

ARTICLE

Preventive Care: Improving Health of Medicare, Medicaid, and Children’s Health Insurance Program Patients Through Access to Fresh Fruit and Vegetables

Weston McClain

University of Oregon School of Law, Eugene, OR, USA
Email: westonmcclain@gmail.com

Abstract

Diet is the number one risk factor for deaths in the United States. Members of marginalized and impoverished communities particularly struggle to afford nutritious food. Poor diets result in health disparities along socio-economic, age, racial, ethnic, indigenous, rural, and urban lines. Despite the ever-growing social and financial burden of diet-related chronic diseases, the U.S. has failed to invest in health care-related dietary policy. This Article proposes produce prescriptions as a national dietary preventive medicine program through Medicare, Medicaid, and the Children’s Health Insurance Program (CHIP).

Recently, nonprofits, governments, and health care providers have designed innovative produce prescription programs to combat diet-related chronic diseases. In these programs, clinical providers can prescribe subsidized fruit and vegetables to patients. Produce prescriptions empower patients by making dietary change affordable and by motivating patients to improve their health. Numerous studies, pilot projects, and local programs demonstrate that produce prescriptions can improve health care outcomes for individuals from diverse communities. Most at-risk members of our society receive health coverage through Medicare, Medicaid, or CHIP. This Article analyzes how to scale up produce prescriptions within these programs using law and policy.

Keywords: produce prescriptions; Medicare; Medicaid; CHIP; diet; chronic disease

Introduction: produce prescriptions—an effective strategy to improve health outcomes in the United States

In the United States, brutal health disparities exist along socio-economic,¹ racial and ethnic,² indigenous,³ and geographic⁴ lines. Many of these disparities begin with divergent diets.⁵ Doctors and other health experts have long known that preventive care is essential;⁶ healthy food is, truly, our best medicine. Unfortunately, the United States’ public policies do not reflect this fact.

¹Matthew J. Belanger et al., *Covid-19 and Disparities in Nutrition and Obesity*, NEW ENG. J. MED., Sept. 10, 2020, at e69(1), e69(1) (discussing how COVID-19 has highlighted link between diet and health disparities).

²*Id.*

³*Id.*

⁴Jesse Bradford et al., *COVID-19 and Rural Communities: Protecting Rural Lives and Health*, MCKINSEY & CO. (Mar. 10, 2021), <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/covid-19-and-rural-communities-protecting-rural-lives-and-health> [<https://perma.cc/7WMV-GB9E>].

⁵Belanger et al., *supra* note 1, at e69(1).

⁶Sharon K. Hull, *A Larger Role for Preventative Medicine*, 10 AM. MED. ASS’N. J. ETHICS 724, 725 (2008).

Medicare, Medicaid, and the Children's Health Insurance Program (CHIP) provide the bedrock of health care for roughly one in every three Americans.⁷ These programs provide essential services to the elderly, children, pregnant women, persons with disabilities, and economically disadvantaged persons from marginalized communities.⁸ In recent decades, these public health programs have begun to reflect the importance of preventive care.⁹ As a result, benefits now include preventive screenings and wellness checks.¹⁰ Yet Medicare and Medicaid still fail to address one of most important parts of preventive care—diet.¹¹

Many physicians and other health care providers want to help patients improve their diets, but providers complain that they do not have sufficient resources to offer.¹² Over the last decade, many nonprofit organizations, governments, and health care providers have partnered to solve this problem.¹³ In these partnerships, clinical providers prescribe subsidized fruit and vegetables to their patients.¹⁴ These prescriptions motivate patients to consistently consume fresh produce, and subsidies make dietary change financially attainable.¹⁵ These programs demonstrate that produce prescriptions improve the lives of patients and reduce the incidence of costly health conditions.¹⁶

While the federal government has funded some produce prescription programs through the 2018 Farm Bill and 2021 Stimulus Package, no national program exists.¹⁷ This Article proposes nationwide produce prescription benefits through Medicare, Medicaid, and CHIP. Numerous studies and pilot projects show that subsidized prescription fruit and vegetables improve health¹⁸ and disproportionately benefit at-risk communities.¹⁹ In particular, a national program would help prevent or lessen instances of diabetes²⁰ and obesity.²¹ Although no single policy will eradicate the health challenges that disadvantaged communities face, this policy change would also help bring about better health equity.²²

Because limited economic research on produce prescriptions exists, this Article primarily focuses on the legal and policy aspects of produce prescriptions as well as justifications for this method of intervention. First, this Article examines the need for diet-related preventive medicine within

⁷KATHERINE KEISLER-STARKEY & LISA N. BUNCH, HEALTH INSURANCE COVERAGE IN THE UNITED STATES: 2020 5 (2021). Public health insurance programs such as Medicare, Medicaid, CHIP, and VA benefits cover 34.8% of Americans. Medicare covers 18.4% of Americans and Medicaid covers 17.8%. *Id.*

⁸CTRS. FOR MEDICARE & MEDICAID SERVS. MEDICARE & MEDICAID BASICS, (Apr. 2022); Robin Rudowitz et al., *10 Things to Know about Medicaid: Setting the Facts Straight*, KAISER FAM. FOUND. (Mar. 6, 2019), <https://files.kff.org/attachment/Issue-Brief-10-Things-to-Know-about-Medicaid-Setting-the-Facts-Straight> [<https://perma.cc/ZTA6-S9XU>].

⁹See, e.g., CTRS. Medicare & Medicaid Servs., *Background: The Affordable Care Act's New Rules on Preventive Care* (July 15, 2010), <https://www.cms.gov/CCIIO/Resources/Fact-Sheets-and-FAQs/preventive-care-background> [<https://perma.cc/KF7P-7P7X>].

¹⁰*Id.*

¹¹Ali H. Mokdad et al., *The State of US Health, 1990-2016: Burden of Disease, Injuries, and risk Factors among US States*, 319 JAMA 1444, 1451 (2018). Dietary risks are the leading factor for number of deaths and a leading risk factor in percentage of disability-adjusted life-years in the United States. *Id.*

¹²Jennifer N. Aiyer et al., *A Pilot Food Prescription Program Promotes Produce Intake and Decreases Food Insecurity*, 9 TRANSLATIONAL BEHAV. MED. 922, 922 (2019) (discussing how clinical health care providers are hesitant to screen for food insecurity because they feel like they have little to offer).

¹³KATIE GARFIELD ET AL., MAINSTREAMING PRODUCE PRESCRIPTIONS: A POLICY STRATEGY REPORT 3 (2021).

¹⁴*Id.*

¹⁵Michelle Cavanagh et al., *Veggie Rx: An Outcome Evaluation of a Healthy Food Incentive Programme* 20 PUBLIC HEALTH NUTRITION 2636, 2636 (2016).

¹⁶GARFIELD ET AL., *supra* note 13, at 4.

¹⁷*Id.*; Press Release, USDA NIFA Invests \$40M to Improve Dietary Health and Reduce Food Insecurity (June 1, 2022), <https://www.nifa.usda.gov/about-nifa/press-releases/usda-nifa-invests-40m-improve-dietary-health-reduce-food-insecurity> [<https://perma.cc/LAS3-MXD4>].

¹⁸GARFIELD ET AL., *supra* note 13, at 4.

¹⁹*Id.* at 3-6.

²⁰Richard Bryce et al., *Participation in a Farmers' Market Fruit and Vegetable Prescription Program at a Federally Qualified Health Center Improves Hemoglobin A1C in Low Income Uncontrolled Diabetics* 7 PREVENTIVE MED. REP. 176, 176 (2017).

²¹Cavanagh et al., *supra* note 15, at 2638-39.

²²GARFIELD ET AL., *supra* note 13, at 13.

Medicare, Medicaid, and CHIP. This section analyzes the diet-related financial challenges that federal health programs face. This section then discusses the importance of diet in preventive medicine. Second, this Article weighs the benefits and drawbacks of various diet-related policy approaches; this section also discusses existing produce prescriptions in the United States. Third, this Article discusses the positive impacts of including produce prescriptions in federal health programs with a specific focus on at-risk communities. Fourth, this Article compares produce prescriptions to other food insecurity policies. Fifth, this Article considers the ideal design of produce prescriptions. This section discusses policy choices, legal methods, funding, flexible designs, political considerations, and next steps for produce prescriptions in the United States. Finally, this Article considers indirect positive impacts of produce prescription programs as well as potential challenges, disadvantages, and limitations.

The need for diet-related preventive medicine in federal health programs

Medicare, Medicaid, and CHIP provide critical care to millions.²³ Medicare ensures that elderly members of society have access to health care.²⁴ Medicaid is our nation's primary health-related safety net for economically disadvantaged members of racial and ethnic minority communities, persons with disabilities, pregnant women, and other financially challenged people.²⁵ CHIP provides essential care to children from economically challenged families including young members of marginalized groups.²⁶

Medicare, Medicaid, and CHIP patients face many health-related challenges caused by poor diets. The COVID-19 pandemic has illuminated many of the health disparities that exist in the United States.²⁷ Members of marginalized and impoverished communities have poorer health outcomes.²⁸ Many of these disparities ultimately stem from life circumstances.²⁹ Social determinants of health (SDOHs) include access to healthy food, access to health care, socioeconomic status, location and physical environment, education, racial and ethnic discrimination, social context, and community context.³⁰ These SDOHs greatly impact the overall health and health outcomes of patients and are often present and detectable long before patients are diagnosed with specific disease.³¹

Diet substantially impacts health care outcomes.³² In the United States, a person's diet— followed by tobacco use—is the leading risk factor contributing to death.³³ Extensive evidence links poor nutrition to diseases including diabetes, cardiovascular disease, and hypertension.³⁴ In particular,

²³CTR. FOR MEDICARE & MEDICAID SERV., MAY 2021 MEDICAID AND CHIP ENROLLMENT TRENDS SNAPSHOT 3 (2021), <https://www.medicare.gov/medicaid/national-medicare-chip-program-information/downloads/may-2021-medicare-chip-enrollment-trend-snapshot.pdf> [https://perma.cc/RD47-G92Z].

