-2015 total scores are out of 100 possible points. A score of 100 indicates that recommendations on average were met or exceeded. A higher total score indicates a higher quality diet.

**Data Source:** Analysis of What We Eat in America, NHANES 2015-2016, ages 2 and older, day 1 dietary intake data, weighted.

Average score:  
58/100

Insufficient intake:

- Vegetables
- Fruit
- Whole grains
- Seafood
- Nuts

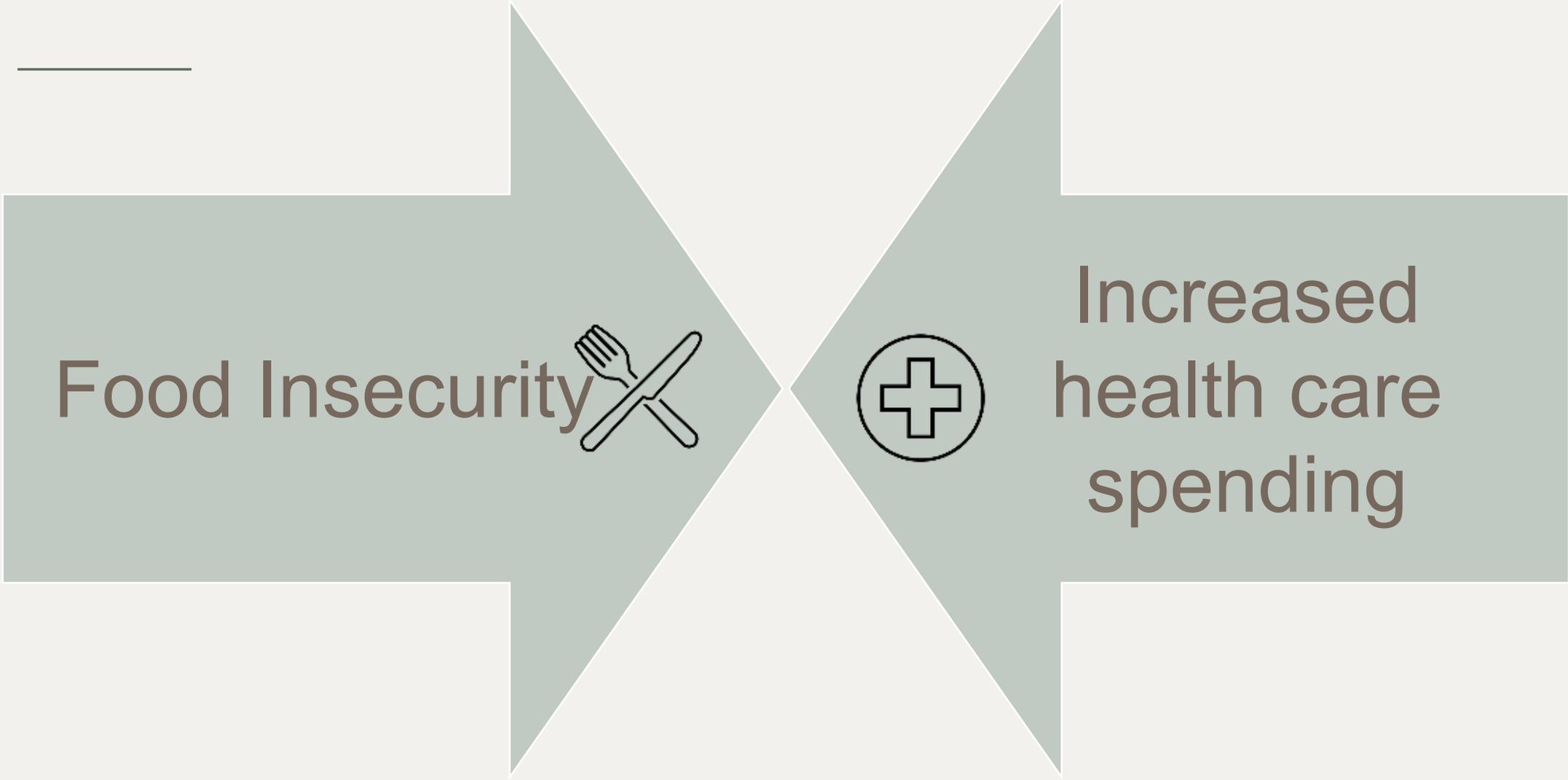
Excessive intake:

- Refined grains
- Added sugars
- Sodium

# A Conceptual Framework: Cycle of Food Insecurity & Chronic Disease



Adapted: Seligman HK, Schillinger D. N Engl J Med. 2010;363:6-9.



Food Insecurity



Increased  
health care  
spending

few strategies exist within the health care system to address  
disparities associated with inadequate access to food

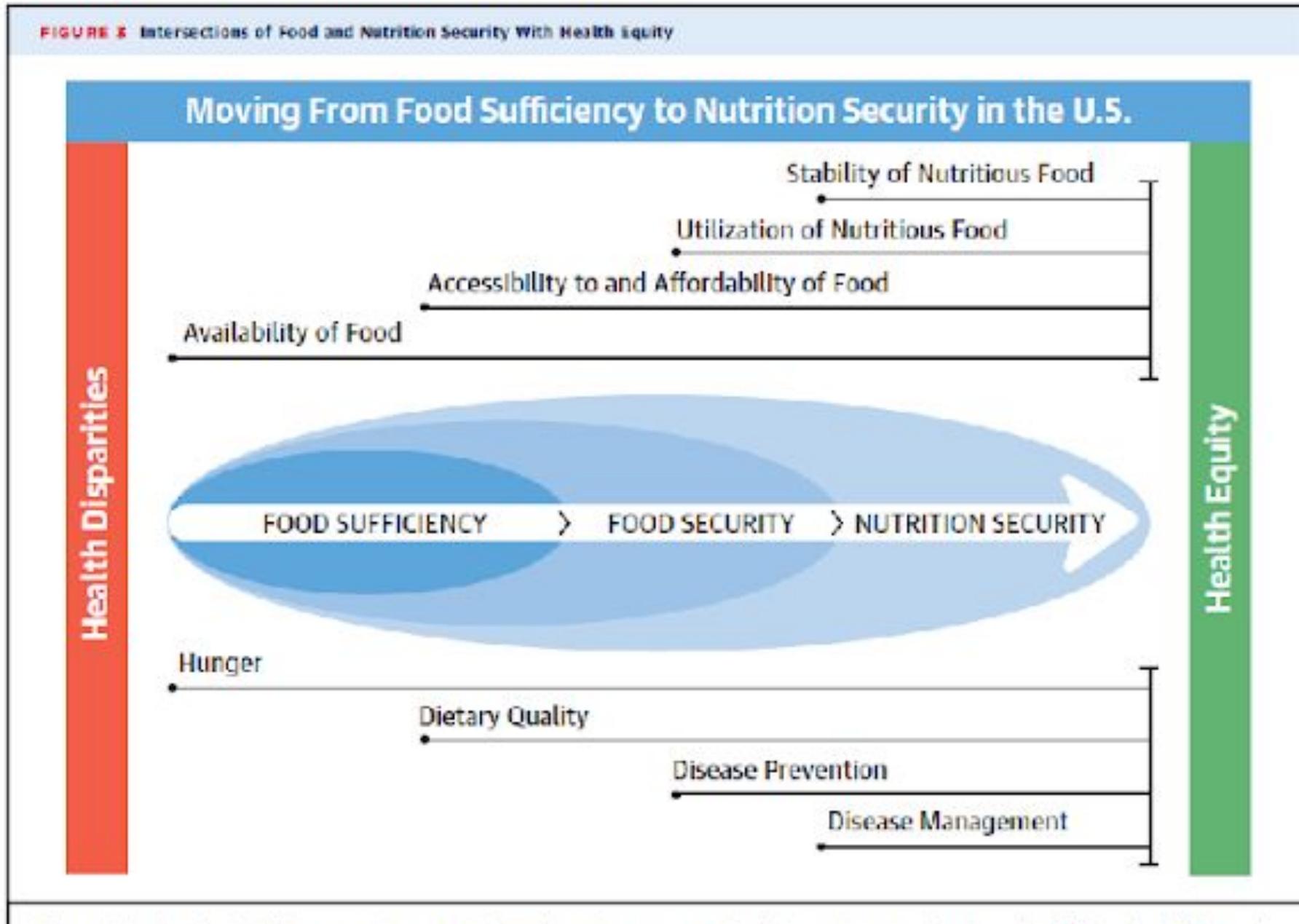
# Shift in Terminology

## WHAT IS NUTRITION SECURITY?

Consistent and equitable access to healthy, safe, and affordable foods that promote optimal health and well-being.



