





FOOD AS MEDICINE: AN EVIDENCE-BASED CASE FOR SUSTAINABLE FUNDING IN NEW YORK

Peer-reviewed research and numerous pilots show that Food as Medicine interventions are a powerful response to address diet-related chronic illness, rising health care costs, and health disparities.

The Vast Costs of Food Insecurity and Diet-Related Conditions

Poor diet is the leading risk factor for death in the United States.¹ People who are food insecure, meaning they lack access to the necessary foods to meet their nutritional needs, are at a greater risk of developing <u>10 of the costliest and most deadly</u> diet-related chronic conditions, such as hypertension, coronary heart disease, stroke, cancer, and diabetes.² These burdens disproportionately affect communities of color.³

Diet-affected chronic health conditions cost the United States <u>over a trillion dollars</u> in medical expenses each year.⁴ The costs to the U.S. economy are even higher.⁵

New York Spotlight: Food Insecurity and Chronic Illness

Approximately one in ten (about 800,000) households is food insecure. More than 40% of adults suffer from a chronic condition; 6 in 10 deaths result from such diseases. Chronic illness is responsible for 23% of all hospitalizations.⁶

Food as Medicine: The Evidence-Based Solution

Food as Medicine (FAM) interventions are tailored by medical providers to respond to the connection between food and health by helping to prevent and treat diet-related disease.

Peer-reviewed research demonstrates that FAM treatments – such as medically tailored meals, medically tailored groceries, and produce prescriptions, along with nutrition education – are effective, cost-efficient solutions to improve patient health and address health inequities, leading to significant cost savings.

A recent modeling study found that nationwide adoption of medically tailored meals would prevent an estimated <u>1.6 million hospitalizations</u> and save payers a <u>net \$13.6 billion</u> in the first year.⁷

	Medically Tailored Meals ⁸	Medically Tailored Groceries ⁹	Produce Prescriptions ¹⁰
Number of peer-reviewed studies	14	17	30
Sample health condition(s) of study participants	Type 2 diabetes, HIV/AIDS, congestive heart failure, chronic liver disease, cancer	Type 2 diabetes, prediabetes, cancer, hypertension, heart disease	Type 2 diabetes, prediabetes, obesity, cancer, hypertension, pregnancy
Sample outcomes and findings	Reduced food insecurity, improved HbA1C levels, lower BMI, decreased depression scores, chronic liver disease- specific improvements, heart failure-specific improvements	Reduced food insecurity, improved cholesterol levels, improved HbA1C levels, decreased blood pressure	Reduced food insecurity, increased fruit and vegetable intake, improved HbA1C levels, lower BMI

Meta-analyses compile findings from individual studies, increasing the statistical power of the studies. Three recent meta-analyses further support the conclusion that FAM interventions can improve health outcomes, increase diet quality, and lower health care costs.¹¹

FAM has also been found to boost state and local economies by supporting local and regional farmers and agriculture; benefiting food retailers such as supermarkets, farmers markets, and community-supported agriculture programs (CSAs); and encouraging the growth of community-based organizations.¹²

New York Spotlight: Food as Medicine at Work

Corbin Hill Food Project Food as Medicine Project

Corbin Hill Food Project (CHFP), a BIPOC-led non-profit organization, is leading a produce prescription pilot program supported by the Gus Schumacher Nutrition Incentive Program (GusNIP) that will serve 260 families in the Bronx and Harlem, providing bi-monthly produce boxes over the course of 12 months. CHFP is partnering with Mount Sinai Health System, the Icahn School of Medicine at Mount Sinai, and the Institute for Family Health's Bronx Health REACH Project to measure the impact of the pilot on food insecurity and health outcomes.¹³

Buffalo Niagara Medical Campus Food as Medicine Research Project

Buffalo Niagara Medical Campus (BNMC) has received a grant from the Western New York HighMark Blue Fund to develop a replicable model to deliver medically tailored meals, nutrition education, and social supports. BNMC will collaborate with local health care centers and food purveyors to provide participants two medically tailored meals per day, five days per week, for six weeks. The program will also include nutrition education, mindfulness training, and environmental support.¹⁴

NYC Health + Hospitals 'Food for Health' Produce Prescription Study

The 'Food for Health' research study will test how removing financial, transportation, and access barriers may increase the impact of produce prescription programs on a variety of metrics including children's diets and health, and family food security. The randomized control trial will provide a produce prescription and/or home-delivered, locally grown produce to 250 families with children 2-8 years of age who receive pediatric care at NYC Health + Hospitals in Queens and who are overweight or face obesity and are at risk for chronic diseases later in life.¹⁵

Realizing the Potential of Food as Medicine with Sustainable Funding

Most FAM programs rely on grants and charitable donations for their funding, which can limit scope, reach, and sustainability. In recent years, leaders in the U.S. health care and food systems have been working to address the costs of nutrition insecurity and chronic conditions through systems-level change allowing sustainable funding of FAM treatments through Medicaid and Medicare.