²⁴DEP'T OF HEALTH AND HUM. SERV., *supra* note 8, at 1.

²⁵CTR. FOR MEDICARE & MEDICAID SERV., MEDICARE & MEDICAID BASICS 4 (2018), <https://www.medicare.gov/Pubs/pdf/11306-Medicare-Medicaid.pdf> [https://perma.cc/RD47-G92Z]. See Samantha Artiga et al., *Health Coverage by Race and Ethnicity, 2010-2019*, KAISER FAM. FOUND. (Dec. 20, 2022), <https://www.kff.org/racial-equity-and-health-policy/issue-brief/health-coverage-by-race-and-ethnicity/#> [https://perma.cc/9FLF-QN7A].

²⁶JULIA PARADISE, THE IMPACT OF THE CHILDREN'S HEALTH INSURANCE PROGRAM (CHIP): WHAT DOES THE RESEARCH TELL US? 1 (Kaiser Fam. Found. 2014) https://www.kff.org/wp-content/uploads/2014/07/8615-the-impact-of-the-children_s-health-insurance-program-chip-what-does-the-research-tell-us.pdf [https://perma.cc/4FJG-7QE2]. See, Artiga et al., *supra* note 25.

²⁷Belanger et al., *supra* note 1, at 1.

²⁸See generally *id.*; Jessie A. Satia, *Diet-related Disparities: Understanding the Problem and Accelerating Solutions* 109:4 J. AM. DIETETIC ASS'N 610, 611-12 (Apr. 2010).

²⁹Belanger et al., *supra* note 1, at 2.

³⁰*Id.*

³¹*Id.*

³²Mokdad et al., *supra* note 11, at 1451.

³³*Id.*

³⁴TAJWAR TAHER, VEGGIE RX: 2019-2020 PROGRAM RESULTS SUMMARY 5 (Ecole Copen ed., 2021).

consumption of fruits and vegetables dramatically affects health.³⁵ Diets low in fruit and vegetables correlate directly to chronic illness.³⁶ Globally, diets low in fruit are higher risk factors for the percentage of deaths than even malaria or HIV.³⁷ Poor diets also lead to increased hospitalizations, emergency room visits, and higher health care costs.³⁸ In the United States, disparities in fruit and vegetable access and consumption run along divisions in income, race, and ethnicity.³⁹

Medicare, Medicaid, and CHIP provide care to vulnerable groups,⁴⁰ and can be used as tools to address and prevent diet-related conditions. To understand how Medicare, Medicaid, and CHIP can confront diet-related chronic diseases, the structure, history, and evolution of these programs must be critically examined. Medicare is a federal program that primarily serves Americans over the age of sixty-five.⁴¹ Medicare also provides care for patients requiring kidney dialysis or kidney transplants regardless of age.⁴² Medicare is comprised of four subprograms: Part A, Part B, Part C, and Part D.⁴³ Part A, which provides hospital insurance and inpatient coverage, is generally free.⁴⁴ Part B, which covers outpatient medical coverage, and Part D, which covers prescription drugs, generally require premiums.⁴⁵ Part C refers to Medicare Advantage Plans, which are private-public partnerships.⁴⁶ These plans have become increasingly common in recent years and now insure nearly half of all Medicare participants.⁴⁷ Medicaid is a means-tested welfare program that provides health insurance for those of low socioeconomic status.⁴⁸ Medicaid provides medical and long-term care to more than twenty-two percent of the United States.⁴⁹ This program is vital to people from disadvantaged backgrounds, including members of racial and ethnic minorities,⁵⁰ those of low socioeconomic status,⁵¹ and those from disadvantaged rural⁵² areas.

³⁵See generally M. A. Van Duyn & Elizabeth Pivonka, *Overview of the Health Benefits of Fruit and Vegetable Consumption for the Dietetics Professional: Selected Literature*, 100 J. AM. DIETETIC ASS'N. 1511, 1511 (2000).

³⁶GARFIELD ET AL., *supra* note 13, at 2.

³⁷KATHERINE LEACH-KEMON, *THE GLOBAL BURDEN OF DISEASE: GENERATING EVIDENCE, GUIDING POLICY* 14 (Univ. of Wash. 2013) (http://www.healthdata.org/sites/default/files/files/policy_report/2013/GBD_GeneratingEvidence/IHME_GBD_GeneratingEvidence_FullReport.pdf).

³⁸See Hilary K. Seligman et al., *Exhaustion of Food Budgets at Month's End and Hospital Admissions for Hypoglycemia*, 33 HEALTH AFF. 116 (2014); Sanjay Basu et al., *The Monthly Cycle of Hypoglycemia: An Observational Claims-based Study of Emergency Room Visits, Hospital Admissions, and Costs in a Commercially Insured Population*, 55 MED. CARE 630 (2017); Sandra P. Garcia et al., *Incremental Health Care Costs Associated with Food Insecurity and Chronic Conditions Among Older Adults*, 15 PREVENTING CHRONIC DISEASE 1 (2017).

³⁹PATRICIA CRAWFORD ET AL., *THE ROLE OF LAW AND POLICY IN ACHIEVING THE HEALTHY PEOPLE 2020 NUTRITION AND WEIGHT STATUS GOALS OF INCREASED FRUIT AND VEGETABLE INTAKE IN THE UNITED STATES* 9 (2018); Belanger et al., *supra* note 1, at 1.

⁴⁰CTR. FOR MEDICARE & MEDICAID SERV., *supra* note 25, at 4; Artiga et al., *supra* note 24.

⁴¹PAUL J. FELDSTEIN, *HEALTH POLICY ISSUES: AN ECONOMIC PERSPECTIVE ON HEALTH REFORM* 112 (Health Admin. Press, 7th ed. 2021).

⁴²*Id.*

⁴³CTRS. FOR MEDICARE & MEDICAID SERVS, *supra* note 8, at 1-2.

⁴⁴*Id.* at 1.

⁴⁵*Id.* at 1-2.

⁴⁶*Id.* at 2.

⁴⁷Meredith Freed et al., *Medicare Advantage in 2022: Enrollment Update and Key Trends*, KAISER FAM. FOUND. (Aug. 25, 2022) <https://www.kff.org/medicare/issue-brief/medicare-advantage-in-2022-enrollment-update-and-key-trends/> [<https://perma.cc/Y8DL-EC23>].

⁴⁸Feldstein, *supra* note 40, at 135.

⁴⁹*Id.*

⁵⁰THE MEDICAID AND CHIP PAYMENT AND ACCESS COMM'N, *RACIAL AND ETHNIC DISPARITIES IN MEDICAID: AN ANNOTATED BIBLIOGRAPHY* 1 (The Medicaid and CHIP Payment and Access Comm'n ed., 2021), <https://www.macpac.gov/wp-content/uploads/2021/04/Racial-and-Ethnic-Disparities-in-Medicaid-An-Annotated-Bibliography.pdf> [<https://perma.cc/A9UJ-A7QS>].

⁵¹FELDSTEIN, *supra* note 41, at 135.

⁵²THE MEDICAID AND CHIP PAYMENT AND ACCESS COMM'N, *MEDICAID AND RURAL HEALTH* 1 (The Medicaid and CHIP Payment and Access Comm'n ed., 2021), <https://www.macpac.gov/wp-content/uploads/2021/04/Medicaid-and-Rural-Health.pdf>.

More than sixty-one percent of Medicaid's beneficiaries identify as Black, Hispanic, Asian American, or as another non-white racial or ethnic minority.⁵³ Medicaid also dedicates resources to providing care to pregnant women, low-income children, and persons who are blind or otherwise disabled.⁵⁴ CHIP is designed to provide health insurance to children from low-income families.⁵⁵ CHIP covers 6.87 million children,⁵⁶ most of whom are from disadvantaged backgrounds.⁵⁷ Each state runs its own CHIP program; these programs are often interconnected with Medicaid.⁵⁸

The inclusion of preventive medicine in Medicare, Medicaid, and CHIP

Since their establishments, Medicare, Medicaid, and CHIP have evolved to combat new challenges and to serve the expanding needs of their patient populations. Over the last two decades, these programs have evolved specifically to include more preventive medicine.⁵⁹ Preventive medicine improves the welfare of patients and decreases the financial burden on the overall health system.⁶⁰ In turn, this lower financial burden allows health providers to better allocate resources.

For example, in 2005, the Secretary of Health and Human Services (HHS) provided that “[s]eniors who embrace prevention can literally add years to their lives.”⁶¹ In the same press conference, the Medicare administrator and heads of the American Cancer Society, American Diabetes Association, and American Heart Association expressed support for turning Medicare into a “prevention-oriented program” thereby “saving thousands of lives and billions of dollars in avoidable medical expenses.”⁶²

In the years following, bipartisan groups worked to expand preventive medicine, and President Obama dramatically expanded preventive medicine in the Affordable Care Act (ACA).⁶³ After the ACA, Medicare and Medicaid expanded to cover smoking cessation treatments⁶⁴ and screenings that help providers to identify their patients' diseases early.⁶⁵ Today, Medicare, Medicaid, and CHIP cover a wide range of preventive services.⁶⁶

⁵³*Id.* at 1.

⁵⁴FELDSTEIN, *supra* note 41, at 126.

⁵⁵*Id.* at 129.

⁵⁶CTR. FOR MEDICARE & MEDICAID SERV., *supra* note 23, at 3.