FIGURE 3 Intersections of Food and Nutrition Security With Health Equity



# FIM in the National Spotlight

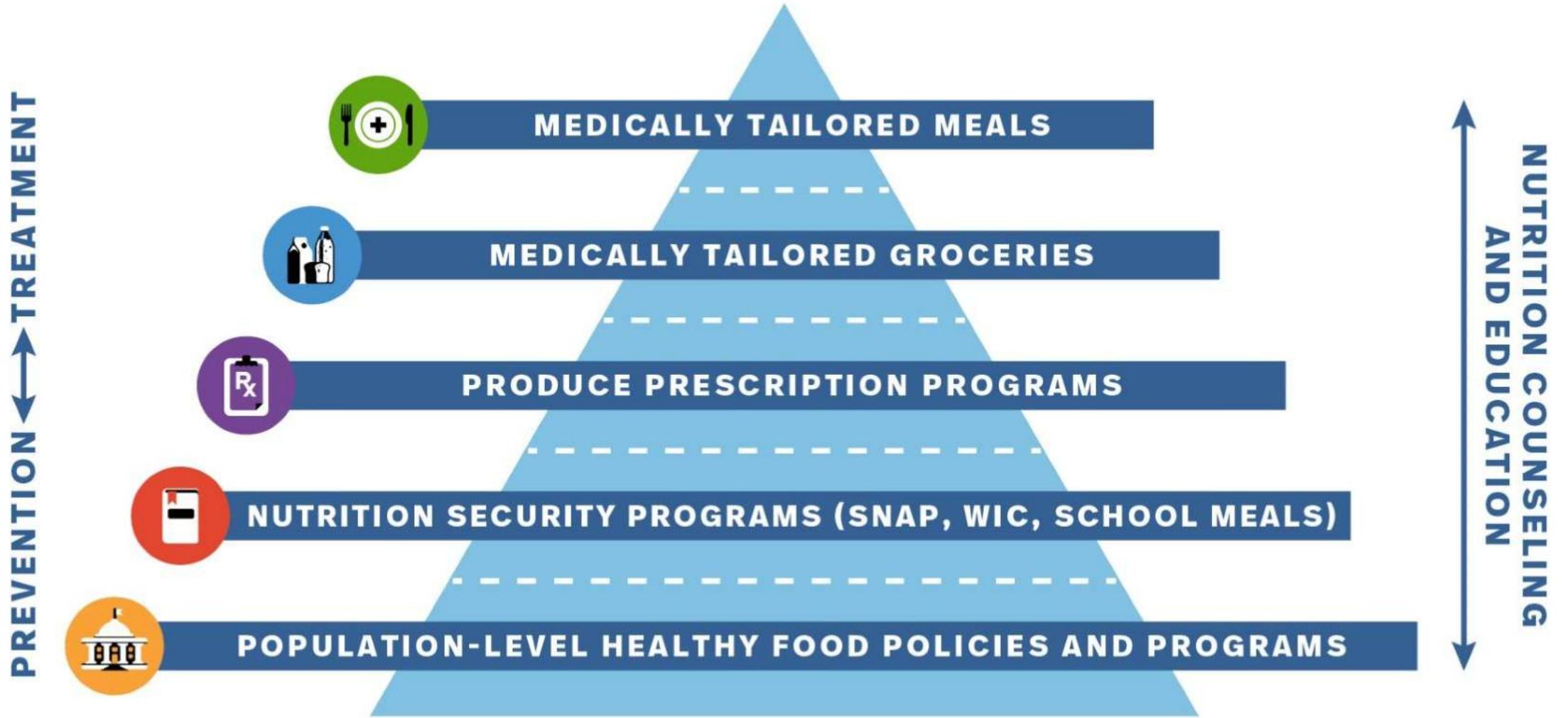


**Pillar 2—Integrate Nutrition and Health:** *Prioritize the role of nutrition and food security in overall health—including disease prevention and management—and ensure that our health care system addresses the nutrition needs of all people.*

*A. Provide greater access to nutrition services to better prevent, manage, and treat diet-related diseases.*

Receiving health care to help prevent, treat, and manage diet-related diseases can optimize Americans' well-being and reduce health care costs. However, access to and coverage for this care varies significantly. To better care for all Americans, the Biden-Harris Administration will:

- **Expand Medicare and Medicaid beneficiaries' access to “food is medicine” interventions.** “Food is medicine” interventions—including medically tailored meals and groceries as well as produce prescriptions (fruit and vegetable prescriptions or vouchers provided by medical professionals for people with diet-related diseases or food insecurity)—can effectively treat or prevent diet-related health conditions and reduce food insecurity.<sup>33</sup> The Biden-Harris Administration supports legislation to create a pilot

