



Health & Wellness Webinar | March 19th, 2pm EST

PRODUCE PRESCRIPTIONS: Blazing The Trail For Better Health

With **Kathy Taylor, MS, RD, LD & Kurt Hager, PhD**

BROUGHT TO YOU BY



WELCOME!



Katie Calligaro

Director, Marketing & Communications
Foundation for Fresh Produce

ABOUT HAVE A PLANT®

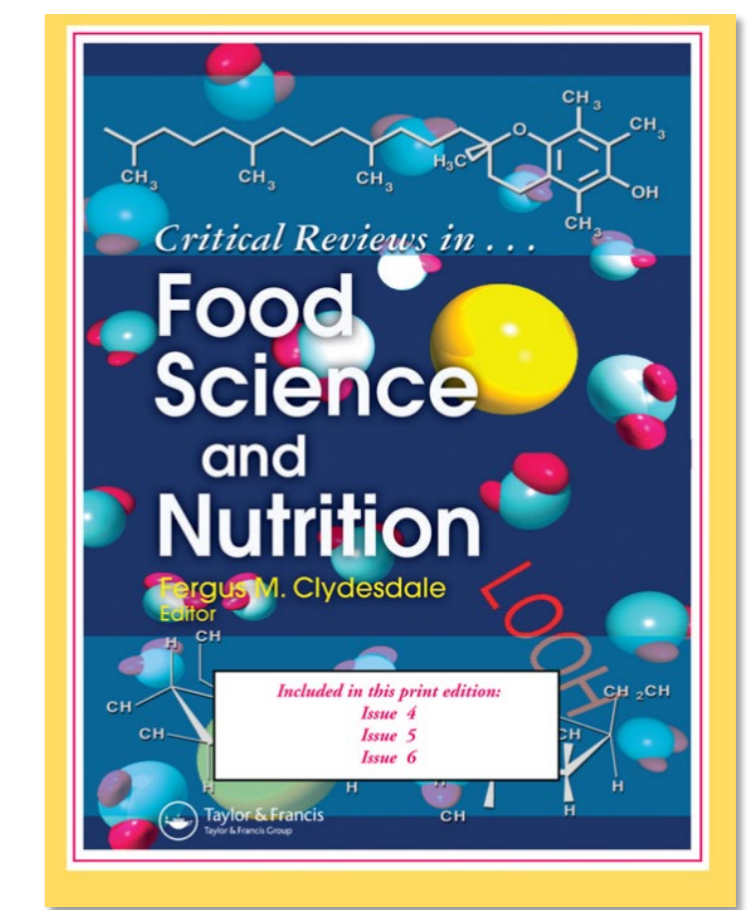
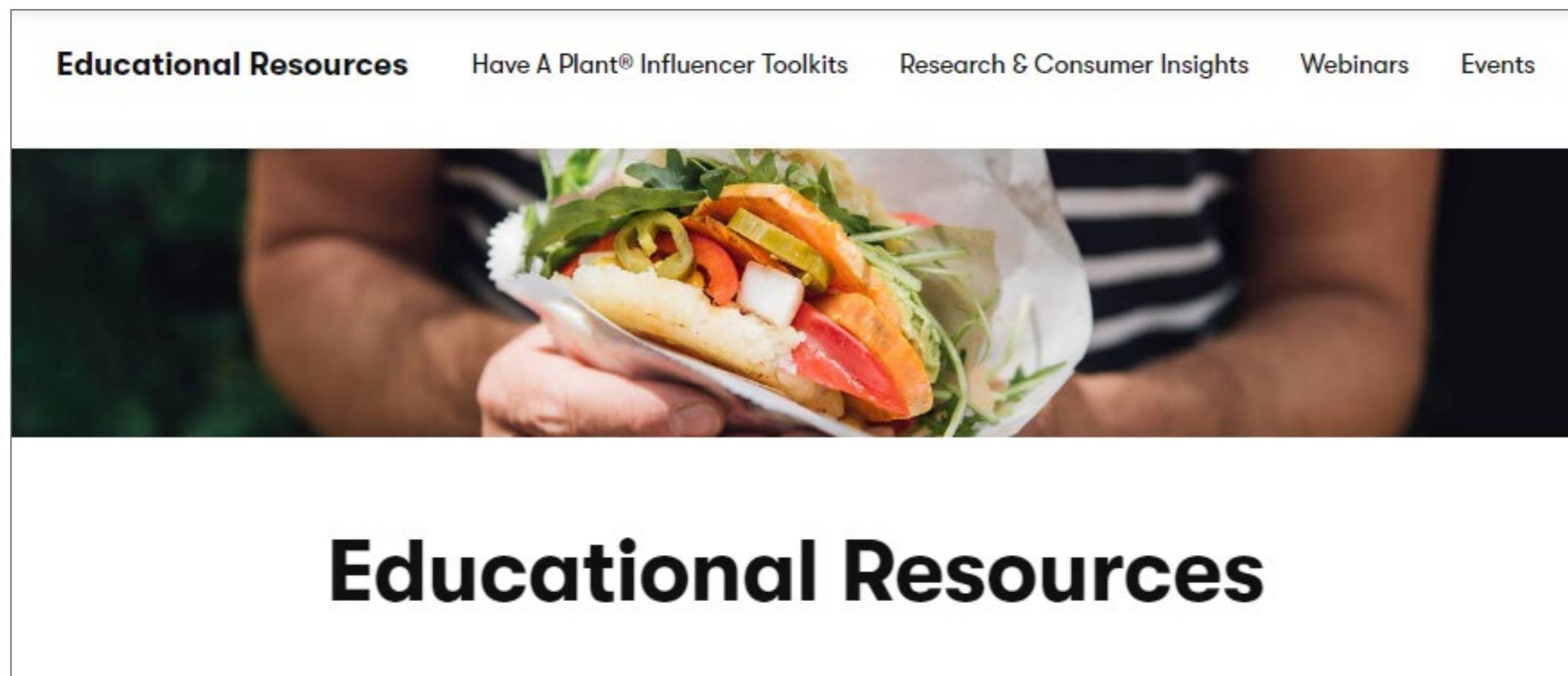
The award-winning Have A Plant® campaign is committed to helping consumers live happier, healthier lives by boosting appeal for fruits and vegetables.

Have A Plant® programs and our website fruitsandveggies.org are a valuable resource for health and wellness professionals.



EDUCATIONAL RESOURCES

Have A Plant[®] programs deliver innovative research as well as unique consumer insights and communication tools. All to help you inspire lasting behavior change by tapping into the emotional connection consumers have to fruits and vegetables.



fruitsandveggies.org/educational-resources

HOUSEKEEPING

The CPE activity application for this webinar is pending Commission on Dietetic Registration (CDR) review and approval for 1.0 CPEUs.

You will receive a link to the certificate of attendance, the webinar recording and PDF of the presentation once approval has been granted.

Type your questions and/or comments into the Q&A section located at the bottom of your screen at any time during the webinar.

TODAY'S SPEAKERS



PRESENTER:

Kurt Hager, PhD

*Instructor, Population &
Quantitative Health Sciences
UMass Chan Medical School*



PRESENTER:

Kathy Taylor, MS, RD, LD

*Director of Medical
Nutrition Therapy
Grady Memorial Hospital*



MODERATOR:

Stephanie Hodges, MS, MPH, RDN

*Founder & Owner
The Nourished Principles*



**PRODUCE PRESCRIPTIONS:
BLAZING THE TRAIL FOR BETTER
HEALTH**

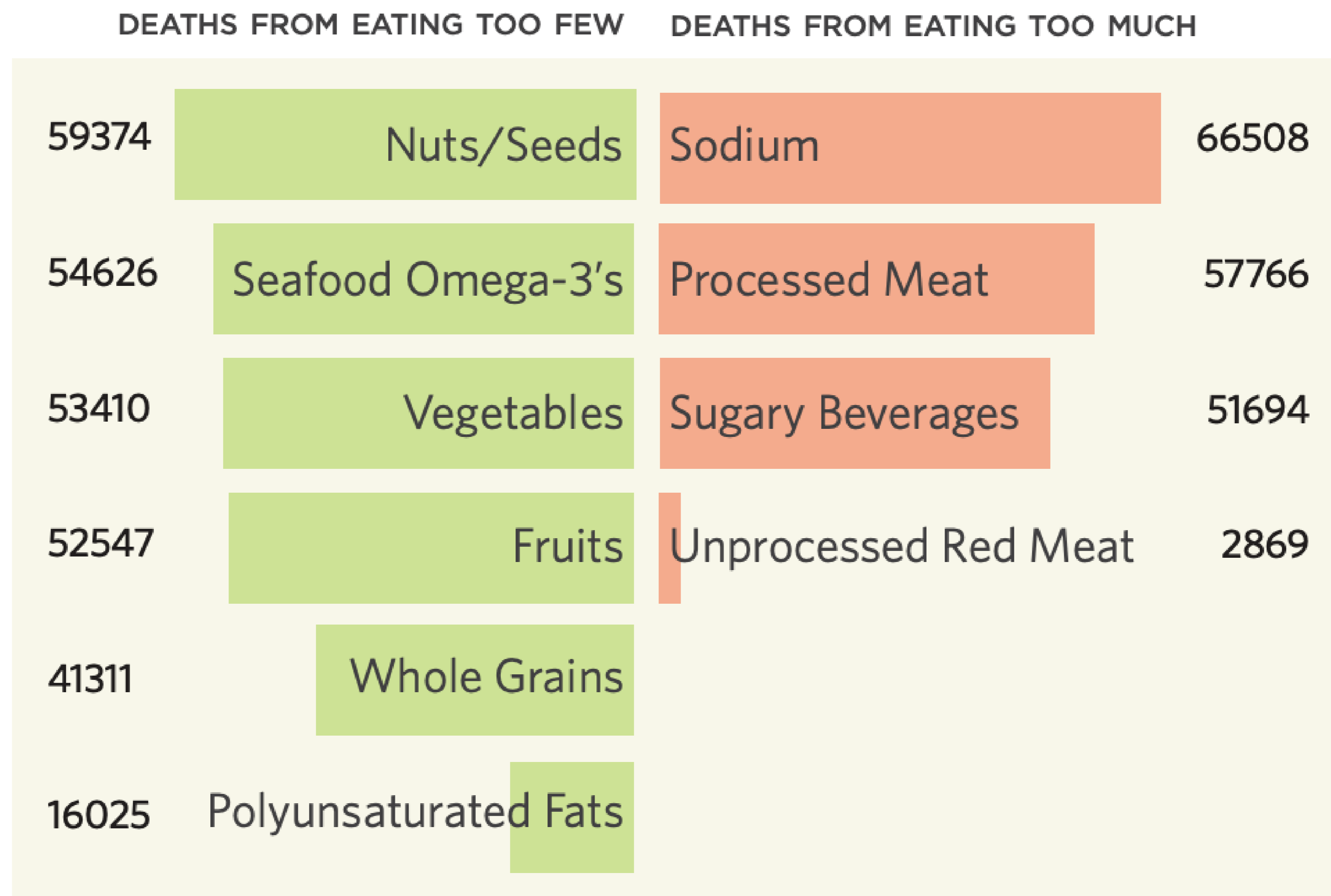


have a
plant[®]

PRODUCE PRESCRIPTION IMPACTS ON HEALTH OUTCOMES



Diet & Chronic Disease In The US



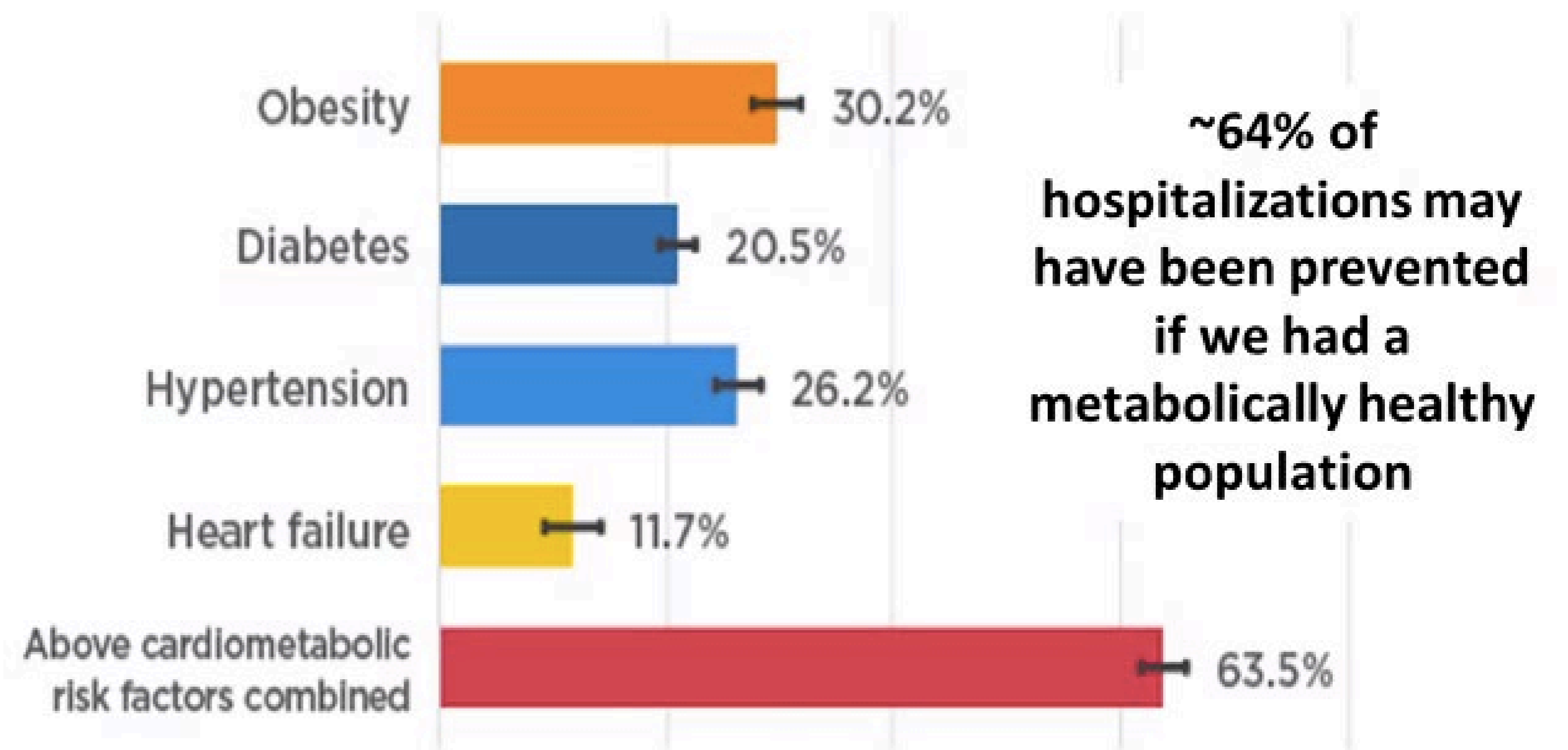
Renata Micha, "Association Between Dietary Factors and Mortality from Heart Disease, Stroke, and Type 2 Diabetes in the United States," JAMA, 2017.
Dariush Mozaffarian, "Dietary and Policy Priorities for Cardiovascular Disease, Diabetes, and Obesity: A Comprehensive Review". Circulation, 2016.