⁵⁷TRICIA BROOKS & ALLEXA GARDNER, SNAPSHOT OF CHILDREN WITH MEDICAID BY RACE AND ETHNICITY, 2018 1 (Georgetown Univ. Health Pol'y Inst. 2020), <https://ccf.georgetown.edu/wp-content/uploads/2020/07/Snapshot-Medicaid-kids-race-ethnicity-v4.pdf> [<https://perma.cc/U8TR-7PSE>].

⁵⁸CHIP State Program Information, MEDICAID.GOV (last accessed Oct. 24, 2022), <https://www.medicaid.gov/chip/state-program-information/index.html> [<https://perma.cc/QG3A-3H4M>].

⁵⁹See generally, Ctr. Medicare & Medicaid Serv., HISTORY (last accessed Dec. 1, 2022), <https://www.cms.gov/About-CMS/Agency-Information/History> [<https://perma.cc/J3VM-JFP>].

⁶⁰Ctr. Medicare & Medicaid Serv., *supra* note 9.

⁶¹Jim Abrams, *Medicare: An Ounce of Prevention*, CBS NEWS (Jan. 10, 2005), <https://www.cbsnews.com/news/medicare-an-ounce-of-prevention-8230/> [<https://perma.cc/Q5R2-5X6U>].

⁶²*Id.*

⁶³Ctr. Medicare & Medicaid Serv., *supra* note 9.

⁶⁴*Id.*

⁶⁵*Id.*

⁶⁶See generally, CTR. FOR MEDICARE & MEDICAID SERV., YOUR GUIDE TO MEDICARE PREVENTIVE SERVICES (Ctr. for Medicare & Medicaid Serv. eds., 2021), <https://www.medicare.gov/sites/default/files/2021-08/10110-Your-Guide-to-Medicare-Preventive-Services.pdf> [<https://perma.cc/GN67-HWA7>]; Alexandra Gates et al., *Coverage of Preventive Services for Adults in Medicaid*, KAISER FAM. FOUND. (Nov. 13, 2014), <https://www.kff.org/medicaid/issue-brief/coverage-of-preventive-services-for-adults-in-medicaid/view/print/> [<https://perma.cc/D6TE-K52T>]; *Preventive care benefits for children*, HEALTH CARE.GOV (last accessed Oct. 24, 2022) <https://www.healthcare.gov/preventive-care-children/> [<https://perma.cc/6S2D-3BAZ>].

How diet-related chronic diseases impact Medicare, Medicaid, and CHIP

Improving the diets of Medicare and Medicaid patients could drastically improve human welfare and reduce costs in already cash-strapped federal health programs. Presently, the U.S. spends more on medical care than any other country, and health expenditures continue to grow.⁶⁷ Over the last fifty years, health care costs have risen for the nation from five percent of GDP in 1960 to nearly eighteen percent of GDP in 2016.⁶⁸ Governments at the federal, state, and local level pay the majority of US health expenditures.⁶⁹ As Medicare and Medicaid have grown to provide care to more patients, both programs have become major parts of the federal budget.⁷⁰ In 2019, Medicare spent a total of \$799.4 billion.⁷¹ In 2020, Medicare had 62.8 million enrollees—54.5 million elderly and 8.3 million disabled persons.⁷² The United States' elderly population is estimated to considerably increase over the next three decades, to eighty-eight million in 2050.⁷³ And as the elderly population grows, Medicare spending will continue to increase.⁷⁴ Medicaid has also grown over the years and now covers more patients than does Medicare.⁷⁵ As of 2020, Medicaid covered 75.3 million people—around one in every five Americans.⁷⁶ As Medicaid has expanded to provide services to more patients, its share of the federal budget has increased substantially.⁷⁷ In 1985, Medicaid covered twenty million people, and the program consumed 2.4 percent of the federal budget.⁷⁸ In 2020, the program consumed nine percent of the budget.⁷⁹

Systemic diet-related health issues contribute directly to these high costs.⁸⁰ The United States spends more than one trillion dollars annually on direct medical expenses generated by diet-related health conditions.⁸¹ For comparison, direct spending on diet-related health conditions in the U.S. is comparable to the entire GDP of Indonesia or the Netherlands.⁸² Designing effective systems to improve health and well-being will reduce the burden that diet-related health conditions place upon our health system.⁸³

The role of diet in preventive medicine

Diet is an essential component of preventive medicine. The root of many health challenges lies in SDOHs.⁸⁴ These determinants are often present and detectable long before a patient is diagnosed

⁶⁷FELDSTEIN, *supra* note 41, at 31.

⁶⁸MARIA ELENA RODRIGUEZ ET AL., PRODUCE PRESCRIPTION PROGRAMS US FIELD SCAN REPORT: 2010-2020 7 (Wholesome Wave & DAISA Enter. 2021).

⁶⁹CTR. FOR MEDICARE & MEDICAID SERV., NHE FACT SHEET (Ctr. for Medicare & Medicaid Serv. 2020). The federal government pays 36.3% of total health spending in the U.S. State and local governments pay 14.3% of total health spending. *Id.*

⁷⁰FELDSTEIN, *supra* note 41, at 113, 125.

⁷¹CTR. FOR MEDICARE & MEDICAID SERV., NHE FACT SHEET (Ctr. for Medicare & Medicaid Serv. 2020).

⁷²CTR. FOR MEDICARE & MEDICAID SERV., CMS FAST FACTS (Ctr. for Medicare & Medicaid Serv. 2021), <https://data.cms.gov/sites/default/files/2022-08/4f0176a6-d634-47c1-8447-b074f014079a/CMSFastFactsAug2022.pdf> [<https://perma.cc/A9VG-7CLK>].

⁷³FELDSTEIN, *supra* note 41, at 114.

⁷⁴FELDSTEIN, *supra* note 41, at 114-15.

⁷⁵*Id.* at 125.

⁷⁶*Id.*; CTR. FOR MEDICARE & MEDICAID SERV., *supra* note 68, at 1.

⁷⁷FELDSTEIN, *supra* note 41, at 135, 139.

⁷⁸*Id.* at 135.

⁷⁹ROBIN RUDOWITZ ET AL., MEDICAID FINANCING: THE BASICS 9 (Kaiser Fam. Found. 2021), <https://files.kff.org/attachment/Issue-Brief-Medicaid-Financing-The-Basics> [<https://perma.cc/VA94-5GFJ>].

⁸⁰TAHER, *supra* note 34, at 5 (describing how elderly persons often face diseases such as diabetes, hypertension, and arthritis which are significantly linked to food insecurity); EMILY HENNESSEE, VEGGIE RX IN THE 2018 FARM BILL 4 (Johns Hopkins Ctr for a Livable Future 2020).

⁸¹GARFIELD et al., *supra* note 13, at 2; HENNESSEE, *supra* note 80 at 4 (“The total cost of obesity, including related cancers, diabetes, cardiovascular disease, other obesity-related conditions is estimated to be around \$1.72 trillion” annually. This is approximately nine percent of the U.S. total GDP).

⁸²CIA, *Field Listing - GDP (official exchange rate)*, <https://www.cia.gov/the-world-factbook/field/gdp-official-exchange-rate/> (last visited Oct. 23, 2022) [<https://perma.cc/G6MK-J42S>].

⁸³CASS R. SUNSTEIN, SIMPLER: THE FUTURE OF GOVERNMENT 76 (Simon & Schuster eds., 2013).

⁸⁴Belanger et al., *supra* note 1, at e69(2).

with a long-term chronic disease.⁸⁵ By interfering with these social and environmental risk factors, governments can reduce poor health outcomes and staunch the development of preventable diseases.⁸⁶ Improving Americans' diets would save lives while reducing medical costs and increasing productivity,⁸⁷ and one way to catalyze diet improvement is to institute increases in fruit and vegetable consumption.

Fruit and vegetable consumption has been shown to significantly improve health and decrease the risk of chronic disease.⁸⁸ Consuming fruit and vegetables lowers the risk of chronic diseases such as diabetes, cardiovascular disease, obesity, and some cancers.⁸⁹ (Approximately half of all adults in the United States have at least one diet-related chronic disease, such as cardiovascular disease, type 2 diabetes, or obesity.⁹⁰) Additionally, fruit and vegetables lower the risk of mortality from preexisting cardiovascular disease.⁹¹ In the United States, more than a fifth of adult deaths caused by coronary heart disease are associated with low fruit or vegetable intake.⁹²

Consuming fruit and vegetables also dramatically impacts the health of specific patient populations. Prediabetic people who consume fruit and vegetables generally have lower A1C levels, a predictor of diabetes.⁹³ Pregnant women who consume fruit and vegetables are associated with positive birth outcomes,⁹⁴ whereas poor diets during pregnancy have been linked to increased risk of birth complications including preterm birth, diabetes, hypertension, and increased gestational weight gain.⁹⁵ Elderly patients who consume just one serving of leafy green vegetables per day experience slower declines in brain function.⁹⁶ Fruit and vegetable consumption is also linked to decreased depression.⁹⁷

In general, however, Americans do not consume adequate quantities of fruit and vegetables.⁹⁸ Only one out of every ten American adults consumes the recommended amount of fruit and vegetables daily.⁹⁹ And there exist considerable disparities in fruit and vegetable consumption across groups of varying socio-economic status, race, ethnicity, and geography.¹⁰⁰ Nutritional disparities result in poorer health

⁸⁵*Id.* at e69(1)

⁸⁶*Id.* at e69(3).

⁸⁷SUNSTEIN, *supra* note 83, at 76.

⁸⁸See generally Van Duyn & Pivonka, *supra* note 35.

⁸⁹GARFIELD ET AL., *supra* note 13, at 2.

⁹⁰HENNESSEE, *supra* note 80, at 4.

⁹¹Erika S. Trapl et al., *Dietary Impact of Produce Prescriptions for Patients with Hypertension*, 15 PREVENTING CHRONIC DISEASE: PUB. HEALTH RSCH., PRAC., AND POL'Y 1, 1 (2018).