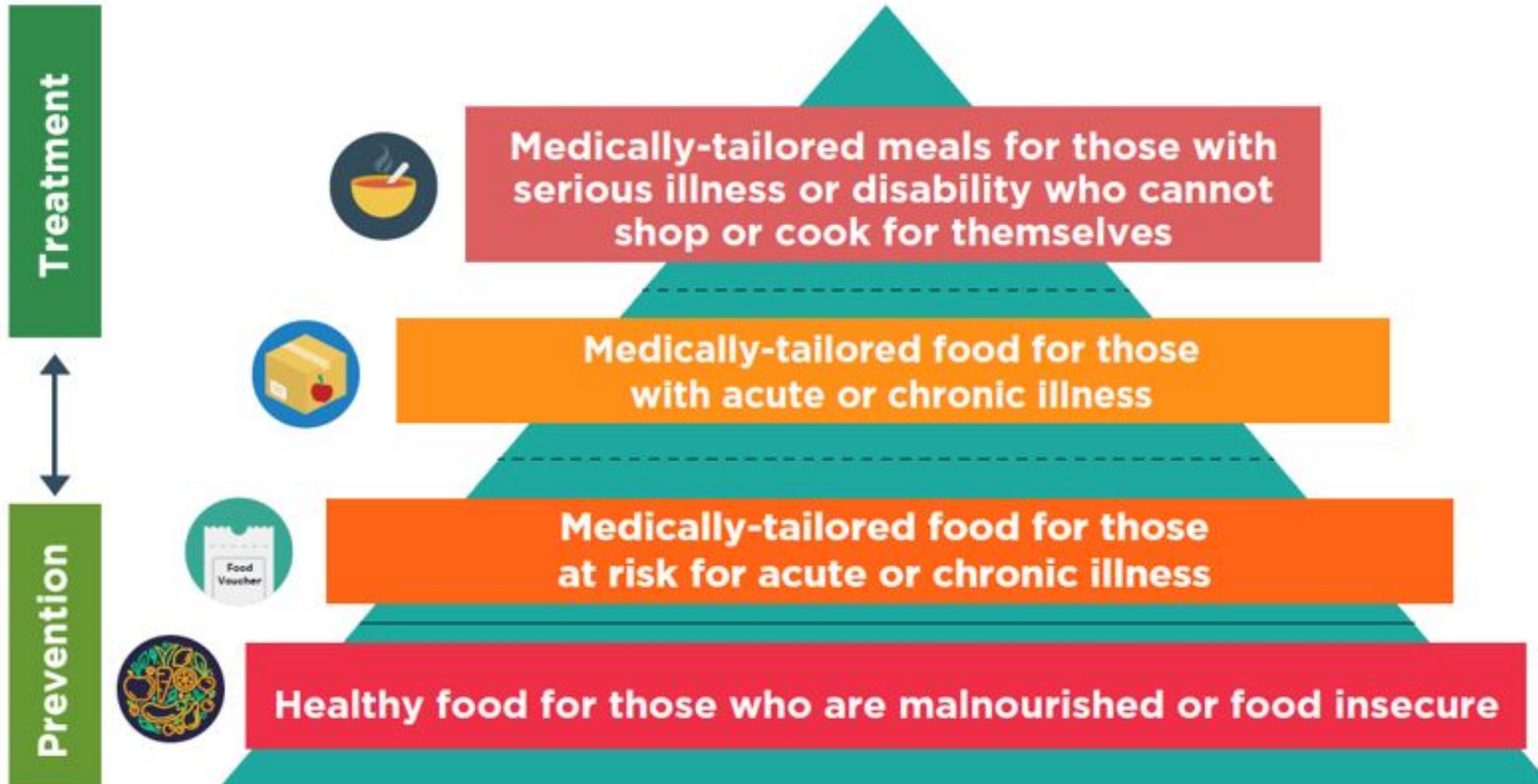


# FOOD IS MEDICINE PYRAMID

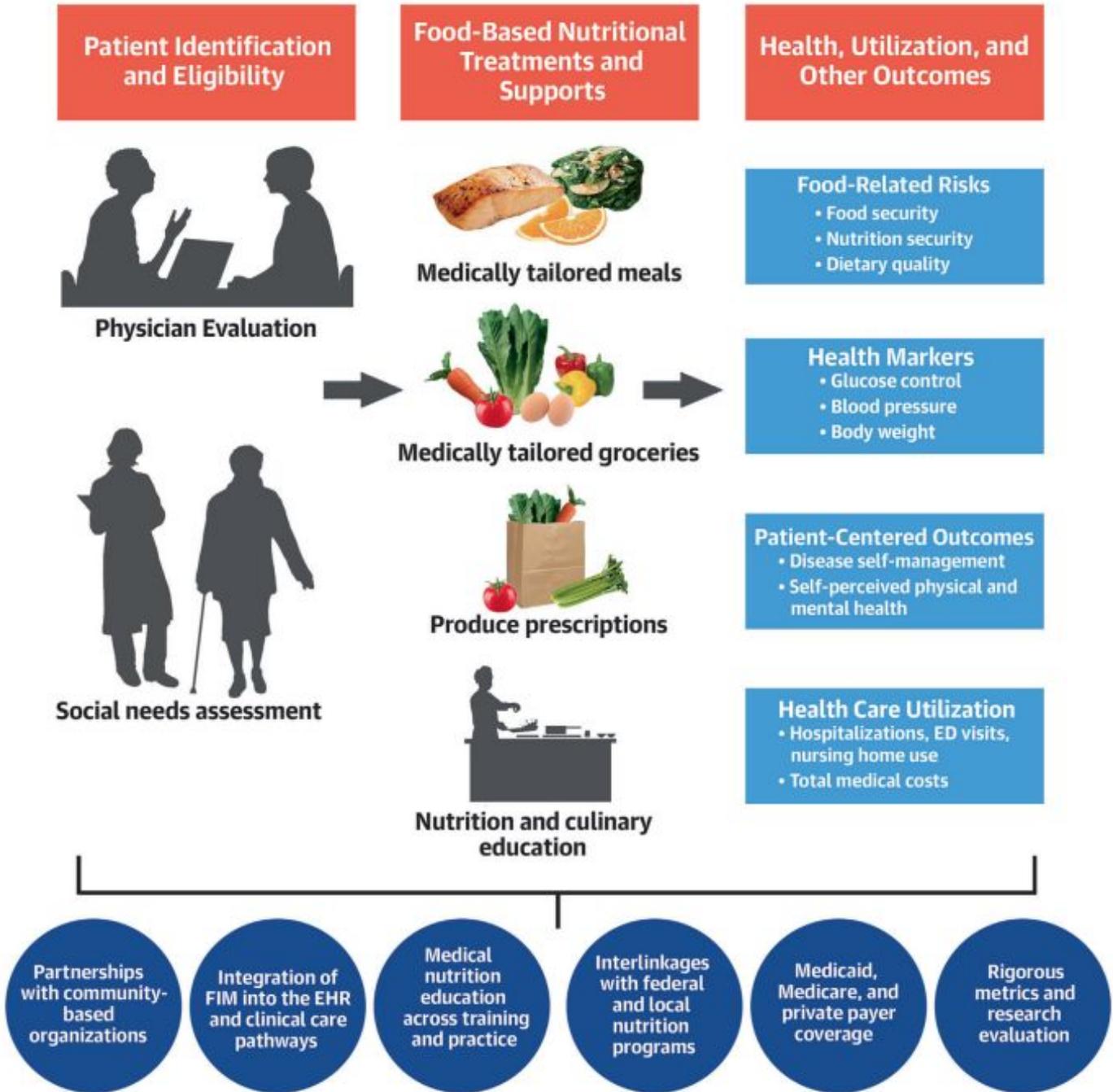


*Food is Medicine interventions consist of healthy foods that are tailored to meet specific needs of individuals living with or at risk for serious health conditions affected by diet.*

# FOOD IS MEDICINE



# A “Food is Medicine” Approach in Health Care



# Medically Tailored Meals

- Prepared meals for those with complex and chronic illnesses who are unable to shop for and prepare food
- Began over 40 years ago as a community/volunteer-led response to the AIDS pandemic
- Cancer, cardiovascular, liver, and renal disease
- Requires referral from a medical provider or health plan
- Developed in consultation with an RDN
  - Highly individualized and personalized

Photo Source:

<https://www.lamoillehealthpartners.org/lamoille-health-partners-rolls-out-new-medically-tailored-meals-pilot/>

# Medically Tailored Meals

- Currently have the most developed evidence base using rigorous study designs
- 16% net reduction in health care costs
- 72% fewer skilled nursing facility admissions
- 70% drop in ED visits
- 1.6 million hospital visits avoided
- Improved food insecurity and diet quality
  - HEI score among those with diabetes improved 31%