COVID-19 & Diet-Related Illness

Fast pandemic of virus over slow pandemic of chronic disease

Vascular inflammatory illnesses exacerbate one another

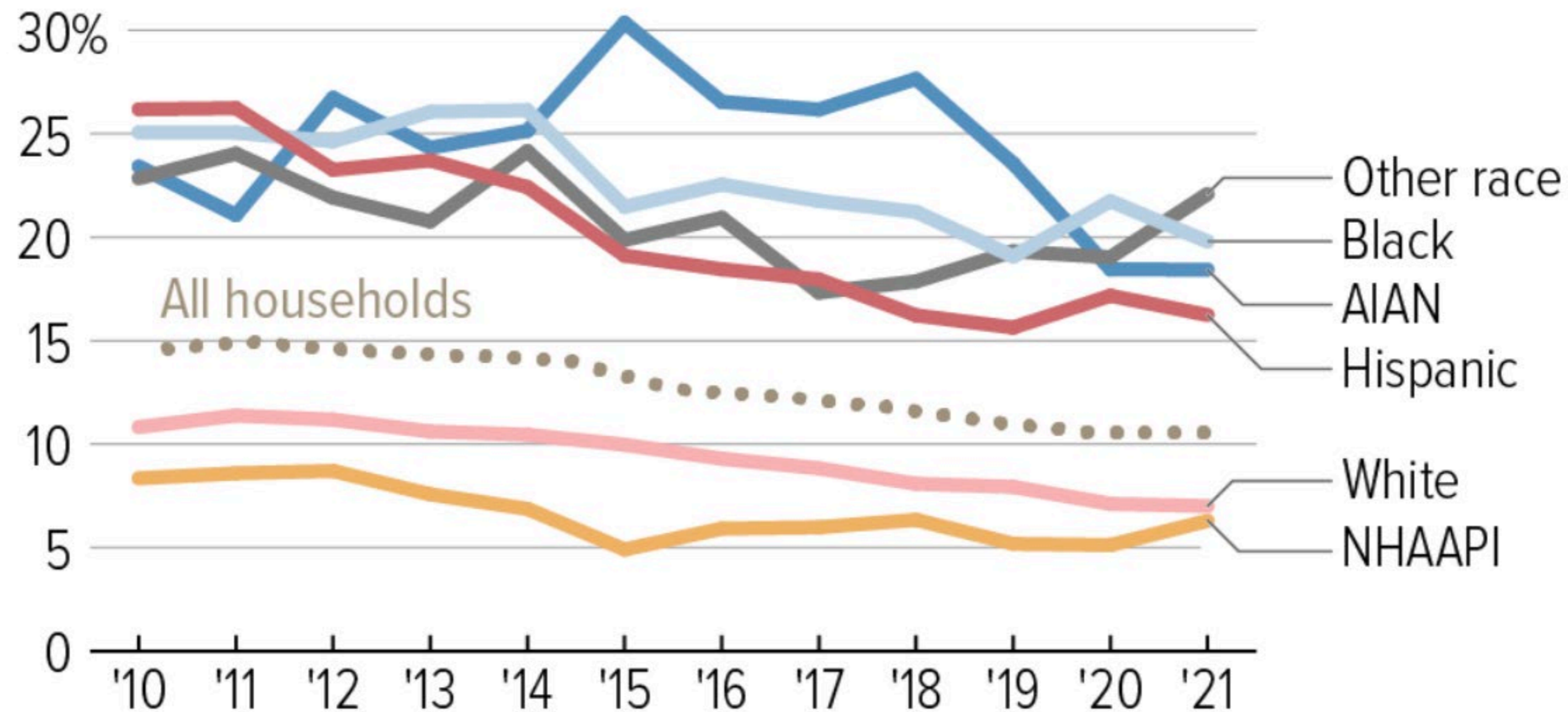
U.S. COVID-19 hospitalizations estimated to be due to cardiometabolic risk factors



Values do not sum due to proportional risks.

Food Insecurity by Race and Ethnicity Reveals Stark Disparities

Households that lacked access to adequate food at some point in the year



Note: People who are Hispanic may be of any race. Other race = people who are more than one race. AIAN = people who are American Indian or Alaskan Native. NHAAPI = people who are Asian, Hawaiian, or Pacific Islander. People who are AIAN, Black, NHAAPI, or white are that race alone. Race and ethnicity for the household are based on that of the household reference person (in whose name the housing unit is owned or rented).

Source: U.S. Department of Agriculture, Current Population Survey Food Security Supplement 2010-2021

Food Insecurity & Coping Strategies

Forgoing medical care or medication use

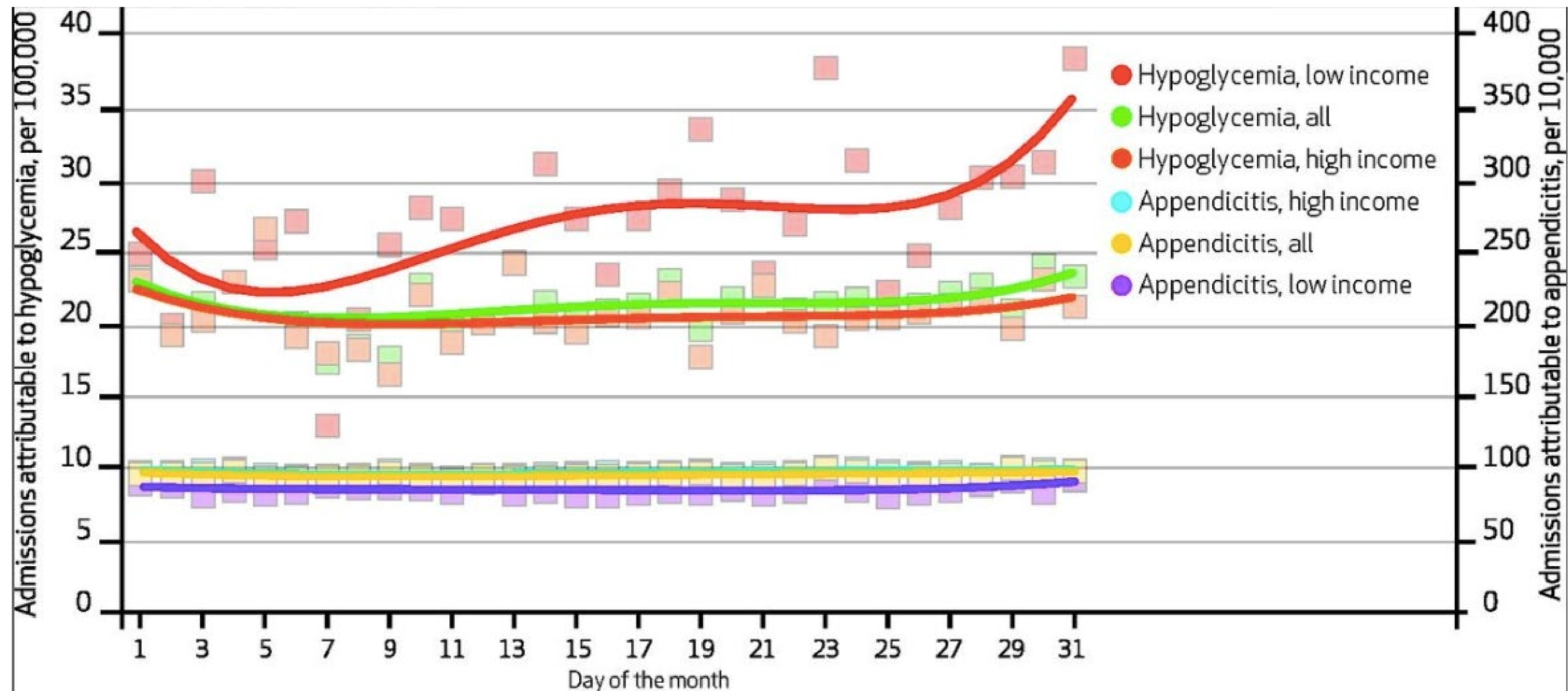
Choosing between food and other basic needs

Opting to consume low-cost, energy-dense foods

Forgoing food needed for special medical diets

1. Victoria L. Mayer et al., Food insecurity, coping strategies and glucose control in low-income patients with diabetes. PUBLIC HEALTH NUTRITION, (2016).
2. Margot B. Kushel et al., Housing instability and food insecurity as barriers to health care among low-income Americans, JOURNAL OF GENERAL INTERNAL MEDICINE, (2006).
3. Dena Herman et al., Food insecurity and cost-related medication underuse among nonelderly adults in a nationally representative sample. AMERICAN JOURNAL OF PUBLIC HEALTH, (2015).
4. Patience Afulani et al., Food insecurity and health outcomes among older adults: The role of cost-related medication underuse. JOURNAL OF NUTRITION IN GERONTOLOGY AND GERIATRICS, (2015).
5. Chadwick Knight et al., Household food insecurity and medication “scrimping” among US adults with diabetes. PREVENTATIVE MEDICINE, (2016).
6. Nancy S. Weinfield et al., Hunger in America 2014. Prepared for Feeding America, (2014).
7. Molly Knowles et al., “Do you wanna breathe or eat?": Parent perspectives on child health consequences of food insecurity, trade-offs, and toxic stress, MATERNAL AND CHILD HEALTH JOURNAL, (2016).
8. Mary E Morales et al., The Relationship between Food Insecurity, Dietary Patterns, and Obesity, CURR NUTR REP, (2016).
9. Adam Drewnowski. Obesity, diets, and social inequalities, Nutrition Reviews, 67(Supplement 1), (2009).
10. Kathryn Edin et al., SNAP Food Security In-Depth Interview Study, USDA, FNS, ORA, (2013).
11. Hilary K. Seligman et al., Food insecurity and glycemic control among low-income patients with type 2 diabetes. DIABETES CARE, (2012).