⁹²GARFIELD et al., *supra* note 13, at 2.

⁹³Bryce et al., *supra* note 20, at 176.

⁹⁴Erika S. Trapl et al., *Mixed Methods Evaluation of a Produce Prescription Program for Pregnant Women*, 12 J. HUNGER & ENV'T NUTRITION 529, 529 (2017).

⁹⁵*Id.*

⁹⁶Martha Clare Morris et al., *Nutrients and Bioactives in Green Leafy Vegetables and Cognitive Decline*, 90 AM. ACAD. NEUROLOGY 214, 214 (2018).

⁹⁷Faezeh Saghafian et al., *Fruit and Vegetable Consumption and Risk of Depression: Accumulative Evidence From an Updated Systematic Review and Meta-analysis of Epidemiological Studies*, 119 BRIT. J. NUTRITION 1087 (2018).

⁹⁸Cavanagh et al., *supra* note 15, at 2636.

⁹⁹CRAWFORD ET AL., *supra* note 39, at 9. In 2015, only twelve percent of adults in the U.S. were eating recommended amounts of fruit and only nine percent were eating recommended amounts of vegetables. Trapl et al., *Dietary*, *supra* note 91, at 1. Americans only consume an average of 1.4 cups of vegetables and 0.9 cups of fruit per day. This is below the amount recommended by the USDA and other health organizations. FOOD SERV. RSCH. GRP., FOOD PATTERNS EQUIVALENTS INTAKES BY AMERICANS 5 (2018) https://www.ars.usda.gov/ARSUserFiles/80400530/pdf/DBrief/20_Food_Patterns_Equivalents_0304_1516.pdf [<https://perma.cc/G3S9-GW39>]. The USDA recommends 1.5-2 cups of fruit and 2-3 cups of vegetables per day. Seung Hee Lee et al., *Adults Meeting Fruit and Vegetable Intake Recommendations — United States, 2019*, CDC MORBIDITY & MORTALITY WKLY. REP. at 1. <https://www.cdc.gov/mmwr/volumes/71/wr/pdfs/mm7101a1-H.pdf> [<https://perma.cc/L9PN-CHU6>].

¹⁰⁰*Id.*

outcomes in disadvantaged communities than in wealthy ones.¹⁰¹ People who struggle with food security, as do many Medicare¹⁰² and Medicaid¹⁰³ patients, are less likely to consume the recommended portions than the average American.¹⁰⁴ Hispanic and Black participants in Medicaid have even higher rates of food insecurity than average.¹⁰⁵ Likewise, Hispanic and Black Medicare beneficiaries have high rates of food insecurity.¹⁰⁶ (Food insecurity is significantly associated with every major chronic disease: hypertension, stroke, cancer, asthma, CHD, hepatitis, diabetes, arthritis, kidney disease, and chronic obstructive pulmonary disease.¹⁰⁷) And low-income individuals are the least likely to meet guidelines for daily servings of fruit and vegetables.¹⁰⁸

Other groups suffering from nutritional disparity include patients living in rural environments, who have higher risk of diet-related diseases such as diabetes, hypertension, and asthma.¹⁰⁹ Elderly people are also especially at risk for poor diets and food insecurity;¹¹⁰ food insecurity increases the health care costs of older adults by an average of eleven percent.¹¹¹ Finally, children are not immune from nutritional disparity, and are in fact especially vulnerable to it; one out of every ten children between the ages of two and seventeen in the United States do not consume any fruits or vegetables daily.¹¹² The Council on Community Pediatrics has shown that poverty and food insecurity hurt self-regulation and executive function and cause toxic stress.¹¹³

Diets absent of fruit and vegetables are linked with negative health consequences because of the nutritional deficiencies resulting from that absence, as well as the deficiencies affirmatively generated by foods consumed in the stead of fruits and vegetables. People who cannot afford fruit and vegetables often increase consumption of foods that are energy-dense and nutrient-deficient.¹¹⁴ Consuming nutrient-deficient foods can, in turn, generate further health problems.

Indeed, cost—rather than taste—is cited as a primary barrier to adequate fruit and vegetable consumption;¹¹⁵ very few people do not like fruit or vegetables as a general rule.¹¹⁶ Many low-income

¹⁰¹Belanger et al., *supra* note 1, at 1.

¹⁰²Olivia Dean, Lynda Flowers & Claire Noel-Miller, *Food Insecurity Among Medicare's 65+: Stark Racial and Ethnic Disparities*, AARP: THINKING POL'Y (Mar. 11, 2020), <https://blog.aarp.org/thinking-policy/food-insecurity-among-medicare-65-stark-racial-and-ethnic-disparities> [<https://perma.cc/C2AZ-G7JX>]. Approximately one in ten Medicare Beneficiaries are food insecure and disadvantaged racial and ethnic minorities have even higher rates of food insecurity. *Id.*

¹⁰³GARFIELD et al., *supra* note 13, at 14.

¹⁰⁴See CRAWFORD ET AL., *supra* note 39, at 9.

¹⁰⁵GARFIELD et al., *supra* note 13, at 15.

¹⁰⁶DEAN ET AL. *supra* note 104.

¹⁰⁷CHRISTIAN A. GREGORY & ALISHA COLEMAN-JENSEN, FOOD INSECURITY, CHRONIC DISEASE, AND HEALTH AMONG WORKING-AGE ADULTS 1-2 (U.S.D.A. Econ. Res. Serv. 2017) <https://www.ers.usda.gov/webdocs/publications/84467/err-235.pdf> [<https://perma.cc/6JF9-FTEB>].

¹⁰⁸Cavanagh et al., *supra* note 15, at 2636. Low-income groups consume less fruit and vegetables than high-income groups. Nicole D. White, *Produce Prescriptions, Food Pharmacies, and the Potential Effect on Food Choice*, 14 AM. J. LIFESTYLE MED. 366, 367 (2020).

¹⁰⁹Christine M. Burrington et al., *A Pilot Study of an Online Produce Market Combined with a Fruit and Vegetable Prescription Program for Rural Families*, 17 PREVENTATIVE MED. REP. 1, 1 (2020).

¹¹⁰See, DEAN et al., *supra* note 104. Medicare beneficiaries from historically disadvantaged racial and ethnic groups have even higher rates of food insecurity than the overall population of Medicare beneficiaries.

¹¹¹Sandra P. Garcia, Anne Haddix & Kevin Barnett, *Incremental Health Care Costs Associated with Food Insecurity and Chronic Conditions Among Older Adults*, 15 PREVENTING CHRONIC DISEASE: PUB. HEALTH RSCH., PRAC., AND POL'Y, 1, 3 (2018).

¹¹²CRAWFORD ET AL., *supra* note 39, at 9.

¹¹³See generally Am. Acad. of Pediatrics Council on Community Pediatrics, *Poverty and Child Health in the United States*, 137 PEDIATRICS 1, 1-2 (2016).

¹¹⁴Aiyer et al., *supra* note 12, at 922.

¹¹⁵See generally Nicole Darmon & Adam Drewnowski, *Contribution of Food Prices and Diet Cost to Socioeconomic Disparities in Diet Quality and Health: a Systematic Review and Analysis*, 73 Nutrition Rev. 643 (2015) (indicating that many individuals would like to eat each fruit and vegetable, but cannot afford these foods).

¹¹⁶Trapl et al., *Mixed*, *supra* note 94, at 536 (finding that two out of seventy-five participants said they do not like fruit and vegetables and only one out of seventy-five participants said that their family does not like fruit and vegetables).

individuals simply have trouble obtaining and consuming fresh fruit and vegetables.¹¹⁷ More than thirty-seven million people in the U.S. live in food-insecure households.¹¹⁸ Fresh produce is expensive for economically disadvantaged families who often opt instead for inexpensive processed foods.¹¹⁹ A 2005 study showed that low-income families have to allocate an estimated forty-three to seventy percent of their food budget to fruit and vegetables to meet dietary guidelines.¹²⁰ Other complex factors inhibiting access to fruits and vegetables include education, motivation, incentives, nutritional knowledge, and cooking skills.¹²¹ Many people also struggle to access healthy foods because they are not as easily available in some communities.¹²²

To address these diet-related issues and the health problems they precipitate, Medicare, Medicaid, and CHIP should curtail the barriers that prevent people from purchasing and consuming fruit and vegetables. Any policy proposals should focus on empowering individuals and should realign government programs to the actual needs of the American people. For next steps, the federal government can look to the ways in which governments, nonprofits, and researchers attempt to improve diets.

Comparison of diet-improvement efforts

A number of countries, including the United States, have used taxes or subsidies to influence dietary choices.¹²³ Subsidizing or taxing specific food products changes the price signal for consumers.¹²⁴ The resulting lower or higher price can increase or decrease consumption. In terms of practical application, food taxes are fraught with challenges, while subsidies are more promising.¹²⁵

Food taxes

In recent years, many countries have established taxes on sugary beverages, but only a few have taxed or subsidized other food products.¹²⁶ In theory, taxes could disincentivize the purchase of unhealthy foods such as sugary beverages or junk food.¹²⁷ But junk food taxes are often met with political pushback.¹²⁸ For example, in 2011, Denmark began taxing saturated fats; the country swiftly repealed this tax in

¹¹⁷Cavanagh et al., *supra* note 15, at 2636.

¹¹⁸TAHER, *supra* note 34, at 4.

¹¹⁹Trapl et al., *Dietary, supra* note 92, at 1.

¹²⁰Diana Cassady, Karen M. Jetter & Jennifer Culp, *Is Price a Barrier to Eating More Fruits and Vegetables for Low-Income Families?*, 107 J. AM. DIETETIC ASS'N 1909, 1909 (2007).