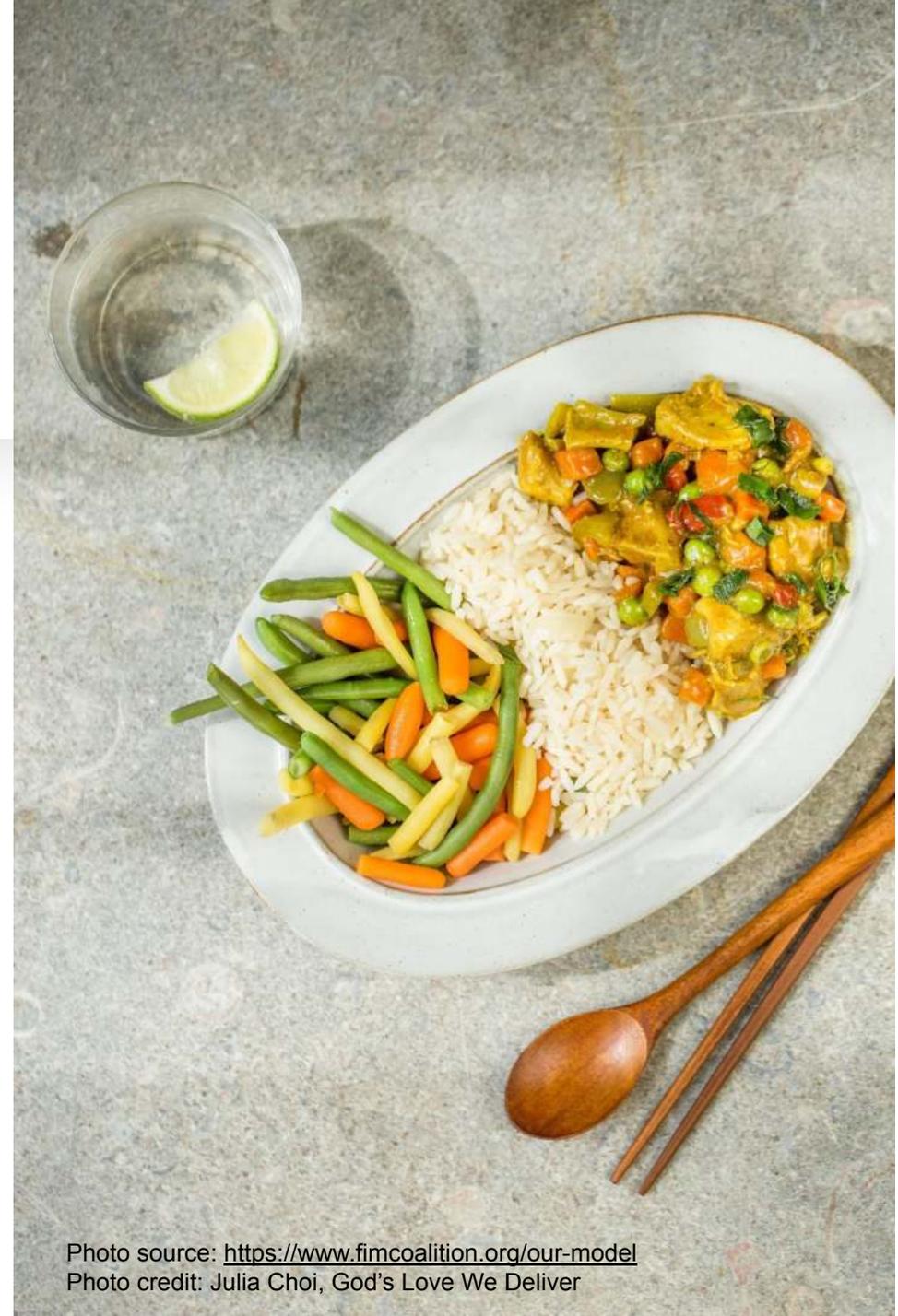


Photo source: <https://www.fimcoalition.org/our-model>  
Photo credit: Julia Choi, God's Love We Deliver

Downer S, Clippinger E, Kummer C. Food is Medicine Research Action Plan. Published Jan. 27, 2022.  
Hager, K., Cudhea, F. P., Wong, J. B., Berkowitz, S. A., Downer, S., Lauren, B. N., & Mozaffarian, D. (2022). Association of National Expansion of Insurance Coverage of Medically Tailored Meals With Estimated Hospitalizations and Health Care Expenditures in the US. *JAMA network open*, 5(10), e2236898. <https://doi.org/10.1001/jamanetworkopen.2022.36898>  
Berkowitz SA, Terranova J, Randall L, Cranston K, Waters DB, Hsu J. Association between receipt of a medically tailored meal program and health care use. *JAMA Intern Med*. 2019;179(6):786-793. doi:10.1001/jamainternmed.2019.0198  
See: <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2797397>  
Berkowitz SA, Delahanty LM, Terranova J, et al. Medically tailored meal delivery for diabetes patients with food insecurity: a randomized cross-over trial. *J Gen Intern Med*. 2019;34:396-404.

# Medically Tailored Groceries

- For those who with diet-sensitive chronic illness who can prepare food but may have financial limitations or difficulty accessing a grocery store
- Customized to the individual
  - Referral is required
  - Typically involves an RDN
- Delivery service or co-located in a health care facility or other community locations (food pantry)



<https://www.foodnetwork.ca/article/canadian-meal-subscription-box-services/>

# Medically Tailored Groceries

- Literature still emerging
- Associated with improvements in Type 2 diabetes and hypertension outcomes



# Produce Prescriptions (PRx)

- For those with diet-sensitive chronic illness who can shop and can prepare food but may have financial limitations
- Low or no-cost fruits and vegetables
  - Co-located at health care facility or other community location
  - Voucher for farmers market
  - Restricted-use debit card for retail outlet



# Produce Prescriptions

- Literature still emerging
- High volume of studies (varied designs)
  - little consistency in target population, recruitment, program delivery, evaluation

Downer S, Clippinger E, Kummer C. Food is Medicine Research Action Plan. Published Jan. 27, 2022.  
Hager K, Du M, Li Z, et al. Impact of produce prescriptions on diet, food security, and cardiometabolic health outcomes: a multisite evaluation of 9 produce prescription programs in the United States. *Circ Cardiovasc Qual Outcomes*. 2023;16:e009520

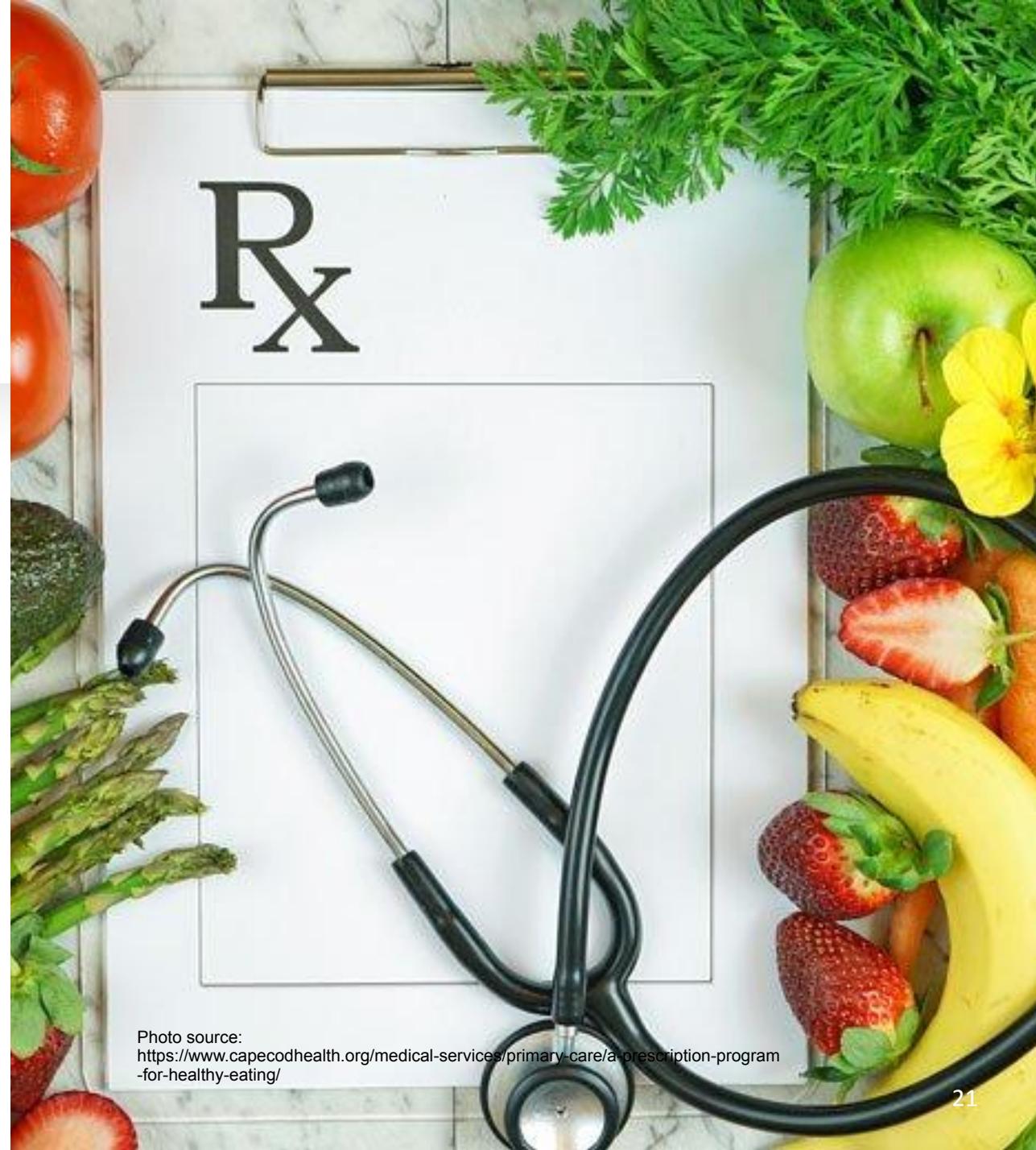


Photo source:  
<https://www.capecodhealth.org/medical-services/primary-care/a-prescription-program-for-healthy-eating/>

# Produce Rx Outcomes

- **Food insecurity decreased by up to 1/3**
- **F&V intake**
  - **95% of Produce Rx programs showed improvements**
  - **0.8 servings/day**
- **HbA1c decreased by 0.3-0.8%**
- **BMI decreased by 0.4-0.6 kg/m<sup>2</sup>**