Example In Managing Chronic Disease



Hospitalizations for low-income, diabetic patients increase at the end of the month when nutrition benefits, food and finances are low

Food Insecurity & Healthcare Costs

HealthAffairs

[HEALTH AFFAIRS](#) > [VOL. 42, NO. 1](#): MEDICAID EXPANSION,
BEHAVIORAL HEALTH & MORE

Food Insecurity Was
Associated With Greater
Family Health Care
Expenditures In The US,
2016–17

FI households spend roughly
45% on medical care in a year
(\$6,100) than people in food-
secure households (\$4,200).

[Deepak Palakshappa](#), [Arvin Garg](#), [Alon Peltz](#), [Charlene A. Wong](#),
[Rushina Cholera](#), and [Seth A. Berkowitz](#)

EVIDENCE FOR PRODUCE PRESCRIPTIONS & CARDIOMETABOLIC HEALTH



Program Design

- Adult programs: median \$45 per month / household, (IQR: \$31 - \$60)
- Children programs: median \$115 per month / household, (IQR: \$85 - \$133)
- Electronic cards or vouchers at retail grocery and farmers markets
- 4-10 months program period

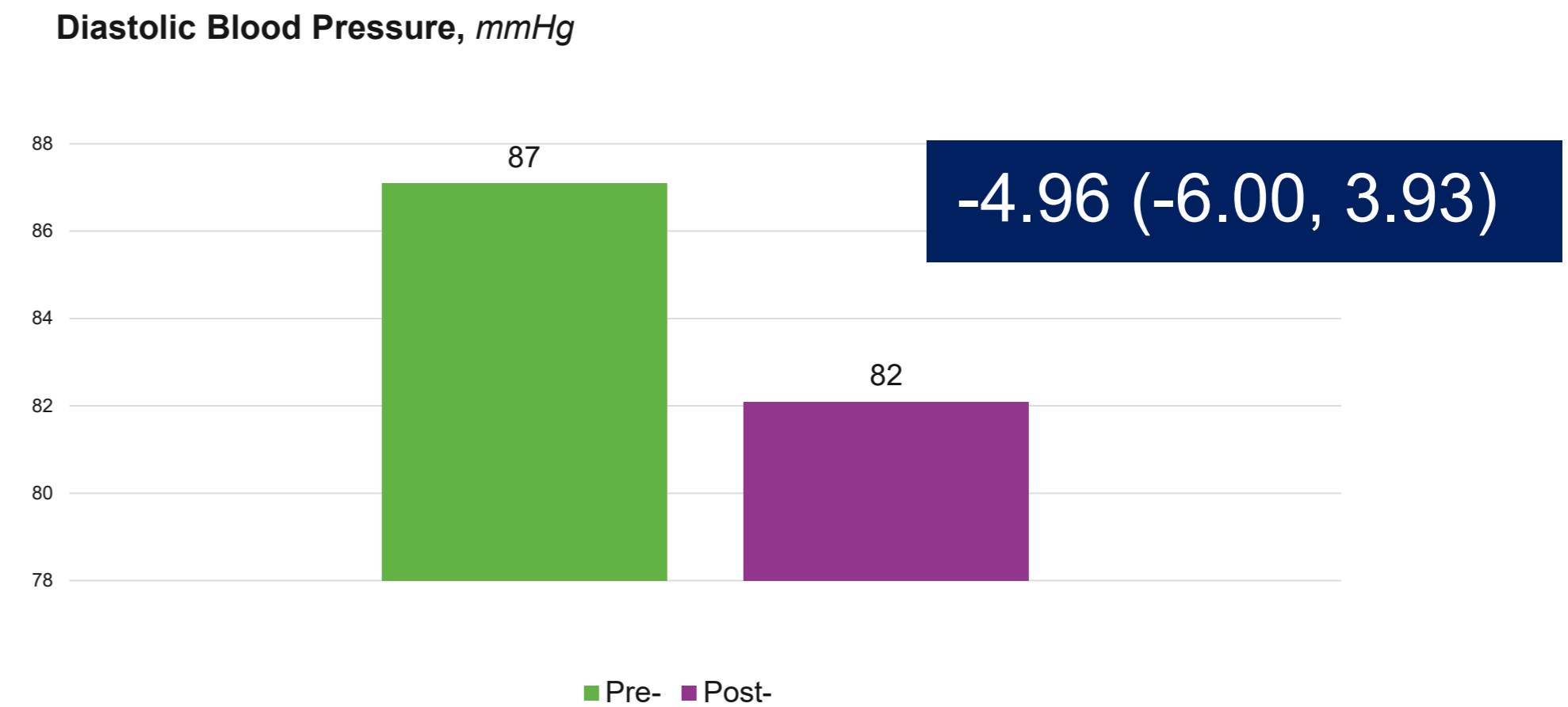
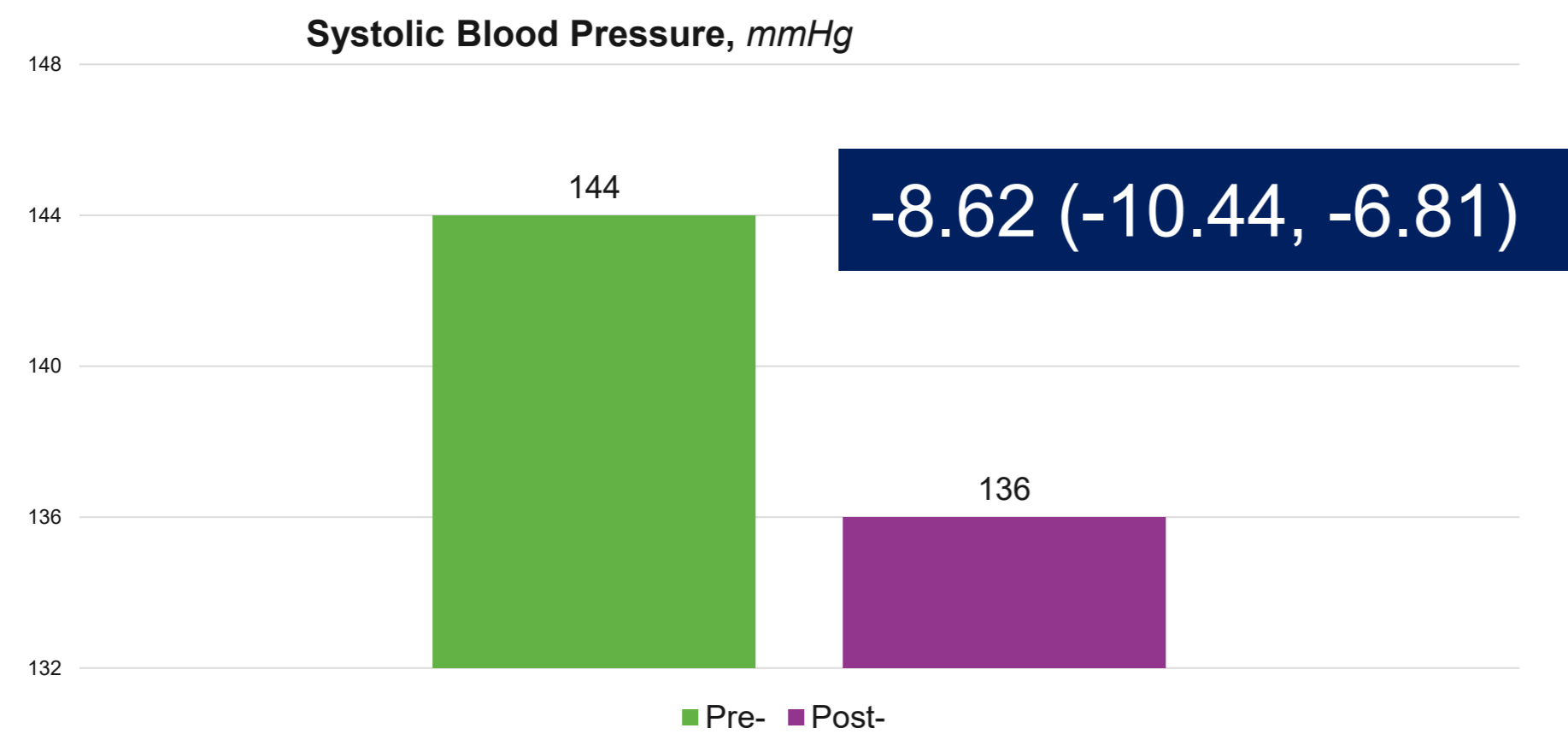
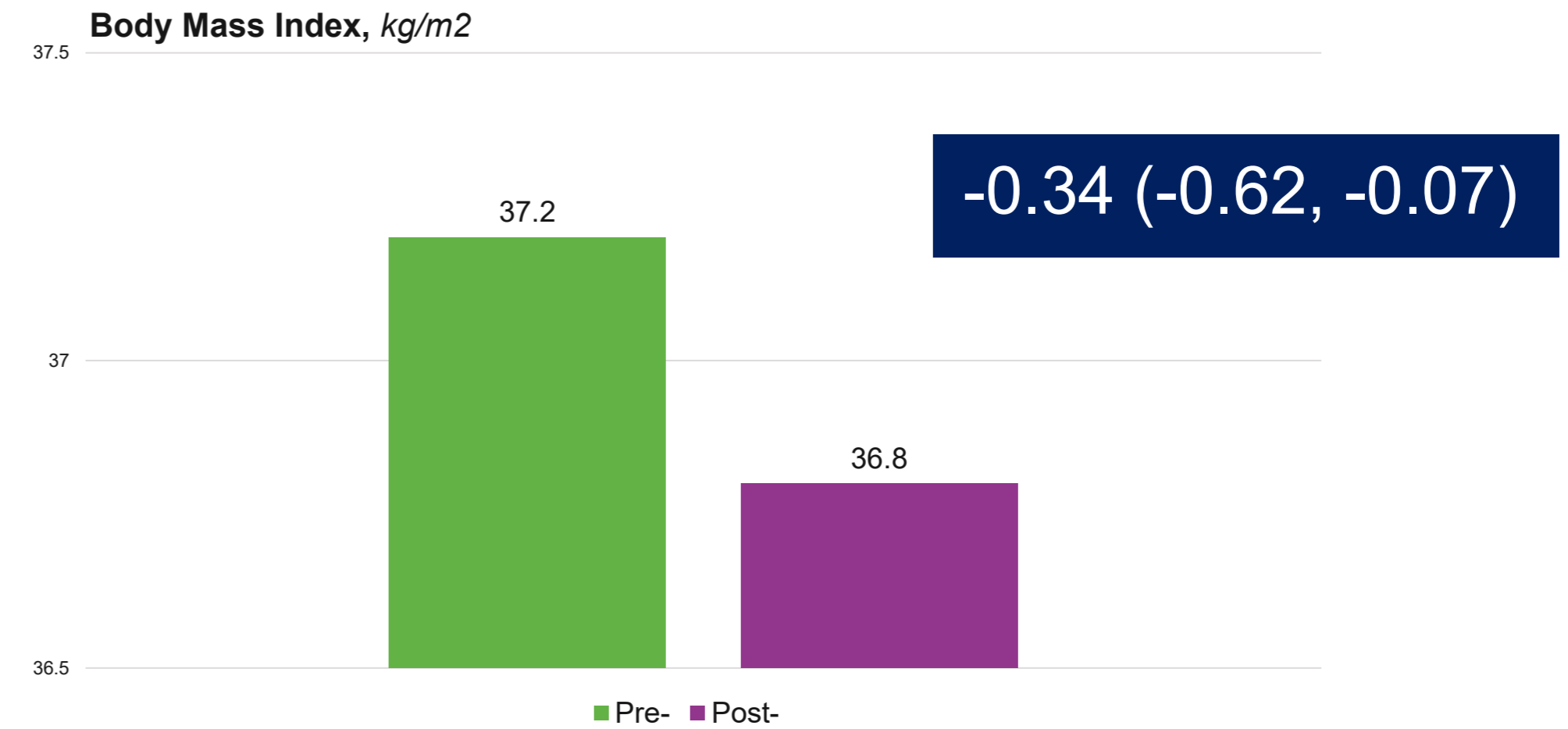
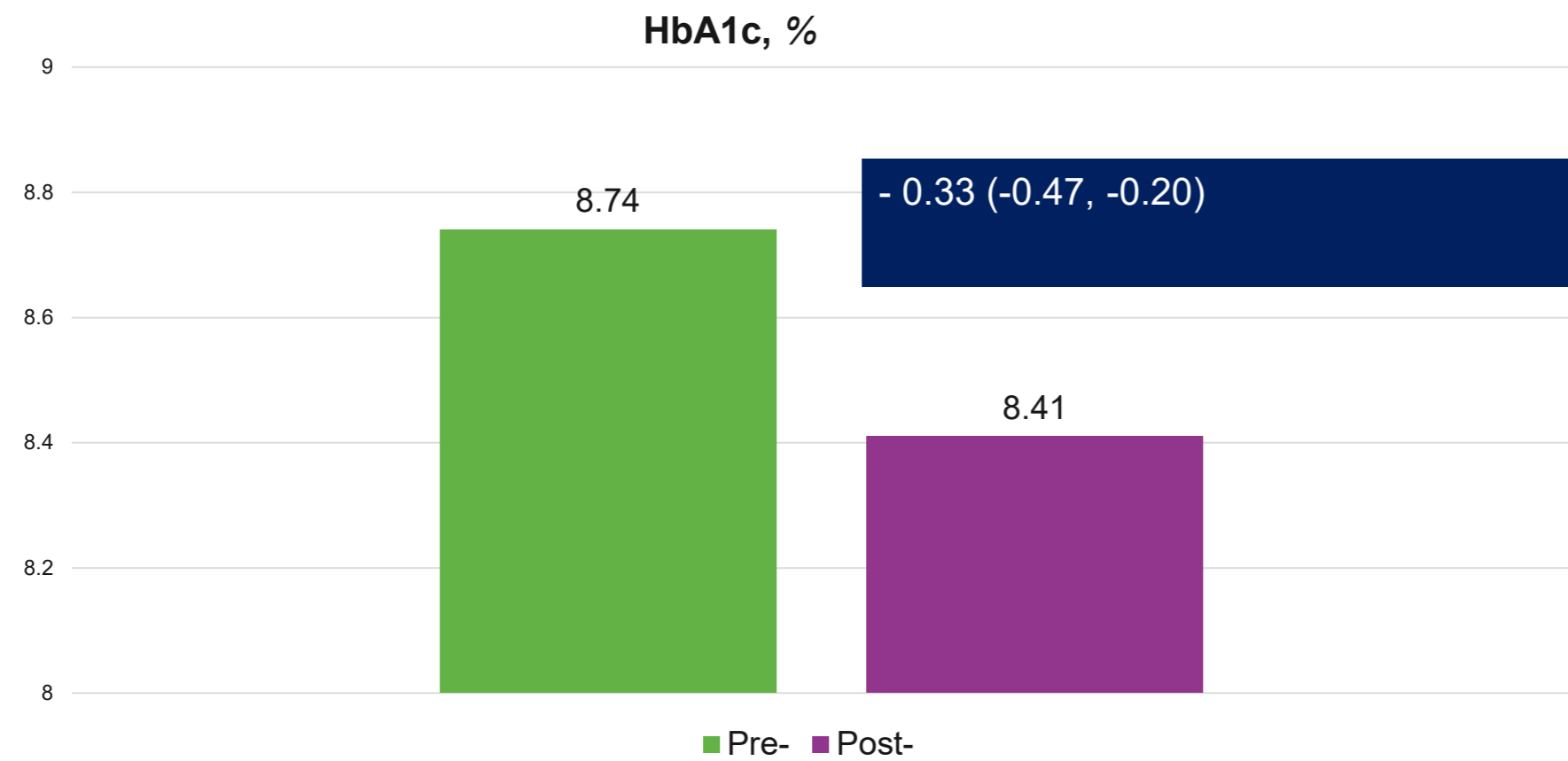
Sample Description