¹²¹Dariusz Mozaffarian et al., *Role of Government Policy in Nutrition—Barriers to and Opportunities for Healthier Eating*, 361 SCI. & POL. NUTRITION 1, 1 (2018).

¹²²See generally PAUL DUTKO, MICHELE VER PLOEG & TRACEY FARRIGAN, CHARACTERISTICS AND INFLUENTIAL FACTORS OF FOOD DESERTS (U.S.D.A. Econ. Res. Serv. 2012) https://www.ers.usda.gov/webdocs/publications/45014/30940_err140.pdf [<https://perma.cc/786E-UTJ5>].

¹²³See, e.g., Tony Blakely et al., *The Effect of Food Taxes and Subsidies on Population Health and Health Costs: A Modelling Study*, 5 LANCET PUB. HEALTH 404, 404 (2020).

¹²⁴See *id.* at 412.

¹²⁵Compare Daniel Kim & Ichiro Kawachi, *Food Taxation and Pricing Strategies to “Thin Out” the Obesity Epidemic*, 30 AM. J. PREVENTIVE MED. 430, 433-34 (2006) (listing potential barriers to implementing junk food taxes), with Patricia J. Lucas, Tricia Jessiman & Ailsa Cameron, *Healthy Start: The Use of Welfare Food Vouchers by Low-Income Parents in England*, 14 Soc. POL'Y & Soc'y 457, 458 (2015) (noting successful use of food subsidies).

¹²⁶Tony Blakely, Christine Cleghorn, Anja Mizdrak, Wilma Waterlander, Nhung Nghiem, Boyd Swinburn, Nick Wilson & Cliona Ni Mhurchu, *The Effect of Food Taxes and Subsidies on Population Health and Health Costs: A Modelling Study* 404 (5 THE LANCET PUB. HEALTH 2020).

¹²⁷Mozaffarian et al., *supra* note 125, at 2.

¹²⁸Daniel Kim & Ichiro Kawachi, *Food Taxation and Pricing Strategies to “Thin Out” the Obesity Epidemic*, 30 AM. J. PREVENTIVE MED. 430, 433-34 (2006). Two main challenges exist for junk food taxation. First, many special interest groups and moneyed interests are strongly opposed to food tax implementation. Second, food taxes can potentially become regressive if improperly designed. *Id.*

2013.¹²⁹ Food taxes also face formidable political challenges from interest groups.¹³⁰ In Mexico, Brazil, Fiji, Chile, Canada, Spain, and England, conflicts of interest consistently undermine policy attempts.¹³¹

Some academics and government leaders have suggested a combination of taxes and subsidies. One New Zealand model study compared various taxes and subsidies and found that a combined fruit and vegetable subsidy and sugar tax would most greatly decrease health care costs.¹³² Such a policy might optimize health, but it would likely run into the same political opposition as food taxes.

Food taxes in the United States

Food taxes are a poor fit for the United States, a nation whose national identity is premised upon the spirit of liberty and choice. And economists view choice as a fundamental market principle.¹³³ For illustration of the likely inefficacy of junk food taxation, consider Michael Bloomberg's 2012 attempt to ban the sale of sodas larger than sixteen ounces in specific locations across New York City.¹³⁴ His proposal faced backlash from across the political spectrum. Conservatives lambasted Bloomberg as a "nanny" while liberal comedian Jon Stewart declared "No! ... I love this idea you have of banning sodas larger than sixteen ounces. It combines the draconian government overreach people love with the probable lack of results they expect."¹³⁵

The United States should adopt health food subsidies instead of junk food taxes. Food taxes are a poor policy fit for the United States,¹³⁶ but governments can still effort to design policies that respect individuals and help them to make healthy lifestyle choices. In fact, governments cannot remain neutral in preference formation.¹³⁷ Significant challenges such as poverty shape choices and preferences.¹³⁸ Impoverished people then make "market choices" that are direct products of deprivation.¹³⁹ These choices are also shaped by decades of governmental policy. For decades, the United States government has stimulated the production and distribution of starchy staple commodities and shelf-stable processed foods.¹⁴⁰ Government policies helped create the current diet-related health crisis; they should now incentivize the consumption of healthy foods. Healthy food subsidies afford people access to quality nutrition.¹⁴¹ In diverse communities across the United States, health care-linked produce subsidies have empowered people to make positive health choices. These produce prescription subsidies have the potential to make a broader impact.

Produce prescriptions in the United States: proven to improve nutrition

In the United States, nonprofits, governments, and health care providers have created partnerships and designed programs that successfully improve nutrition and health outcomes. These programs allow

¹²⁹Blakely et al., *supra* note 127, at 404.

¹³⁰Mozaffarian et al., *supra* note 125, at 7.

¹³¹*Id.*

¹³²Blakely et al., *supra* note 125, at 410.

¹³³DOUGLAS E. HOUGH, *IRRATIONALITY IN HEALTH CARE: WHAT BEHAVIORAL ECONOMICS REVEALS ABOUT WHAT WE DO AND WHY* 86 (Stanford Univ. Press 2013).

¹³⁴SUNSTEIN, *supra* note 83, at 191.

¹³⁵*Id.*

¹³⁶Whether or not junk food taxes are regressive or ultimately progressive is a heavily debated topic. Critics point to the fact that low-income individuals tend to consume large amounts of junk food and that junk food taxes would ultimately fall upon them. Some junk food tax proponents then suggest using tax revenue to subsidize healthier food options. This article instead proposes fruit and vegetable subsidies. In contrast to taxes and bans, subsidies are less likely to run into political challenges, are a better fit for American culture, and are less controversial.

¹³⁷CASS R. SUNSTEIN, *FREE MARKETS AND SOCIAL JUSTICE* 5 (Oxford Univ. Press 1997).

¹³⁸*Id.*

¹³⁹*Id.* at 8.

¹⁴⁰Mozaffarian et al., *supra* note 125, at 1.

¹⁴¹Cavanagh et al., *supra* note 15, at 2637.

clinical health providers to prescribe subsidized fresh fruit and vegetables to patients. Health care providers prescribe produce to address food insecurity¹⁴² as well as a range of diet-affected health conditions including prediabetes, diabetes, and hypertension.¹⁴³ These programs are designed to link nutrition and health care and are commonly referred to as “produce prescriptions,” “veggie scripts,” or “veggie Rx.”¹⁴⁴ Numerous studies have demonstrated that produce prescriptions improve diets and health care outcomes.¹⁴⁵

Produce prescriptions are successful because they address two barriers to fruit and vegetable consumption. First, they make healthy produce more affordable.¹⁴⁶ Second, they educate and motivate people to make lasting dietary changes. Affordability and nutrition-related education have been shown to increase the consumption of fruit and vegetables.¹⁴⁷ Produce prescriptions allow people to afford healthy diets. Subsidies allow people to make dietary changes irrespective of income level. Many highly nutritious fruits and vegetables, such as berries, are expensive; produce prescriptions empower patients to purchase otherwise-unaffordable nutritious and tasty foods such as raspberries, grapes, and blueberries.¹⁴⁸ Additionally, health care providers can use produce prescriptions to educate and motivate patients while empowering them to change their diets.¹⁴⁹ Before providing a produce prescription, health care providers educate patients about the importance of fruit and vegetable consumption.¹⁵⁰ Research shows that advice from medical professionals helps motivate patients to make and sustain behavioral change.¹⁵¹ Lasting dietary change can be difficult. People are more likely to follow the advice of individuals who are trustworthy, confident, and have special expertise.¹⁵² Americans continue to hold health care providers in this type of high esteem.¹⁵³

Health care providers have implemented many produce prescription programs across the United States; extensive research reveals the benefits of these programs.¹⁵⁴ Nonprofit organizations, farmers’ markets, and health clinics initially developed produce prescription programs in rural, urban, and Native American communities.¹⁵⁵ Produce prescriptions have been implemented in at least thirty-nine states, the Navajo Nation, and the District of Columbia.¹⁵⁶ Most produce prescription programs have been run by nonprofit organizations. While these programs have been very successful in improving community health outcomes, nonprofits generally have limited funds as they often rely on short-term private or public grants.¹⁵⁷ As a result, nonprofits have struggled to sustain produce prescription programs long-term. Despite funding limitations, the number of produce prescription programs has substantially increased in recent years,¹⁵⁸ although they are still only available in a limited number of communities.

¹⁴²GARFIELD ET AL., *supra* note 12, at 1.

¹⁴³*Id.*

¹⁴⁴HENNESSEE, *supra* note 80, at 3.

¹⁴⁵GARFIELD ET AL., *supra* note 12, at 4-6.

¹⁴⁶Cavanagh et al., *supra* note 15, at 2637.

¹⁴⁷*Id.* at 2636-37.

¹⁴⁸Lucas et al., *supra* note 126, at 463.

¹⁴⁹Cavanagh et al., *supra* note 15, at 2637. In particular, this Article explains that health care providers may influence expectations of how fruit and vegetables can improve health and that providers may also influence values of fruit and vegetable consumption. *Id.*

¹⁵⁰*Id.* at 2637; HENNESSEE, *supra* note 80, at 5.

¹⁵¹HENNESSEE, *supra* note 80, at 5.

¹⁵²CASS R. SUNSTEIN, CONFORMITY: THE POWER OF SOCIAL INFLUENCES 6 (2019).

¹⁵³Mozaffarian et al., *supra* note 125, at 4.

¹⁵⁴GARFIELD ET AL., *supra* note 12, at 3-4.

¹⁵⁵*Id.* at 3.

¹⁵⁶RODRIGUEZ et al., *supra* note 78, at 10-13. For a comprehensive examination of existing nonprofit-implemented produce prescription programs, see generally *id.*

¹⁵⁷GARFIELD ET AL., *supra* note 12, at 4, 11.