# True Cost of Food: Food is Medicine Case Study

**Tufts**  
UNIVERSITY

Gerald J. and Dorothy R. Friedman  
School of Nutrition Science and Policy  
**FOOD IS MEDICINE INSTITUTE**





RESEARCH ARTICLE

# Cost-effectiveness of financial incentives for improving diet and health through Medicare and Medicaid: A microsimulation study

Yujin Lee <sup>1</sup> \*, Dariush Mozaffarian <sup>1</sup> , Stephen Sy <sup>2</sup>, Yue Huang <sup>1</sup>, Junxiu Liu <sup>1</sup>, Parke E. Wilde <sup>1</sup>, Shafika Abrahams-Gessel <sup>2</sup>, Thiago de Souza Veiga Jardim <sup>2,3</sup>, Thomas A. Gaziano <sup>2,3</sup> ‡, Renata Micha <sup>1</sup> ‡

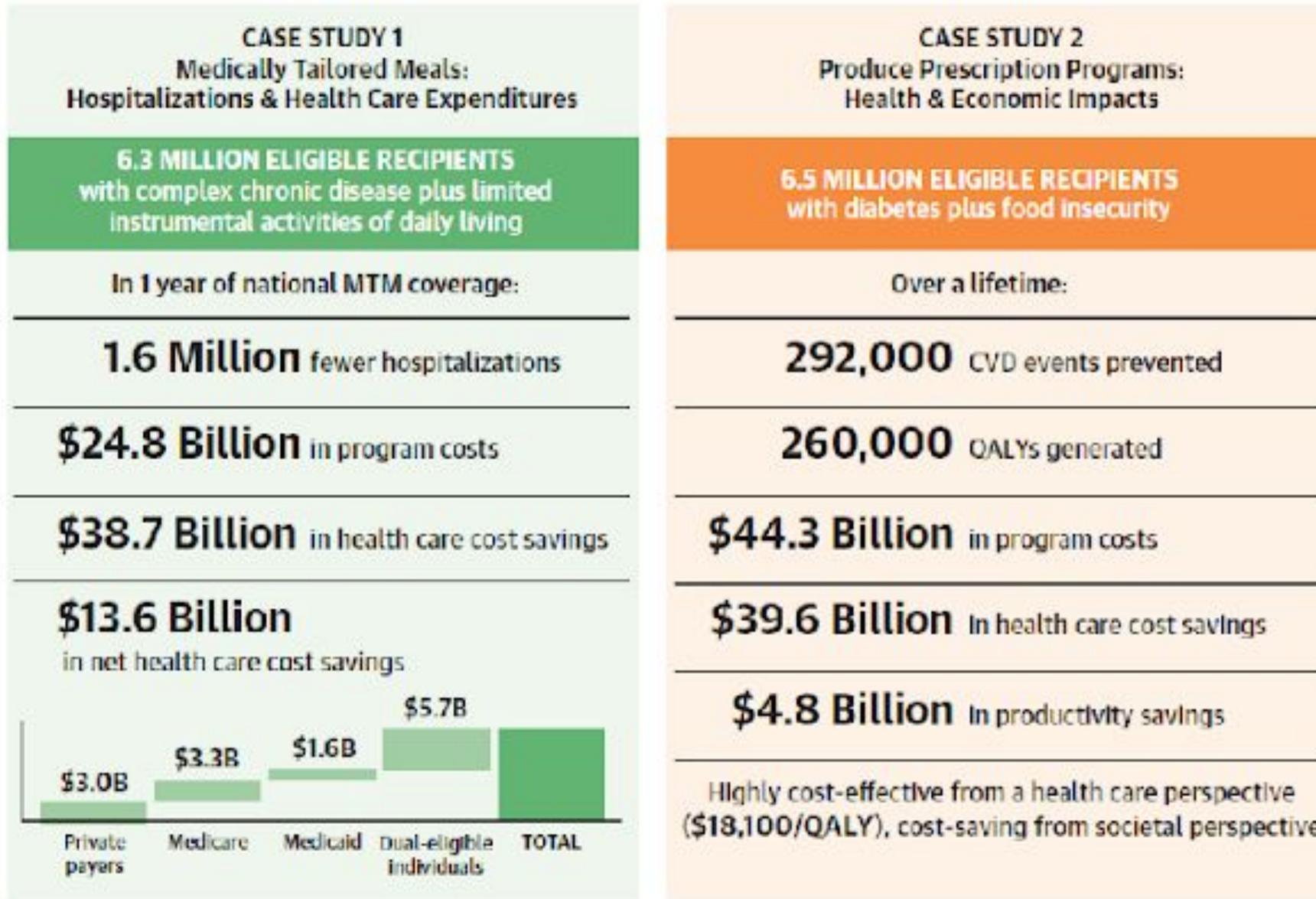
**1** Friedman School of Nutrition Science and Policy, Tufts University, Boston, Massachusetts, United States of America, **2** Brigham and Women's Hospital, Boston, Massachusetts, United States of America, **3** Harvard T. H. Chan School of Public Health, Boston, Massachusetts, United States of America

 These authors contributed equally to this work.

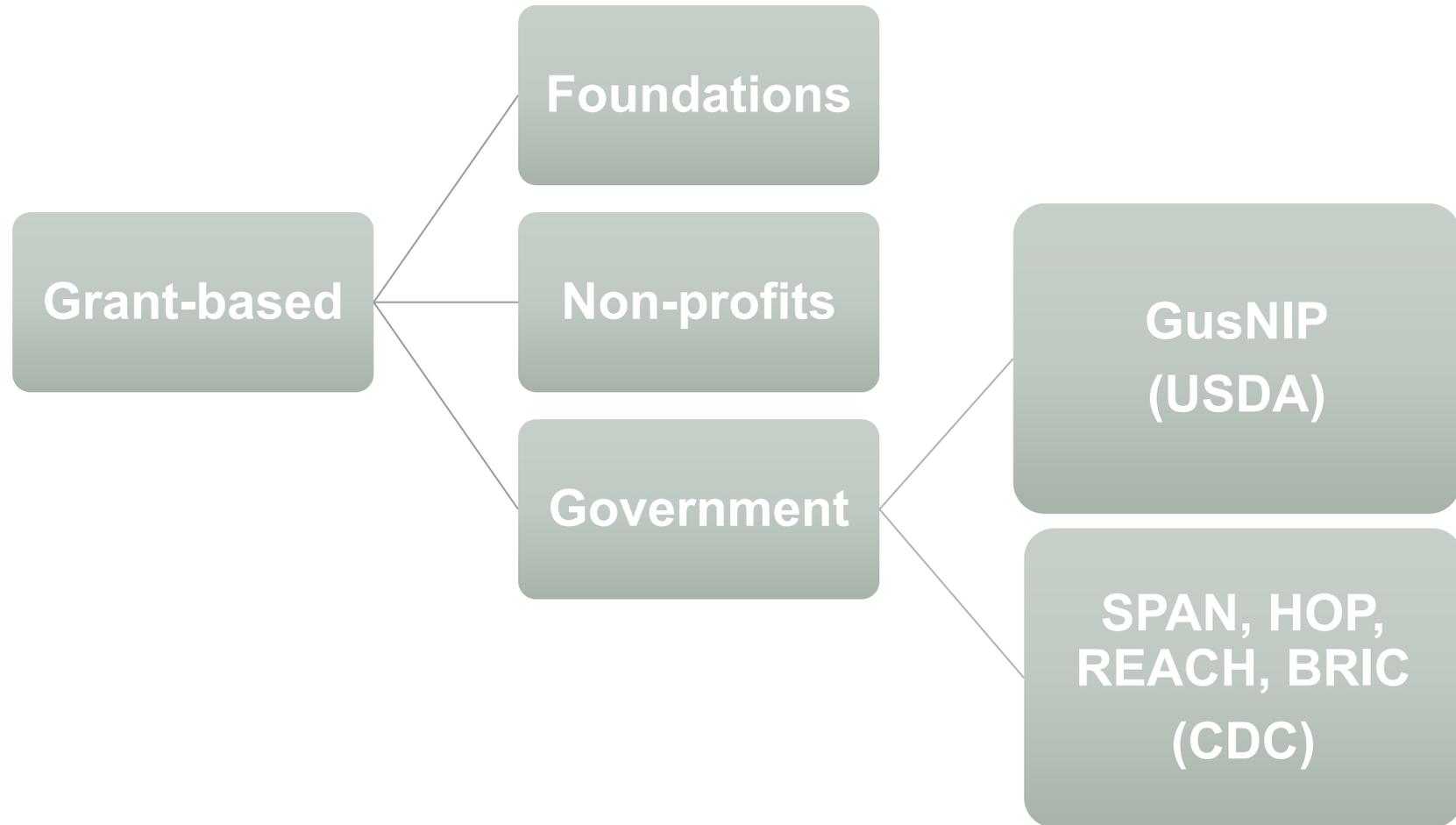
‡ TAG and RM are joint senior authors of this work.