Characteristic	Adult Population N=2064	Child Population N=1817
Age, years, mean	54.4	9.3
Female, %	70.7%	51.4%
Race/Ethnicity, %	Non-Hispanic White: 29.8% Non-Hispanic Black: 45.1% Hispanic: 21.4% Other: 3.6%	Non-Hispanic White: 9.2% Non-Hispanic Black: 13.1% Hispanic: 75.5% Other: 2.3%
Household Size, number of people, mean	2.7	4.6
Household SNAP Enrollment, N (%)	Not measured	62.7%
Household WIC Enrollment, N (%)	Not measured	82.6%
Insurance Status, N (%)	Not measured	Medicaid, CHIP: 79.0% Private: 5.9% Uninsured: 11.4% Other: 5.5%
Parent / Caregiver Employment, N (%)	Not measured	Full-time (40 hrs/wk): 18.5% Part-time (<40 hrs/wk): 24.3% Unemployed: 38.0% Other: 19.2%

Baseline Outcome Measurements

Characteristic	Adult Population N=2064	Child Population N=1817
FV Intake, cups per day, <i>mean</i>	2.7	3.4
Food Insecurity, %	65.8%	49.4%
HBA1c, %, <i>mean</i>	8.7	<i>Not measured</i>
Systolic Blood Pressure, mm Hg, <i>mean</i>	144.5	<i>Not measured</i>
Diastolic Blood Pressure, mm Hg, <i>mean</i>	87.5	<i>Not measured</i>
Body Mass Index, Kg/m ² , <i>mean</i>	37.3	<i>Not measured</i>
Body Mass Index z-score for sex and age, <i>mean</i>	<i>Not measured</i>	1.9

Results: Adult Clinical Outcomes



**Clinically meaningful and statistically significant improvements
at $p < 0.0001$**

Evaluation of a Produce Prescription Program for Patients With Diabetes: A Longitudinal Analysis of Glycemic Control

Kurt Hager, Peilin Shi, Zhongyu Li, Kenneth Chui, Seth A. Berkowitz, Dariush Mozaffarian, Jyoti Chhabra, Joel Wilken, Cunegundo Vergara, Erica Becker, Sara Small, Brent Ling, Sean B. Cash, Sara C. Folta, and Fang Fang Zhang

Sample: 252 patients with diabetes from 2 clinics at Hartford Hospital serving low-income neighborhoods
534 controls of similar patients who did not participate

Primary Outcome: HbA1c

Secondary Outcomes: inpatient hospitalizations, emergency department admissions, blood pressure, BMI

Design: Quasi experimental longitudinal study with propensity score weights



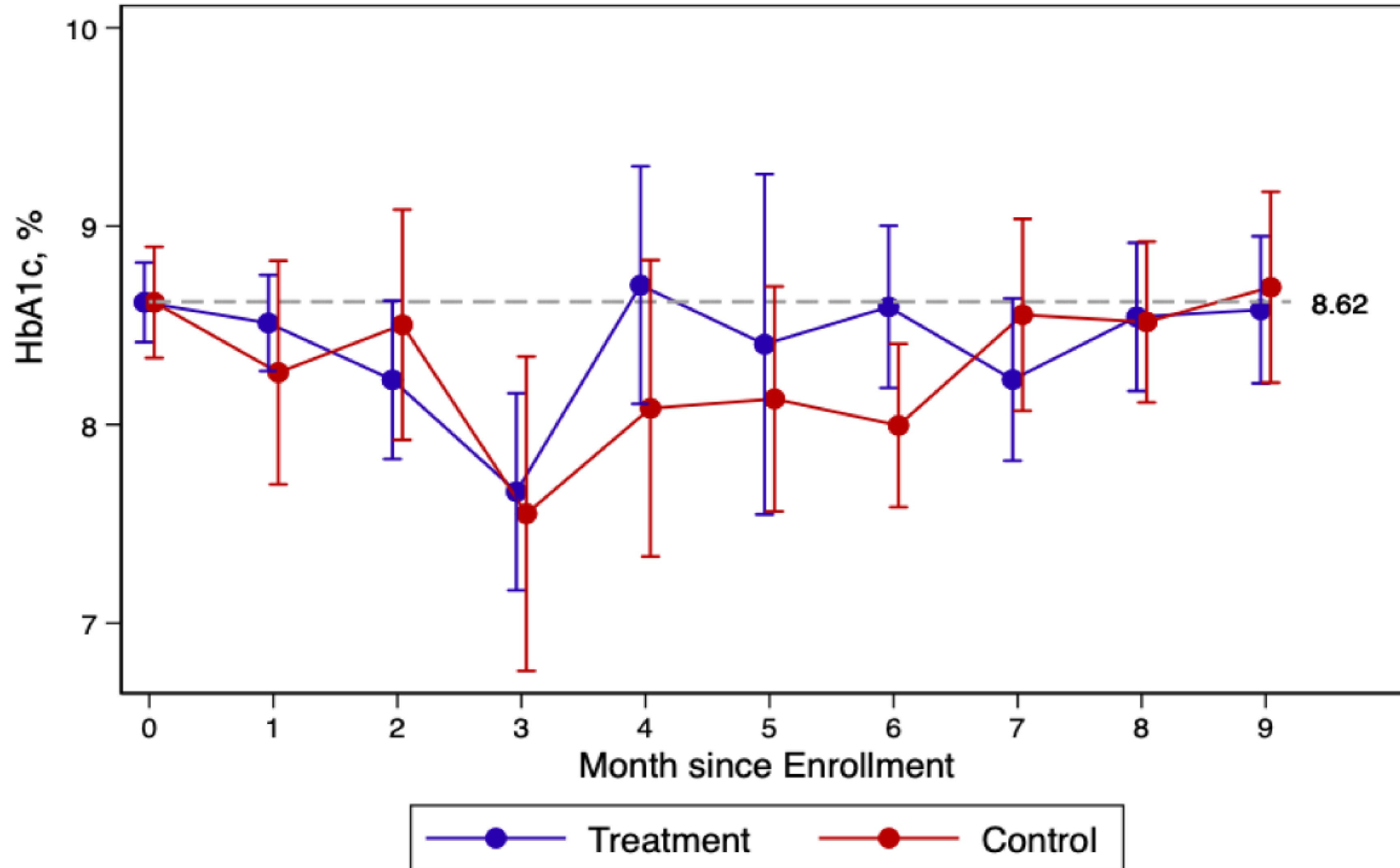
Hartford Healthcare Produce Prescription Program

Program Overview: \$60 / month / household for 6 months redeemable for produce at partner grocery stores and mobile market

Timing:

- Program duration Nov 2019 – Oct 2020
- Disrupted by first wave of COVID-19 pandemic late March 2020

HbA1c by Month Intervals since Enrollment for Treatment and Control Groups



Possible Explanations For Null Findings

1. COVID-19 disruptions in clinical care and in the economy

- Fewer touch points with care teams
- Disruptions in work, income, and childcare
- Stimulus aid may have washed out program impacts
- Rising food prices and shortages

2. Program design factors

- Benefit adequacy
- Scaling benefits by household size
- No nutrition education

3. Publication bias or regression to the mean in previous studies

Trial Evidence

Circulation Conference presentation Nov 6, 2023

Claudia Nau, Jason H Wu, Bing Han, Mina Habib, Zheng Gu, Xia Li, Ceping Chao,
Pam Schwartz and Dariush Mozaffarian

- 450 patients with type II diabetes
- 6 month produce prescription program at \$90-270 per month
- All home-delivered during COVID-19
- Home measurements for HbA1c during COVID-19


HbA1c at 6 months was significantly reduced in the treatment group
-0.37 [95%CI:-0.71;-0.04], p=0.03

Produce Prescription Cost Effectiveness

JAHA

Journal of the American Heart Association

Health and Economic Impacts of Implementing Produce Prescription Programs for Diabetes in the United States: A Microsimulation Study

Lu Wang , Brianna N. Lauren, Kurt Hager, Fang Fang Zhang, John B. Wong, David D. Kim and Dariush Mozaffarian

Population: US adults with diabetes

- Nationally representative sample drawn from NHANES

Policy: \$40 / month continuously for up to 30 years

Model: Tufts CVD Microsimulation

Effect sizes from meta-analysis of changes in FV intake associated with produce prescriptions

- Produce Rx = \$18,100/Quality Adjusted Life Year (QALY)
- Drug treatment for hypertension = \$20,000/QALY
- Use of statins = \$37,000/QALY

CURRENT COVERAGE & POLICY OPPORTUNITIES



What Next? And Who Pays?