¹⁵⁸RODRIGUEZ et al., *supra* note 78, at 4.

Researchers have partnered with nonprofit community organizations and local health departments to study the impact of these programs.¹⁵⁹ The resulting research reveals that these programs decrease blood pressure, reduce hemoglobin A1C levels in persons with diabetes, decrease depressive symptoms, and improve overall health.¹⁶⁰ Additionally, these programs have been shown to decrease food insecurity and improve the relationship between patients and health care providers.¹⁶¹

The federal government has provided support for produce prescription programs. Congress first considered supporting healthy eating programs in the 2002 Farm Bill.¹⁶² Initially, this investment came through the Healthy Incentives Pilot (HIP) and Food Insecurity Nutrition Incentive (FINI).¹⁶³ Now, the federal government provides funding through the Gus Schumacher Nutrition Incentive Program (GusNIP).¹⁶⁴ In the 2018 Farm Bill, the federal government allocated \$25 million towards produce prescription programs.¹⁶⁵ The federal government has also committed to raising funding to fifty-six million dollars by 2023.¹⁶⁶ In the 2021 American Rescue Plan Act, Congress increased produce prescription funding by \$40 million.¹⁶⁷ The federal government does not directly run produce prescription programs. Instead, the federal government funds nonprofit organizations as well as state and local agencies that implement and evaluate produce prescription programs.¹⁶⁸ These investments, however, are limited in nature and are not designed as a permanent public policy.¹⁶⁹

The benefits of incorporating produce prescriptions into Medicare, Medicaid, and CHIP

Produce prescriptions would positively impact a wide range of communities, but would especially benefit disadvantaged individuals—specifically many Medicare, Medicaid, and CHIP patients—and could help reduce health inequalities nationally. Research and testimonials show that produce prescriptions can improve health.

Impact on disadvantaged communities and individuals

Research indicates that including produce prescriptions in Medicare, Medicaid, and CHIP would help many of the most vulnerable members of our society.¹⁷⁰ Much of the early research on produce prescriptions is focused on statistical health improvements,¹⁷¹ and numerous studies conclude that

¹⁵⁹ *Id.* at 1-2.

¹⁶⁰ GARFIELD ET AL., *supra* note 12, at 4.

¹⁶¹ *Id.*

¹⁶² HENNESSEE, *supra* note 80, at 3.

¹⁶³ GARFIELD ET AL., *supra* note 12, at 3.

¹⁶⁴ *Id.* at 1, 3.

¹⁶⁵ White, *supra* note 103, at 367.

¹⁶⁶ *Id.*

¹⁶⁷ Press Release, USDA, NIFA Invests \$40M to Improve Dietary Health and Reduce Food Insecurity (June 1, 2022) <https://www.nifa.usda.gov/about-nifa/press-releases/usda-nifa-invests-40m-improve-dietary-health-reduce-food-insecurity> [perma.cc/X2QL-K4BW].

¹⁶⁸ HENNESSEE, *supra* note 80, at 3.

¹⁶⁹ Alyssa Auvinen et al, *Integrating Produce Prescriptions into the Health care System: Perspectives from Key Stakeholders*, 19 INT'L J. OF ENV'T RSCH. & PUB. HEALTH, Sept. 2, 2022, at 1, 2.

¹⁷⁰ Medicare and Medicaid provide care to more than one hundred million Americans including many disadvantaged people in our country. See CTR. FOR MEDICARE & MEDICAID SERV., YOUR GUIDE, *supra* note 8, at 1. Many of these people currently struggle with diet-related health conditions. DEP'T OF HEALTH AND HUM. SERV., WHAT'S MEDICARE, *supra* note 7, at 1; RUDOWITZ ET AL., 10 THINGS, *supra* note 8, at 1.; Many produce prescription studies have targeted specific low socio-economic status individuals who struggle to eat a healthy diet. Previous studies show that many of the people that meet these criteria are enrolled in Medicare or Medicaid. For example, in one study, eighty-three percent of participants were also beneficiaries of Medicare or Medicaid. Cavanagh et al., *supra* note 15, at 2638.

¹⁷¹ Anne Cafer et al., *Examining the Context, Logistics, and Outcomes of Food Prescription Programs: A Scoping Review*, 19 RSCH. SOC. & ADMIN. PHARMACY 57, 58 (2022).

produce prescription programs significantly improve health outcomes by empowering disadvantaged individuals to improve their diets.¹⁷² These studies reveal that produce prescriptions fortify health outcomes among racial and ethnic minorities,¹⁷³ underprivileged people in low-development rural areas,¹⁷⁴ elderly persons,¹⁷⁵ and children growing up in low socio-economic status families.¹⁷⁶ While no single policy will end inequality, produce prescriptions are a step forward in solving long-standing health inequalities.¹⁷⁷

Children also benefit significantly from produce prescription programs. Additionally, produce prescriptions have been shown to increase fruit and vegetable consumption among children.¹⁷⁸ Produce prescriptions allow families to purchase otherwise expensive soft fruits such as berries.¹⁷⁹ These desirable and nutritious foods are popular with children but are often too expensive for financially challenged families.¹⁸⁰

Finally, research shows that produce prescriptions decrease blood pressure, reduce body mass index scores, and reduce hemoglobin A1c levels in individuals with diabetes.¹⁸¹ Produce prescriptions have been associated with improvements in household food insecurity, self-reported health measures, social health, and number of medications.¹⁸²

Personal testimonies: produce prescriptions work

Personal testimonies shared during research also illuminate the benefits of produce prescriptions.¹⁸³ In one notable study, researchers in Cleveland, Ohio interviewed produce prescription participants to better understand the personal impact of these programs.¹⁸⁴ The researchers interviewed African American patients with variations in age, gender, clinic, and economic position.¹⁸⁵ Patients shared that the produce prescription program made them feel like the health care providers truly cared for them.¹⁸⁶ One patient described that the program showed her that “there is someone out there that does care that you do better with healthier eating.”¹⁸⁷ Patients also described how produce prescriptions improved their health and financial condition. One patient explained:

I went to the doctors and my blood pressure is down. And it’s because of the fruit and vegetables. This makes a huge difference for me. That’s money I didn’t have to spend on a blood pressure prescription—my husband is on 17 prescriptions so having one less to purchase really matters.¹⁸⁸

¹⁷²See GARFIELD ET AL., *supra* note 12, at 5-6.

¹⁷³See generally Cavanagh et al., *supra* note 15. Pilot projects have led to health improvements in a wide range of communities including Black and Indigenous communities. The Cavanagh study primarily benefitted Black Americans. See generally Leandra J. Jones et al., *Impact of a Fruit and Vegetable Prescription Program on Health Outcomes and Behaviors in Young Navajo Children*, CURRENT DEVS. NUTRITION 1, 1-7 (2020). The Jones study showed successful health outcomes in an Indigenous community.

¹⁷⁴See RODRIGUEZ et al., *supra* note 78, at 12-17.

¹⁷⁵TAHER, *supra* note 34, at 12.

¹⁷⁶GARFIELD ET AL., *supra* note 12, at 27-28.

¹⁷⁷*Id.* at 104.

¹⁷⁸Auvinen et al., *supra* note 181, at 1-2.

¹⁷⁹Lucas et al., *supra* note 126, at 463.

¹⁸⁰*Id.*

¹⁸¹GARFIELD ET AL., *supra* note 12, at 4.

¹⁸²TAHER, *supra* note 34, at 10-15.

¹⁸³See e.g., Allison V. Schlosser et al., “You Guys Really Care About Me...”: A Qualitative Exploration of a Produce Prescription Program in Safety Net Clinics, 34 J. GEN. INTERNAL MED. 2567, 2568 (2019). The Schlosser study is one such study. This study focused on largely older African American adults struggling with hypertension experiencing food insecurity in Cleveland, Ohio.

¹⁸⁴*Id.*

¹⁸⁵*Id.*

¹⁸⁶*Id.* at 2569.

¹⁸⁷*Id.*

¹⁸⁸TAHER, *supra* note 34, at 11.

Additionally, researchers have interviewed health care providers who provide produce prescriptions to patients.¹⁸⁹ Providers explain that produce prescription programs allow them to show that they truly care about their patients' health.¹⁹⁰ One pharmacist remarked that “[w]hen we do things like this, it shows a lot of effort on our part to help them, and that touches them.”¹⁹¹ Research suggests that health care providers avoid screening for food insecurity because providers feel like they currently have little to offer food-insecure patients.¹⁹² Produce prescriptions are a tangible and effective tool that health care professionals could use to care for food-insecure patients.

The cost-effectiveness of produce prescriptions

Including produce prescriptions in Medicare and Medicaid could save the United States billions of dollars in direct medical expenses¹⁹³ by decreasing the burden that diet-related chronic diseases impose upon the health care system. Poor diets burden the health care system through increased hospitalizations, emergency-room visits, and higher health care costs.¹⁹⁴ By decreasing the amount of money spent on preventable diet-related diseases, health care providers can refocus their time, energy, and resources on other formidable health challenges. And reducing avoidable burdens on the system will only become an increasingly important policy aim in the coming years and decades.

Including produce prescriptions would also decrease overall federal expenditures on treatments.¹⁹⁵ Taxpayers are already publicly paying the cost of health care for more than one in three Americans.¹⁹⁶ Produce prescriptions would redirect some expenditures from traditional treatment to fruit and vegetable production. As such, produce prescriptions could potentially decrease overall federal expenditures, but further research is needed to evaluate potential cost savings. Research should focus on produce prescriptions' potential impacts on all costs, including food subsidies, administrative costs, and health care staff time, data needs, and technology infrastructure.¹⁹⁷ Likewise, studies should estimate the benefits from all improvements to health, reduced burden on the health system from diet-related chronic diseases, and improved productivity.