\* [yujin.lee2@tufts.edu](mailto:yujin.lee2@tufts.edu)

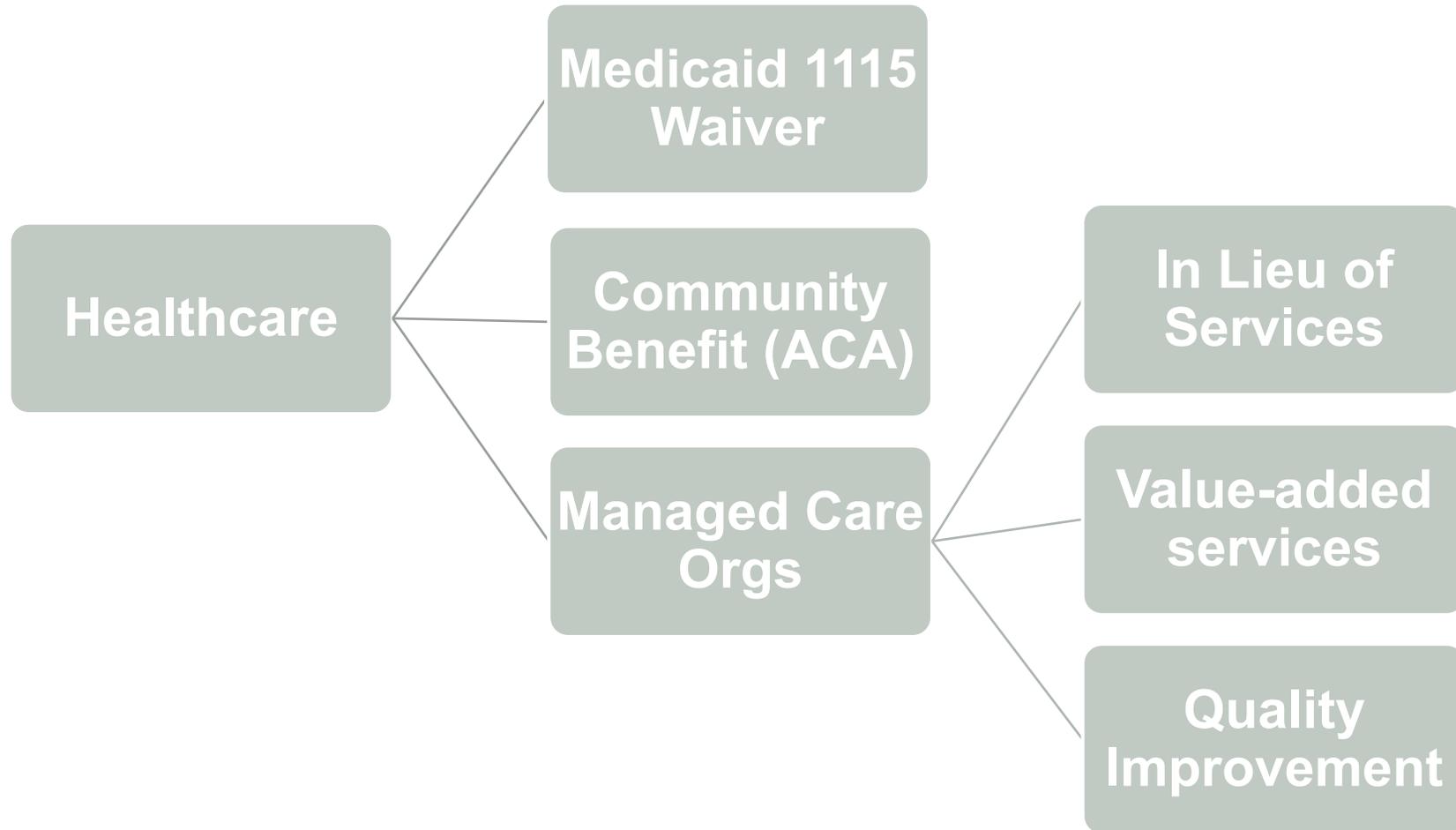
**FIGURE 2** Cost-Effectiveness of Implementing Food & Medicine Programs in the United States