State policymakers and health plans can fully leverage the benefits of FAM by taking advantage of this funding through policy pathways such as Medicaid section 1115 waivers, In Lieu of Services, and Medicare Advantage Supplemental Benefits and Special Supplemental Benefits for the Chronically Ill.¹⁶

New York Spotlight: Sustainable Funding through In-Lieu of Services

New York's approval of medically tailored meals as in lieu of services is a step towards more sustainable funding for FAM interventions.¹⁷ New York can take further action through this and other payment pathways to integrate FAM into health care and fully realize the above, evidence-based returns on investment.

¹THE US BURDEN OF DISEASE COLLABORATORS, *The State of US Health, 1990–2016: Burden of Diseases, Injuries, and Risk Factors Among US States*, 319 JAMA 1444 (2018), <u>https://jamanetwork.com/journals/jama/fullarticle/2678018</u> (doi:10.1001/Jama.2018.0158).

²Christian A. Gregory & Alisha Coleman-Jensen, U.S. DEP'T OF AGRIC., *Food Insecurity, Chronic Disease, and Health Among Working-age Adults* (2017), <u>https://www.ers.usda.gov/webdocs/publications/84467/err-235.pdf</u>.

³See Roberto Flores & Nicholas J. Jury, NAT'L INST. OF HEALTH, NATIONAL INSTITUTES OF HEALTH NUTRITION RESEARCH REPORT 2020–2021, https://dpcpsi.nih.gov/sites/default/files/NIH_Nutrition-Research-Report_RF508_FV-05.pdf.

⁴Costs of Chronic Disease in the U.S., MILKEN INST. (2018), https://milkeninstitute.org/sites/default/files/reports-pdf/ChronicDiseases-HighRes-FINAL_2.pdf.

⁵True Cost of Food Measuring What Matters to Transform the U.S. Food System, THE ROCKEFELLER FOUND. (July 2021), <u>https://www.rockefellerfoundation.org/</u>wp-content/uploads/2021/07/True-Cost-of-Food-Full-Report-Final.pdf.

⁶NEW YORK STATE COMPTROLLER, NEW YORKERS IN NEED FOOD INSECURITY AND NUTRITIONAL ASSISTANCE PROGRAMS (Mar. 2023), <u>https://www.osc.state.ny.us/files/reports/pdf/new-yorkers-in-need-food-insecurity.pdf</u>, NEW YORK STATE DEP'T OF HEALTH, *Chronic Diseases and Conditions* (last revised Nov. 2021), <u>https://www.health.ny.gov/diseases/chronic/</u>.

⁷Kurt Hager et al., Association of National Expansion of Insurance Coverage of Medically Tailored Meals With Estimated hospitalizations and Health Care Expenditures in the US, 5 JAMA NETWORK OPEN e2236898 (2022), https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2797397.

⁸SARAH DOWNER ET AL., CTR. FOR HEALTH L. & POLY INNOVATION AND ASPEN INSTITUTE, FOOD IS MEDICINE RESEARCH ACTION PLAN at 60 (2022) (hereinafter "RESEARCH ACTION PLAN"), https://www.aspeninstitute.org/wp-content/uploads/2022/01/Food-is-Medicine-Action-Plan-Final_012722. pdf; Alan S. Go et al., *Effect of Medically Tailored Meals on Clinical Outcomes in Recently Hospitalized High-Risk Adults*, 60 MED CARE 750 (Oct 2022), https:// pubmed.ncbi.nlm.nih.gov/35972131/; Lauren Belak et al., *The Impact of Medically Tailored Meals and Nutrition Therapy on Biometric and Dietary Outcomes Among Food-insecure Patients with Congestive Heart Failure: A Matched Cohort Study*, 8 BMC NUTRITION (2022), https://doi.org/10.1186/s40795-022-00602-y; Jule Anne Henstenburg et al., *P111 Five-a-Day: Medically Tailored Meal Program Supports Intake of Recommended Fruit and Vegetable Servings*, 54 J. OF NUTRITION EDUC. AND BEHAV. S70 (Jul. 2022), https://doi.org/10.1016/j.jneb.2022.04.152; Kurt Hager et al., *Association of National Expansion of Insurance Coverage of Medically Tailored Meals With Estimated Hospitalizations and Health Care Expenditures in the U.S.*, 5 JAMA NETWORK OPEN e2236898 (2022), https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2797397.