A 2019 study concluded that including produce prescriptions in Medicare and Medicaid could save the United States \$39.7 billion in direct health care costs over an 18.3 year lifetime.¹⁹⁸ The study was based on the eighty-two million adults aged thirty-five to eighty who were enrolled in Medicare and Medicaid when the study was conducted.¹⁹⁹ The study calculated the 18.3 year lifetime based on the average age—68.1—of Medicare and Medicaid participants and their expected lifespan of 18.3 years.²⁰⁰ This study focused on type 2 diabetes and cardiovascular disease²⁰¹—two preventable diseases that most substantially burden the health care system. The study modeled the impacts of a thirty-percent produce prescription discount on fruits and vegetables for Medicare and Medicaid patients.²⁰² The thirty-percent

¹⁸⁹Schlosser et al., *supra* note 197, at 2568-9.

¹⁹⁰*Id.* at 2569.

¹⁹¹*Id.*

¹⁹²Aiyer et al., *supra* note 12, at 922.

¹⁹³See HENNESSEE, *supra* note 80, at 8.

¹⁹⁴Auvinen et al., *supra* note 181, at 1.

¹⁹⁵GARFIELD ET AL., *supra* note 12, at 4, 8. Research shows that produce prescriptions decrease blood pressure, reduce hemoglobin A1C levels, decrease depressive symptoms and improve overall health. All of these factors contribute to the high cost of medical care. *Id.*

¹⁹⁶See KEISLER-STARKEY & BUNCH, *supra* note 7, at 3.

¹⁹⁷See Auvinen et al., *supra* note 181, at 5.

¹⁹⁸Yujin Lee et al., *Cost-Effectiveness of Financial Incentives for Improving Diet and Health Through Medicare and Medicaid: A Microsimulation Study*, PLOS MED., Mar. 19, 2019, at 1, 1.

¹⁹⁹*Id.*

²⁰⁰*Id.*

²⁰¹*Id.* at 5, 7.

²⁰²*Id.* at 4.

subsidy was based on the subsidy used in the United States Department of Agriculture's (USDA's) Healthy Food Incentives Pilot.²⁰³

The Healthy Food Incentives Pilot was a randomized controlled trial within the Supplemental Nutrition Assistance Program (SNAP) to incentivize fruit and vegetable consumption.²⁰⁴ The study included formal health care, informal health care, and lost-productivity costs.²⁰⁵ Additionally, the study evaluated the human impact through quality-adjusted life years (QALYs), which measure the disease burden on both quality and quantity of life.²⁰⁶ The study evaluated expenses including implementation through adapting existing electronic benefits transfer systems and factored in the increased cost of setup in the initial year.²⁰⁷ The study factored in personnel, training, monitoring, and evaluation costs.²⁰⁸ To determine the effect of price changes on produce consumption, the researchers conducted a meta-analysis of interventional and prospective observational studies.²⁰⁹ The researchers estimated that a thirty percent fruit and vegetable subsidy in Medicare and Medicaid would increase mean intakes of fruit by approximately 0.4 servings per day and vegetables by approximately 0.4 servings per day.²¹⁰

The study concluded that produce prescriptions are at least as cost-effective in treating cardiovascular disease and diabetes as several existing drug treatments.²¹¹ The study further calculated that produce prescriptions would prevent 1.93 million cardiovascular events and 350,000 cardiovascular deaths over a lifetime.²¹² Additionally, the study found that individuals would gain 4.64 million quality-adjusted life years.²¹³ Overall, the study found that the net cost of the program would be \$68.8 billion over the 18.3 year lifetime.²¹⁴ After five years, the probabilities that fruit and vegetable incentives would be cost effective were 0.886 overall, 0.909 for Medicare, 0.506 for Medicaid, and 0.859 for dual-eligible beneficiaries.²¹⁵ Over the 18.3 year lifetime, the probability of fruit and vegetable incentives being cost effective was 1.00 for the overall subsidy as well as 1.00 in each of Medicare, Medicaid, and among dual-eligible beneficiaries.²¹⁶ The researchers found that the programs were cost-effective over a lifetime in one thousand out of one thousand simulations.²¹⁷

This study is informative, but further research is necessary. The study was strong as it used nationally representative data, included many costs, and used conservative estimates.²¹⁸ At the same time, this study has several limitations relevant to the policy recommendations of this Article. First, this study is a microsimulation using a simulated US population rather than a study with real participants. Second, this study only measured the health impacts of produce prescriptions on diabetes and cardiovascular disease.²¹⁹ While these are major drivers of federal health spending, many other diseases are also linked to low fruit and vegetable consumption. The researchers specifically noted that they neglected to evaluate the impact of cancer and other obesity-mediated conditions which could underestimate observed benefits.²²⁰ Beyond these diseases, fruit and vegetable consumption impacts many health outcomes

²⁰³*Id.*

²⁰⁴*Id.*

²⁰⁵*Id.* at 1.

²⁰⁶*Id.*

²⁰⁷*Id.* at 4, 8.

²⁰⁸*Id.* at 8.

²⁰⁹*Id.* at 6.

²¹⁰*Id.* at 4, 9.

²¹¹*Id.* at 15-16.

²¹²*Id.* at 2.

²¹³*Id.* at 1.

²¹⁴*Id.* at 1, 10.

²¹⁵*Id.* at 10.

²¹⁶*Id.* at 1, 10.

²¹⁷*Id.* at 10.

²¹⁸*See id.* at 4, 8-10, 16.

²¹⁹*Id.* at 16.

²²⁰*Id.*

from overweight²²¹ to brain longevity.²²² This study also failed to include the value of other less tangible benefits such as improved mental health and stronger patient-provider relationships. Some of these benefits may be difficult to quantify, but future studies will ideally measure a broader range of health benefits.

Third, after the COVID-19 pandemic, this study is out of date. Since the pandemic, the United States has experienced extensive inflation, and food prices have risen dramatically. Prices for drugs and clinical services have also increased. As a result, the financial details of this 2019 study are not up to date. Fourth, this study does not include CHIP in its analysis. Improved diets for children can improve executive function and development in childhood which puts children on a healthy track.²²³ Fifth, the study used a 30% subsidy. This subsidy rate may not be the ideal percentage. This percentage was based on a SNAP study rather than a study within Medicare, Medicaid, and CHIP.²²⁴ Before implementing a national program, researchers must analyze the optimal percentage subsidy to find a number that maximizes health benefits relative to public subsidy investment.

Other studies have also suggested that improved diets could result in substantial health care savings. One 2017 meta-study found that increasing produce consumption from below 0.5 cups per day to more than 1.5 cups per day could save \$1,568 per person annually in reduced costs from cardiovascular disease treatment.²²⁵ While this study was not focused on produce prescriptions specifically, it suggests that improved diets could dramatically reduce health care costs even when looking at a single metric such as cardiovascular disease.

Another study found that subsidizing fruit and vegetable consumption by thirty percent through SNAP over a lifetime would reduce the incidence of myocardial infarction by 1.4%, type 2 diabetes by 1.7%, and stroke by 1.2%.²²⁶ This study was not focused on produce prescriptions specifically, but the results suggest that subsidies alone, even without the additional benefits of produce prescriptions, could improve health.

Based on the existing research, it is unclear what the overall cost and health savings per enrollee would be. Nevertheless, existing research suggests that produce prescriptions could reduce health expenditures. Current research is being conducted to further determine how much money produce prescriptions could save.²²⁷ The Centers for Medicare and Medicaid Services (CMS) should conduct additional economic research through administrative programs and pilot projects as outlined later in this Article. In conducting research, CMS should note that many health care benefits may only show up in the long-term.

Finally, implementing produce prescriptions would require significant upfront financial investment.²²⁸ The United States government should consider nutrition a priority for national health, equity, and economic security.²²⁹ Historically, the government has underfunded the prevention of chronic diseases.²³⁰ These diseases dramatically decrease the health of people and greatly burden the economy.²³¹ Federal policy should recognize the gravity of chronic-diseases and respond by implementing a produce

²²¹Cavanagh et al., *supra* note 15, at 2636, 2639.

²²²See Morris et al., *supra* note 96, at 214.

²²³See Am. Acad. of Pediatrics Council on Community Pediatrics, *supra* note 114.

²²⁴Lee et al., *supra* note 212, at 4.

²²⁵Donglan Zhang et al., *Evidence of Dietary Improvement and Preventable Costs of Cardiovascular Disease*, 120 AM. J. CARDIOLOGY 1681, 1685 (2017).

²²⁶Sung Eun Choi et al., *Cost Effectiveness of Subsidizing Fruit and Vegetable Purchases Through the Supplemental Nutrition Assistance Program*, 52 AM. J. PREVENTIVE MED. 147, 150 (2017).

²²⁷*Produce prescriptions Can Save Money. New Project Asks How Much?*, UNIV. N.C. GILLINGS SCH. OF PUB. HEALTH (Dec. 14, 2021), <https://sph.unc.edu/sph-news/produce-prescriptions-can-save-money-new-project-asks-how-much/> [perma.cc/Z597-TQAY].

²²⁸See Lee et al., *supra* note 212, at 8.

²²⁹Mozaffarian et al., *supra* note 125, at 8.

²³⁰*Id.* at 6.

²³¹*Id.*

prescription program. Although many researchers have found consistent health benefits from produce prescription programs, few researchers have studied the economic effects of a national program. Future research should consider the wide-ranging benefits of produce prescriptions including decreased incidence of chronic diet-related diseases, improved productivity, and overall improvements to health.