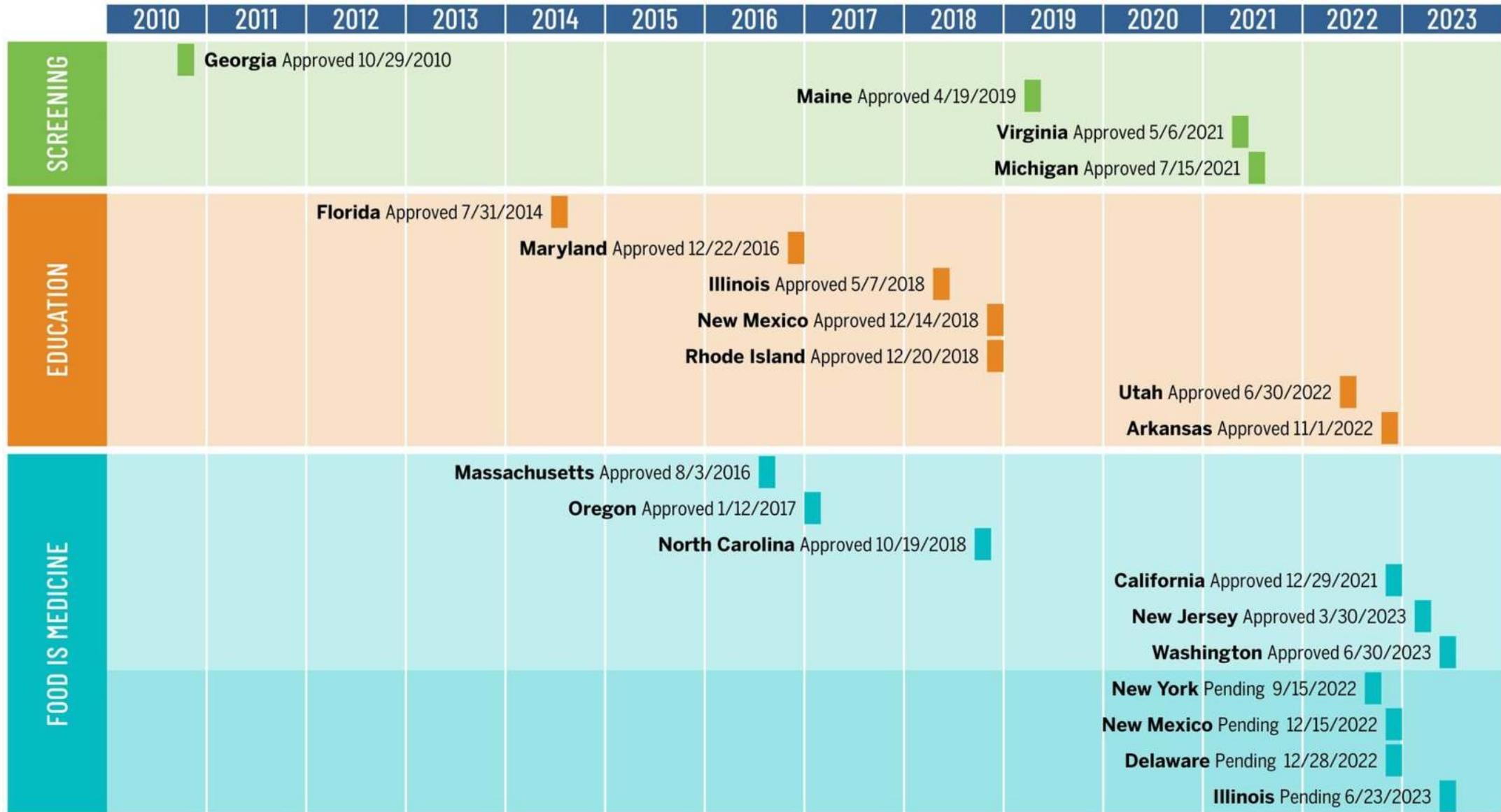
# Funding Pathways



# Funding Pathways



**Figure 1.** Timeline of first approved 1115 demonstration with nutrition components, by state.

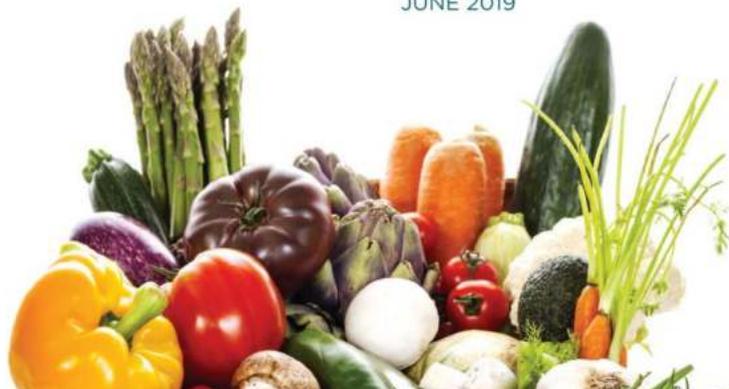


Hanson, Erika & Albert-Rozenberg, Daniel & Garfield, Kathryn & Leib, Emily & Ridberg, Ronit & Hager, Kurt & Mozaffarian, Dariush. (2024). The evolution and scope of Medicaid Section 1115 demonstrations to address nutrition: a US survey. *Health Affairs Scholar*. 2. 10.1093/haschl/qxae013.

# Food is Medicine

## STATE PLAN

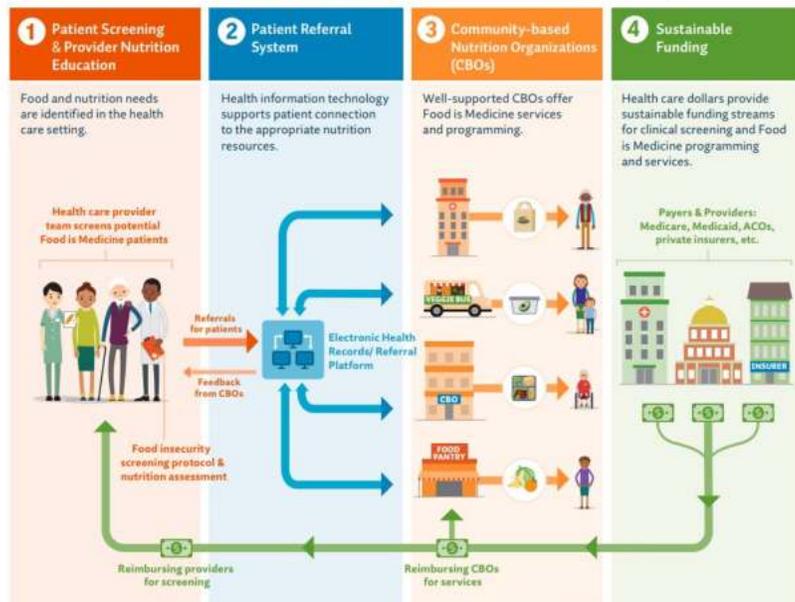
JUNE 2019



## Food is Medicine Program Definitions and Standards



Our vision: a health care system where food & nutrition interventions are fully integrated into care.



## Advocacy Agenda

### INTRODUCTION

Food is Medicine Massachusetts (FIMMA) is a statewide coalition that recognizes and responds to the deep connections between food and health. Health disparities are often rooted in and exacerbated by differences in access to food and appropriate nutrition interventions, with complex impacts on mental health, physical health, and quality of life. Food is Medicine (FIM) interventions (described in more detail below) seek to address these issues by connecting individuals to the foods they need to heal and thrive. FIMMA's mission is therefore to build a health care system that reliably identifies people who have health-related nutrition needs, connects them to appropriate FIM interventions, and supports those interventions via sustainable funding.

This Advocacy Agenda establishes the framework that FIMMA will use to determine its advocacy priorities and the actions that it will take to

- **Tier 3:** Policies that Improve Healthy Food Access, Reduce Food Insecurity, Expand Access to Social Services, and Strengthen Local Food Systems.

Throughout this advocacy agenda, FIMMA categorizes programs which meet the following definitions as **Food is Medicine interventions**:

**Medically Tailored Meals:** Medically tailored meals are meals developed to address the dietary needs of an individual's medical condition by a Registered Dietitian Nutritionist. Individuals are referred by a health care provider or plan.

**Medically Tailored Food Packages:** Medically tailored food packages include a selection of minimally prepared grocery items selected by a Registered Dietitian Nutritionist or other qualified nutrition professional as part of a treatment plan for an individual with a defined

instacarthealth

Hungry Harvest

modifyhealth.

bitewell

Everyone's Harvest

Heali

VITABOWL

AF

About Fresh

attanehealth  
PERSONALIZED FOOD & NUTRITION CARE

Fresh Connect



brightseed

FarmboxRx

Uber Health



Nourished Rx

# The Rural Perspective

A photograph of a small town street. The street is lined with various buildings, including a white building on the left and a white building on the right. There are several cars parked along the street, including a black pickup truck in the foreground. In the background, there is a large, forested hill under a clear blue sky. The overall scene depicts a typical rural town setting.

- Higher rates of:
  - Poverty
  - Food insecurity
  - Chronic disease
- Challenges:
  - Accessing and affording nutritious food
  - Infrastructure
    - Transportation
    - Internet

WE WELCOME YOU TO THE FORMAL LAUNCH OF

# THE FOOD *as* HEALTH ALLIANCE

## DIRECTOR

Alison Gustafson, PhD, MPH, RDN  
Professor Dietetics and Human Nutrition  
College of Agriculture, Food, and Environment  
College of Nursing

## PROGRAM COORDINATOR

Lauren Batey, MS, RDN  
Dietetics and Human Nutrition  
College of Agriculture, Food, and Environment

THE FOUNDATION OF OUR ALLIANCE

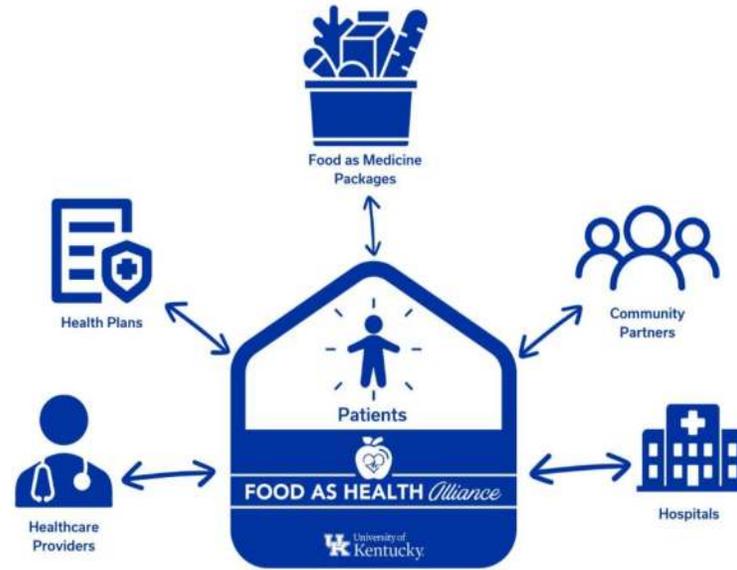
## UNDERSTANDING *the* FOUR PILLARS

POLICY

TRAINING

RESEARCH

OUTREACH



### Food as Medicine Pilot Programs

Across the state of Kentucky, the Food as Health Alliance is launching 4 new food as medicine pilot programs. These programs will test a variety of food delivery packages to food insecure populations who are experiencing diet sensitive chronic disease. This research will bring together partners from the healthcare, industry, agriculture, and non-profit sectors to research the ways in which addressing food insecurity can improve health outcomes in the Commonwealth. Eligible patients will work with their healthcare provider to be referred into one of the 4 programs.