⁹RESEARCH ACTION PLAN at 66; Linda Yu et al., Assessing the Health Outcomes of the Food Access Pilot Project: An Evaluation of a Medically Supportive Food Support Program for People Living with HIB in Rural California Counties, 26 AIDS BEHAV. 2613 (2022), https://doi.org/10.1007/s10461-022-03589-6; Jason Hy Wu et al., Testing the Feasibility and Dietary Impact of a "Produce Prescription" Program for Adults with Undermanaged Type 2 Diabetes and Food Insecurity in Australia, 152 J. NUTR. 2409 (2022), https://doi.org/10.1093/jn/nxac152; Lauren Ciszak et al., Medically Tailored Meal Kits as a Means of Decreasing Healthcare Utilization in Primary Care Patients with Heart Failure, 20 THE ANNALS OF FAMILY MED. 2673 (Apr. 2022), https://doi.org/10.1370/afm.20.s1.2673; Francesca Gany et al., Food to Overcome Outcome Disparities: A Randomized Controlled Trial of Food Insecurity Interventions to Improve Cancer Outcomes, 40 J. CLIN. ONCOL. 3603 (Nov. 2022), http://ascopubs.org/doi/full/10.1200/ICO.21.02400; David Hu et al., Food as Medicine Clinic: Early Results and Lessons Learned, 14 CUREUS e31912 (Nov. 2022), https://www.cureus.com/articles/126134.

¹⁰RESEARCH ACTION PLAN at 72; Laura Fischer et al., *Feasibility of a Home-Delivery Produce Prescription Program to Address Food Insecurity and Diet Quality in Adults and Children*, 14 NUTRIENTS (May 2022), <u>https://doi.org/10.3390/nu14102006</u>; Mary Jane Lyonnais, *A Produce Prescription Program in Eastern North Carolina Results in Increased Voucher Redemption Rates and Increased Fruit and Vegetable Intake among Participants*, 14 NUTRIENTS (June 2022), <u>https://doi.org/10.3390/nu14122431</u>; Jacqulene Pick Harris et al., *Farmers' Market Voucher Initiative to Improve Diabetes Control in Older Adults*, 18 THE J. FOR NURSE PRAC. 236 (Feb. 2022), <u>https://doi.org/10.1016/j.nurpra.2021.09.010</u>.

¹¹Aleda M H Chen et al., *Food as Medicine? Exploring the Impact of Providing Healthy Foods on Adherence and Clinical and Economic Outcomes*, 5 EXPLORATORY Res. CLIN. Soc. PHARMACY (Mar. 2022), <u>https://pubmed.ncbi.nlm.nih.gov/35478519/;</u> Yueying Gao et al., *The Effect of Food is Medicine Interventions on Diabetes-related Health Outcomes Among Low-income and Food-insecure Individuals: A Systematic Review and Meta-analysis*, 47(2) CAN. J DIABETES (Mar. 2023), <u>https://pubmed. ncbi.nlm.nih.gov/36470724/;</u> Alyson Haslam et al., *The Effect of Food Prescription Programs on Chronic Disease Management in Primarily Low-Income Populations: A Systematic Review and Meta-Analysis*, 28(3) NUTR. HEALTH (Sep. 2022), <u>https://pubmed.ncbi.nlm.nih.gov/35108144/</u>.

¹²GUS SCHUMACHER NUTRITION INCENTIVE PROGRAM TRAINING, TECHNICAL ASSISTANCE, EVALUATION, AND INFORMATION CENTER (GUSNIP NTAE): IMPACT FINDINGS, NUTRITION INCENTIVE HUB (2021), <u>https://www.nutritionincentivehub.org/media/fjohmr2n/gusnip-ntae-impact-find-ings-year-2.pdf;</u> Julian Xie et al., *The Impact of a Produce Prescription Programme on Healthy Food Purchasing and Diabetes-Related Health Outcomes*, 24 PUBLIC HEALTH NUTR. 3945 (2021), <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8369461/</u>.

¹³CORBIN HILL FOOD PROJECT, Food as Medicine Project Brings Farm Fresh Produce to Upper Manhattan and Bronx Residents (May 17, 2022), <u>https://corbin-hill-foodproject.org/newsletters/2022/5/16/press-release-food-as-medicine</u>.

¹⁴BUFFALO NIAGARA MED. CAMPUS, Food As Medicine, <u>https://bnmc.org/health-and-wellbeing/food-as-medicine/</u> (last visited April 12, 2023); HIGHMARK WESTERN N.Y. 2018-2022, *Blue Fund Grant Summary*, <u>https://www.bcbswny.com/content/dam/BCBSWNY/PDF/blue-fund/2018-2022-highmark-blue-fund-award-recipients-in-wny.pdf</u> (last visited April 12, 2023).

¹⁵NYC HEALTH + HOSPITALS, NYC Health + Hospitals Launches Produce Prescription Program Study to Improve the Health of Children with Overweight and Obesity (June 2022), <u>https://www.nychealthandhospitals.org/pressrelease/health-system-launches-produce-prescription-program-study/</u> (last visited April 12, 2023).

¹⁶See KATIE GARFIELD ET AL., ADDRESSING NUTRITION AND FOOD ACCESS IN MEDICAID (Jan. 2022), <u>https://populationhealthalliance.org/wp-content/</u> uploads/2022/01/addressing_nutrition_foodaccess_Jan2022.pdf.

¹⁷N.Y. STATE DEP'T OF HEALTH, New York State Medicaid Managed Care Alternative Services and Settings – In Lieu of Services (ILS), <u>https://www.health.ny.gov/</u> <u>health_care/managed_care/app_in_lieu_of_svs_mmc.htm</u> (last visited April 12, 2023).