- Traditionally, programs have been supported by small, community-based organizations
- Paid for by private philanthropy and foundation grants
 - Inherently unsustainable for a healthcare-based intervention!
- Healthcare partnerships pursued by CBOs to diversify revenue stream

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

SEPTEMBER 2022



THE WHITE HOUSE
WASHINGTON

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 is not universal. To better serve 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

costs. The Biden-Harris Administration supports legislation to create a pilot to test covering medically tailored meals for individuals in traditional Medicare who are experiencing diet-related health conditions. This proposal builds on a demonstration initiative in Medicaid, where HHS Centers for Medicare & Medicaid Services (CMS) will provide authority for states to test Medicaid coverage of additional nutrition services, and supports using Medicaid section 1115 demonstration projects. HHS CMS will also issue guidance on how states can use section 1115 demonstrations to test the expansion of coverage for these interventions.

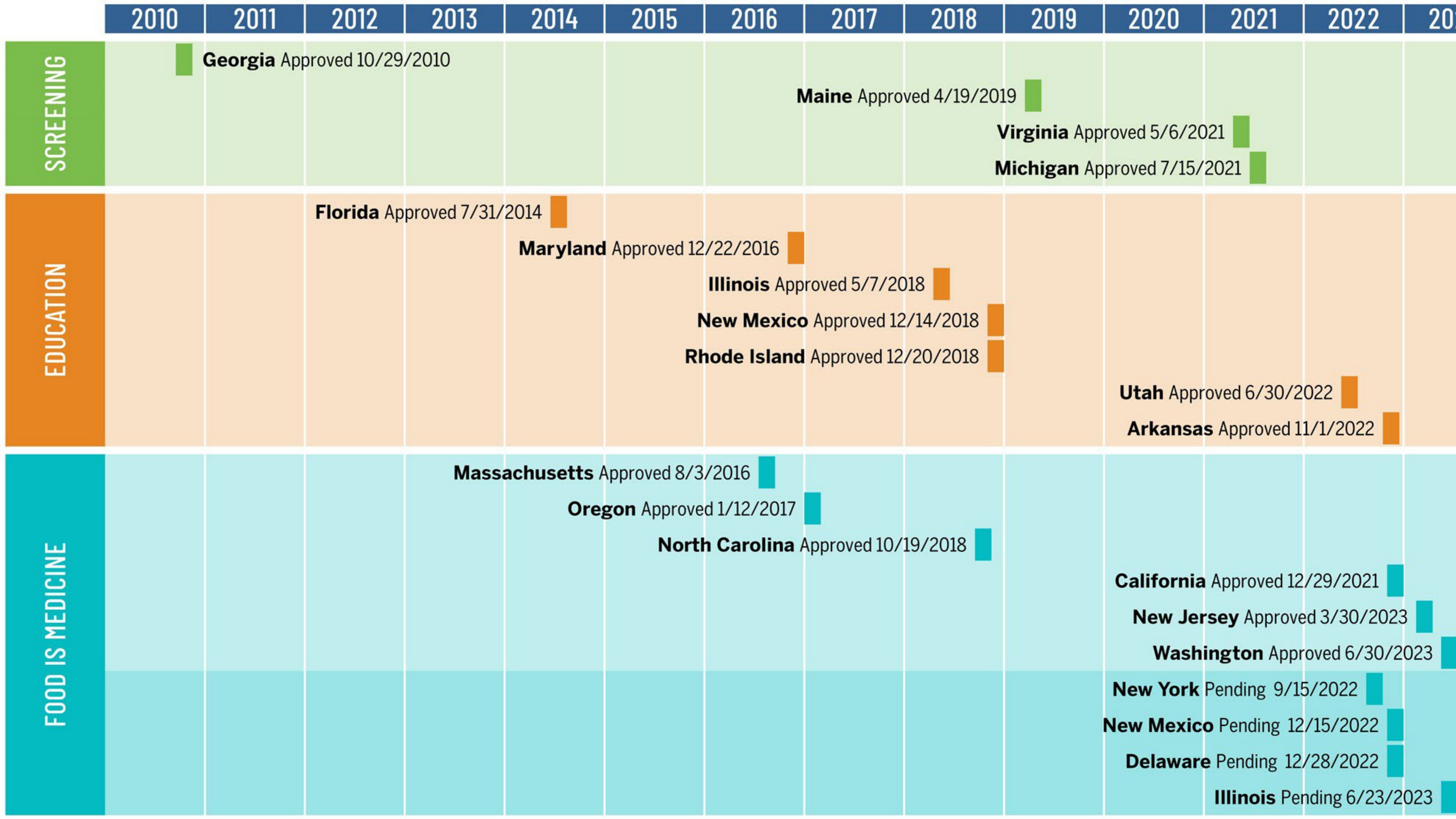
Medicaid Section 1115 Waivers

States can use to test new or existing ways to deliver and pay for health care services in Medicaid beyond what is available under current law.

Requires improved health outcomes or expanded coverage without increased costs.

States submit a waiver request and CMS can approve it for up to 5 years.

Several US states are using 1115 waivers to pay directly for produce prescriptions for select, qualifying members!



Massachusetts Flexible Services Program Directory

Learn about programs you may be able to enroll your patients in *today*:
[Flexible Services Program Directory](#)



FOOD AS MEDICINE APPLICATION EXAMPLES



The Food As Medicine Partnership

The Innovative Food as Medicine Partnership:

Addresses food insecurity and chronic disease with a food prescription program (Food Rx) for patients with uncontrolled conditions

Drives better health outcomes and improves management of chronic diseases such as diabetes and hypertension

Improves access to healthy foods among Grady's patients and employees.

The Scope of Food Insecurity

Food insecurity at Grady is nearly **4 times higher** than the rest of Atlanta



Grady surveys indicate that **50% of patients are food insecure** – *more than 140,000 patients*



Food Rx Program

Purpose: chronic disease management

Eligibility:

positive for food insecurity AND A1C>9

positive for food insecurity AND BP>140/90

Enrollment process:

BPA -> referral to pharmacy + nutrition

Walk-in/same day enrollment

Program: 3-mo episode (renewable up to 1 yr)

Food pick ups: every two weeks (6)

free, no copay

Nutrition visits, virtual option: monthly (3)

virtual option; co-pay may apply

Cooking class, in-person only: once (1)

in-person only; no copay

Follow up visit with PCP

Talking Points

- Part of your diabetes, hypertension care plan.
- Gives you the tools to help you improve health and prevent complications.

Measures

- Weight/BMI, waist circumference, BP, A1C
- Food security
- Quality of Life
- Utilization (PCP visits, admissions, ED visits, cost)

Teaching Kitchen

Patient Classes

- Life Skills Education
- Diabetes Nutrition Education
- Hypertension Focused Education
- Hands-on Cooking Class

Monthly Tastings for Employees
Culinary Medicine for Residents



Food Pharmacy

- Tuesday, Wednesday, Friday 9AM-3PM
- Thursday 9AM-4:30PM
- Saturday 10AM-1PM

Atlanta Community Food Bank provides:

- Seasonal fresh produce
- Whole grains & plant proteins

Food prescriptions for patients who are food insecure and have diet-related chronic condition, with enough for the entire family.