# WV Food is Medicine Landscape

- **Variety of Programs**
  - **Produce prescriptions**
  - **Medically-indicated food boxes**
  - **Medically-tailored meals?**
- **Many are supporting local growers**
- **Variety of Funding Sources – foundations, government, health care**
- **Created as grassroots efforts to address immediate needs in communities**
- **Not typically research-based or grounded in implementation or evaluation framework**

# FARMacy WV

## Dr. Carol Greco - Table #1



- Since 2016
- 16 counties
- 15-week produce prescription program
- Locally-sourced produce for those with diet-sensitive chronic illness who are at risk for food insecurity
- Nutrition education provided by the Family Nutrition Program
- Evaluates diet quality, food security and health outcomes (HbA1c, weight, blood pressure, lipids, etc.)

# Food for Health

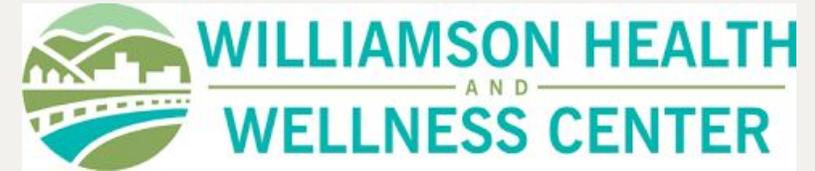
Cara Holmes, Laura Phillips, Merinda Stricklen - Table #2

- Food prescription
- 7 counties
- Provides fresh food boxes twice/month
- Shelf-stable and protein boxes once/ month



# Medically Indicated Food Boxes

Kristin DeBoard - Table #3



- For those with diabetes and/or end-stage renal disease
- 6 counties
- Shelf-stable and fresh foods, frozen proteins
- Monthly distribution
- Measures HbA1c, weight, other measures of health

# WVU Medicine – Produce Rx

Cathy Shaw, Amanda Clarkson, Judy Siebert, Rachel Wattick - Table #4



- For Medical Weight Management patients and families
- Monongalia County
- Locally-sourced produce
- Nutrition education

# Healthy Neighborhood and Farmacy

Katie Lanham - Table # 5 & 6



- For people with diabetes, elevated A1c and BMI who are food insecure
- Restricted use debit card
- 15 weeks of fresh produce
- Pop-up produce markets
- 6 counties
- Family Nutrition Program has provided some education components

# 5210 Rx Program with Fresh Connect Debit Card Dr. Jamie Jeffrey - Table # 7



- Intensive health and behavioral lifestyle treatment, nutritious food referral and community-level healthy eating program
- fresh produce prescriptions with a restricted-use debit card
- prescription for increased physical activity, and other lifestyle recommendations
- Kanawha and Fayette Counties

# Farm to You

## Amanda Tomlin- Table # 8



- fresh produce
- medically tailored recipes
- nutrition education
- mobile services
- Berkeley and Jefferson Counties

# Nutrition Education and Culinary Instruction

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- Synergistic effect
- In-person or remote
  - Recipes/demos
  - Hands-on/kinesthetic learning
- Sources:
  - WVU FNP – EFNEP and SNAP-Ed
  - RDNs
  - Growers
  - Culinary arts programs



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# Opportunities for WV

Develop grant proposals that will facilitate the development of a Food is Medicine infrastructure

## Food is Medicine Coalition

- Multi-sector partnerships
- Coordinate planning and implementation
- Shared expertise/resources
- Shared measurement/evaluation

## Food is Medicine Demonstration Project

- Rigorous design (implementation and evaluation)
- Some element of randomization
- Test a variety of models

## Food is Medicine Hub

- Centralized referral system
- Triage of patient needs
- Feedback loop

Food as preventative medicine to encourage health and well-being



Food as medicine to improve nutrition security



**Food as Medicine** is a philosophy where food and nutrition aids individuals through interventions that support health and wellness.



Food as medicine in disease management and treatment



Food as medicine to promote food safety

**Food as Medicine is a philosophy where food and nutrition aids individuals through interventions that support health and wellness. Focus areas include:**

- Food as preventative medicine to encourage health and well-being
- Food as medicine in disease management and treatment
- Food as medicine to improve nutrition security
- Food as medicine to promote food safety.

**Food as Medicine** is a reaffirmation that food and nutrition play a role in sustaining health, preventing disease, and as a therapy for those with conditions or in situations responsive to changes in their diet.

# Food as Medicine

## Retail Nutrition Landscape



# Medical Nutrition Therapy Act

(H.R.6407/ S.3297)

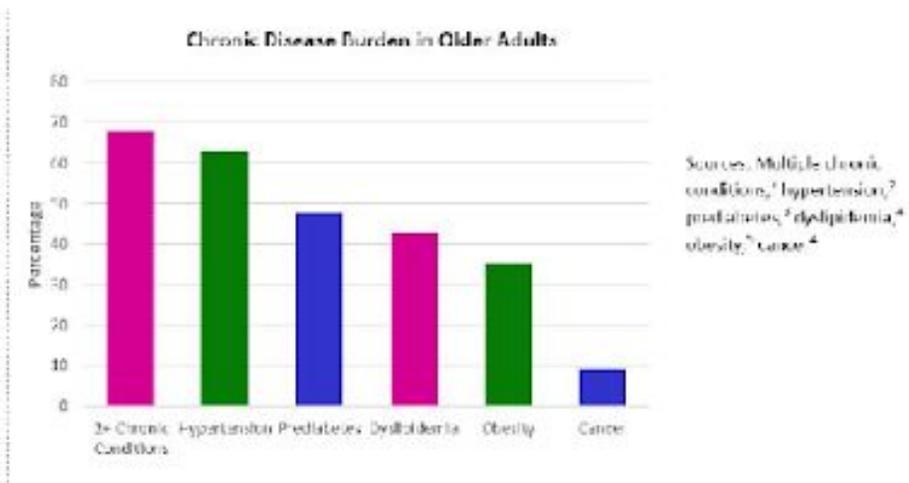
## Overview

The Academy of Nutrition and Dietetics championed the introduction of the Medical Nutrition Therapy Act and is urging members of Congress to cosponsor and support passage of the bill. This bill would allow Medicare beneficiaries to access the care they need by providing coverage for Medical Nutrition Therapy for a variety of chronic conditions under Medicare Part B.

The majority of Academy members work in health care and community settings that provide MNT services, and expanding coverage for MNT has been a long-held Academy policy priority. The Academy drafted legislative language with the aid of legal experts and subsequently partnered with members of Congress to introduce the MNT Act.

## The Burden of Chronic Disease

Almost all Medicare beneficiaries have at least one chronic condition and over two-thirds live with multiple chronic conditions.<sup>1</sup> The chart below illustrates select prevalence rates from the Centers for Disease Control and Prevention (CDC) and the Centers for Medicare & Medicaid Services (CMS) for adults over 65.



This bill amends the Social Security Act to provide Medicare Part B coverage of outpatient MNT for **prediabetes, obesity, high blood pressure, high cholesterol, malnutrition, eating disorders, cancer, gastrointestinal disease including celiac disease, cardiovascular disease, HIV/AIDS** and any other disease or condition causing unintentional weight loss, with authority granted to the Secretary of Health to include other diseases based on medical necessity. **It also authorizes nurse practitioners, physician assistants, clinical nurse specialists and psychologists to refer their patients for MNT.**

<https://www.eatrightpro.org/-/media/files/eatrightpro/advocacy/mntactleavebehind.pdf?rev=e845e4d048934a5eba7dd2bfc1343b48&hash=DA69303A8BB91B0E284E5E9964D82BBD>



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