Food Rx Program: Impact

The Food Rx program is having a positive impact on patient health and food access:

- **Chronic Disease** *“Since I started this this program 6 months ago, my A1C went down from 16% to 5%.”*
- **Lifestyle Changes** *“Before I started, I was on 3 different BP medicines. At my recent visit, my doctor took me off two. This program is great! Its giving me the nutrition education and cooking skills I need to change my lifestyle and get healthier.”*
- **Food Security** *“The Food as Medicine program is great because once I pick up my produce, I know that when I go to the grocery store I will not need to purchase as much food.”*

Opened in August 2020:

2282 patients enrolled

470 active participants

201 Graduates of the program

- 20% with children
- 49% with older adults

15,105 food pharmacy visits

420k lbs of food distributed
(85% produce)

575 cooking classes

3000 patient visits

Food Rx Program: Impact

Improved food security – of those living with very low food security there was a 12% decrease in food insecurity

Improved perceived health – 3 fewer days of poor physical health

Improved physical health – 2.4 % ↓ in A1C for those with uncontrolled DM and a 1.3 % ↓ in A1c for all graduates.



Food Rx Program: Patient Success Story!

Ivelesie Rivera, a 2021 graduate of the Food Prescription program, decreased her A1C from 15.2 to 6.7!

“I didn’t know how to eat. But, now instead of feeling weak and craving unhealthy foods, I have more energy than ever before and I know how to use vegetables in all my meals.”



Food As Medicine Prescription Program

What is the Food As Medicine Prescription Program?

Just like medicine, a healthy diet is also needed for staying well and feeling better. Eating more fresh fruits and vegetables can improve your health and well-being.

You can enroll in Grady's Food as Medicine Program by visiting the Food Pharmacy. This 3-month program provides the following benefits at no cost:

- Fresh food pick-up every two weeks (10-20 pounds)
- Nutrition education provided by a Grady Dietitian once per month (copay may be required)
- Cooking classes in Grady's on-site Teaching Kitchen (1-3 classes required)

Why visit the Food Pharmacy?

- Receive free food (seasonal produce, grains, and beans)
- Practice healthy cooking skills
- Taste new healthy recipes
- Learn healthy eating tips

What do I need to use the Food Pharmacy?

You must have a referral from your Grady provider to visit the Food Pharmacy.

Where is the Food Pharmacy?

The Food Pharmacy is located inside Grady's Jesse Hill Market, on the ground floor of the Butler Parking Deck.

Visit the Food Pharmacy before you leave today!

Monday:	Closed
Tuesday:	9 AM – 3 PM
Wednesday:	9 AM – 3 PM
Thursday:	9 AM – 4:30 PM
Friday:	9 AM – 3 PM
Saturday:	10 AM – 1 PM
Sunday:	Closed

The Food Pharmacy is closed daily from 1-1:30 PM.

If you can't go today, make sure to go within 2 weeks to enroll in the Food As Medicine program to receive full benefits. You do not need to schedule an appointment to visit the Food Pharmacy.



Jesse Hill Market
92 Jesse Hill Jr Drive SE
Atlanta, GA 30303
(404) 616-1865



Referral & Instructions

MA completes SmartSet and gives patient FAM flyer.

Talking Points

- Part of your diabetes, hypertension care plan.
- Walk over today. You don't need an appointment!
- Enroll within 10 minutes.
- You will receive fresh produce at enrollment visit.

Barriers To Engagement

In 2022, 55% of patients didn't re-enroll due to competing priorities

44% - lack of transportation
24% - time commitment
16% - caregiver responsibilities
12% - physical challenges
4% - work hours

SNAP & Pantry Referrals

ACFB's Benefits Outreach Team

By phone
678-553-5917

Hospital

Jesse Hill Market: Wednesdays 9AM-3PM

Neighborhood Health Centers

Asa Yancey: Mondays 9AM-12PM

Brookhaven: 4th Tuesdays 9AM-12PM

Ponce De Leon: 2nd & 4th Mondays 1-3 PM

East Point: 2nd Tuesday 9a – 12p

NEED HELP
APPLYING FOR
SNAP?
(FOOD STAMPS)



CONTACT OUR BENEFITS OUTREACH TEAM
AT 678.553.5917



**ATLANTA
COMMUNITY
FOODBANK**

Other FAM Programs

FAM partners, staff, dietitians are working across Grady to implement programs for patients and employees.

SNAP (food stamp) Assistance

Call Food Bank Benefits Outreach Team:

678-553-5917

*Restarted onsite services in August 2021 at Main Grady (JHM), Camp Creek, Asa Yancey, and Brookhaven

Fresh Food Carts

Refer patients to NHC RD or MSW

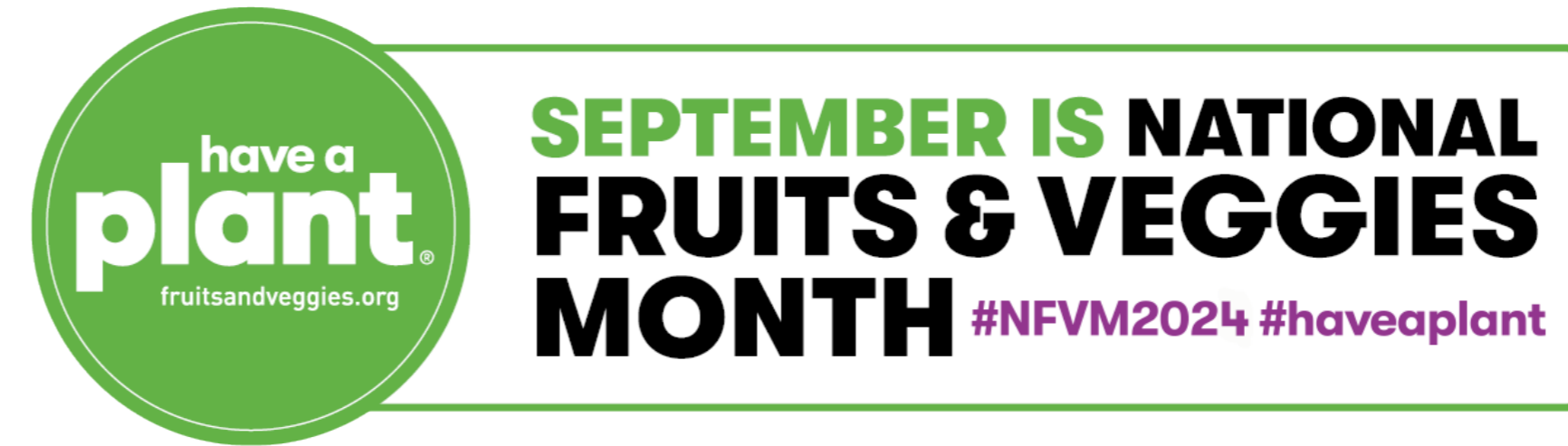
- Neighborhood mobile food pharmacy
- Drive-thru produce distributions pts at clinics:
 - Asa Yancey: 1st Wed
 - Brookhaven: 2nd Wed
 - Ponce: 3rd Wed



QUESTIONS & DISCUSSION



JOIN THE MOVEMENT



- Join the Have A Plant[®] community at fruitsandveggies.org/jointhenetwork
- Follow our social channels! #haveaplant



- Celebrate National Fruits & Veggies Month to elevate fruit and vegetable consumption to a national priority.
- Start planning for NFVM 2024 now! #NFVM2024

MORE FREE CONTINUING EDUCATION OPPORTUNITIES

fruitsandveggies.org/webinars

Visit our on-demand catalog of webinars on various fruit and vegetable topics including the following and many, many more!



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**HACKS
TO
HABITS**

UNPACKING THE RESEARCH
FOR RETAIL, FOODSERVICE &
COMMUNICATION PROFESSIONALS



**FOOD ROOTED IN BETTER
CARDIOMETABOLIC
HEALTH**

The First Dietary Bioactive
Guideline & Its Impact On
Produce Consumption

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WEBINAR

**The Impact Of Incentives & Produce
Prescriptions On Fruit & Vegetable
Purchase & Consumption**

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GRETCHEN SWANSON
CENTER FOR
NUTRITION

Nutrition
Incentive
Hub

THANK YOU!

We live at the center of produce,
partnership and passion.

**WE'RE SO HAPPY
YOU'RE WITH US!**