Ultimately, health policy—and thus health care spending—in the United States has primarily focused on treating illness, not on preventing diseases and reconciling health disparities.²³² The United States health system does an excellent job of treating acute illnesses, but the system fails to prevent many diseases from developing.²³³ From a financial perspective, “22.5 percent of all medical expenditures are spent on just 1 percent of the population.”²³⁴ While combatting acute illness and reducing suffering is a noble goal, the United States should also work to prevent such chronic illnesses from developing in the first place. Although the United States has the highest per capita medical spending in the world, other countries have higher life expectancies and lower infant mortality rates.²³⁵ Health policy should focus on improving the population’s health and life expectancy.²³⁶ Lifestyle behaviors such as diet ultimately impact mortality rates, and are thus worthy investments.²³⁷

Comparing produce prescriptions with other food insecurity policies

Produce prescriptions constitute one possible approach to improving fruit and vegetable consumption nationwide. While produce prescriptions have been shown to improve outcomes across diverse communities, other policy proposals aimed at reducing diet-related chronic diseases exist. Although the federal government does not currently operate any direct produce prescription programs, the government does run other successful smaller-scale fruit and vegetable programs.

Existing federal nutrition programs

Most nutrition policies focus on the high cost of food. SNAP and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) play an important role in reducing food insecurity. These programs allow a wide range of food purchases to reduce overall hunger and meet basic needs. SNAP, WIC, and other nutrition assistance programs benefit millions of Americans and reduce food insecurity, but are not alone sufficient to solve the diet-related chronic disease crisis.²³⁸ In contrast to these programs, produce prescriptions focus on reducing the cost of fruit and vegetables to improve diet-related chronic illnesses and improve overall health outcomes. Both SNAP and WIC have small fruit and vegetable subprograms, but these subprograms are underinclusive and are only available at limited redemption locations.

States have successfully implemented incentives within the SNAP program that double the value of fruit and vegetable purchases at farmers markets.²³⁹ For example, Oregon’s Double Up Food Bucks program doubles the value of SNAP for fruit and vegetable purchases at farmers markets and limited grocery stores in Oregon.²⁴⁰ While these programs improve fruit and vegetable affordability for SNAP

²³²FELDSTEIN, *supra* note 41, at 31.

²³³*Id.*

²³⁴*Id.*

²³⁵*Id.*

²³⁶*Id.* at 31–32.

²³⁷*Id.* at 32.

²³⁸Auvinen et al., *supra* note 181, at 1.

²³⁹CRAWFORD ET AL., *supra* note 39 at 35. These discounts are known as the Double Up Food Bucks (DUFb) Program. Many Americans who do not receive SNAP benefits would benefit from produce prescriptions. This Article proposes produce prescriptions for a much larger number of Americans through Medicare, Medicaid, and CHIP.

²⁴⁰See generally *Get more fruits and veggies at Grocery Stores with Double Up!, Double Up Oregon* (last visited Oct. 26, 2022), <https://doubleuporegon.org/grocery-stores/> [<https://perma.cc/7B5Y-4SBR>].

participants, they are underinclusive. Many eligible people do not sign up for SNAP due to the stigma of “food stamps.”

Alongside SNAP, the USDA currently administers WIC in partnership with states.²⁴¹ The main WIC program only covers \$11 per month of fruit and vegetables for women and \$8 per month for children.²⁴² WIC also includes a subprogram, the Farmers Market Nutrition Program (FMNP).²⁴³ This program allows eligible WIC participants to receive fresh, locally grown fruit and vegetables directly from farmers markets.²⁴⁴ FMNP has been successful, but is ultimately underinclusive. WIC has very limited eligibility and covers a tiny fraction of the U.S. population; FMNP applies only to a small portion of the people that could benefit from fresh produce.²⁴⁵ Additionally, redeeming produce coupons at farmers markets is not practical for some individuals;²⁴⁶ farmers markets are often seasonal and are not available in many communities.²⁴⁷ FMNP’s benefits also suffer from severe limitation: FMNP benefits are capped at an average of \$26 annually across the states,²⁴⁸ and are \$30 annually in the states with the most generous programs.²⁴⁹ Finally, unlike federal health care programs, WIC is often seen exclusively as a welfare program, and some needy individuals may avoid signing up for WIC due to welfare stigmatization.²⁵⁰

SNAP’s and WIC’s subprograms have been linked to greater food security and higher fruit and vegetable intake, but they are far from perfect: they often have limited reach and offer limited redemption locations. Additionally, these subprograms are focused on cost, and do not incorporate education or motivation as produce prescriptions under Medicare, Medicaid, and CHIP could.

Other potential nutrition policies aimed at enabling and incentivizing fruit and vegetable consumption

Some nutrition advocates argue that the government should increase labeling on unhealthy foods such as breakfast cereals and sodas.²⁵¹ While fortifying labeling practices could help educate consumers, it would fail to address cost barriers to purchasing healthier options. Additionally, changes in labeling practices are unlikely to gain popular support and would face significant lobbying pushback from agricultural industries.

Other researchers propose that the federal government further subsidize fruit and vegetable production. Less than one percent of farm subsidies go to fruit and vegetable production.²⁵² More

²⁴¹ *Exploring the Causes of State Variation in SNAP Administrative Costs*, USDA FOOD & NUTRITION SERV., <https://www.fns.usda.gov/snap/exploring-causes-state-variation-snap-administrative-costs> [perma.cc/7523-9JRG] (June 26, 2019).

²⁴² *WIC Food Packages - Maximum Monthly Allowances*, USDA FOOD & NUTRITION SERV., [fns.usda.gov/wic/food-packages-maximum-monthly-allowances](https://www.fns.usda.gov/wic/food-packages-maximum-monthly-allowances) [perma.cc/66YN-2AC3] (Oct. 5, 2015).

²⁴³ *See generally* USDA, WIC FARMERS’ MARKET NUTRITION PROGRAM (2021), <https://www.fns.usda.gov/fmnp/fact-sheet-2021> [perma.cc/G9D5-8YVQ].

²⁴⁴ *Id.*

²⁴⁵ This program benefits pregnant women as well as infants and children within the WIC program. Many other Americans would benefit from produce prescriptions.

²⁴⁶ KATIE GARFIELD ET AL., *PRODUCE PRESCRIPTIONS: A U.S. POLICY SCAN 15* (Harvard L. Sch. Ctr. for Health L. & Pol’y Innovation 2020). This program helps people purchase food at farmers markets, but does not assist with food purchases at brick-and-mortar grocery retailers.

²⁴⁷ JIM KRIEGER & KIRSTEN LENG, *HEALTHY FOOD PRICING INCENTIVES: DESIGNING SUCCESSFUL PROGRAMS 8* (Healthy Food Am. 2019).

²⁴⁸ U.S.D.A FOOD AND NUTRITION SERV., *WIC Farmers’ Market Nutrition Program (FMNP) 1* (2020), <https://www.fns.usda.gov/fmnp/wic-fmnp-profiles-grants-and-participation> [https://perma.cc/3PPD-FH74].

²⁴⁹ *Id.*

²⁵⁰ *See, generally* KRISTIN SMITH, *FEWER THAN HALF OF WIC-ELIGIBLE FAMILIES RECEIVE WIC BENEFITS* (Univ. N.H. Carsey Sch. of Pub Pol’y 2016).

²⁵¹ For a discussion on food labeling, *see generally* SUNSTEIN, *supra* note 83, at 78-80.

²⁵² Mark Bittman et al., *How a national food policy could save millions of American lives*, WASH. POST (Nov. 7, 2014), https://www.washingtonpost.com/opinions/how-a-national-food-policy-could-save-millions-of-american-lives/2014/11/07/89c55e16-637f-11e4-836c-83bc4f26eb67_story.html [https://perma.cc/D7LH-Q7PS].

heavily subsidized fruit and vegetable production means lower fruit and vegetable prices. Subsidizing produce production, however, is a less targeted approach than produce prescription programs. Produce prescriptions and fruit and vegetable subsidies in SNAP and WIC provide more targeted nutritional benefits to people who most need them. (Of course, targeted programs can be underinclusive: people can lose Medicaid, SNAP, or WIC when their income increases.)

Increasing collaboration between federal health care programs and food programs such as WIC and SNAP might also serve to address deficient produce consumption.²⁵³ Medicaid and CHIP patients could benefit from WIC and SNAP benefits. Currently, only twenty-six state WIC agencies periodically meet with state Medicaid and/or SNAP agencies.²⁵⁴ Additionally, twenty-seven state WIC agencies have written agreements with Medicaid or SNAP, and twenty-two WIC agencies share data with Medicaid or SNAP.²⁵⁵ These numbers demonstrate that federal health programs and federal food programs are siloed and insulated from one another. Although participants in Medicaid and CHIP should typically be eligible for federal food program benefits, many do not enroll.²⁵⁶ For example, eighty-seven percent of children under the age of five who received health care from federal programs were eligible for WIC, but thirty-nine percent of these children did not participate in WIC.²⁵⁷ States could improve enrollment in WIC and SNAP by improving lateral enrollment processes. For example, states could automatically sign-up eligible Medicaid and CHIP patients for SNAP or WIC. An opt-out process would likely have higher rates of participation than an opt-in process;²⁵⁸ in turn, disadvantaged individuals' purchasing power would increase, thereby improving access to healthy food.

There are limitations to the potential efficacy of cross-program collaboration, however. For example, these changes might not reach all Medicare recipients due to income ineligibility, so could potentially be underinclusive compared to the institution of produce prescriptions in Medicare, Medicaid, and CHIP. Additionally, while increasing overlap between federal health care and federal food programs would expand access to healthy food, it would not be targeted at fruit and vegetables and diet specifically. In contrast, CMS-based produce prescriptions would focus directly on improving fruit and vegetable consumption to prevent diet-related chronic diseases.

Increasing interactions between federal health care programs would not be a replacement for produce prescriptions, but doing so could work well in conjunction with produce prescriptions. If produce prescriptions were designed as a discount rather than a cash benefit, the discount could be applied to SNAP purchases. Ideally, state and local governments should consider and implement multiple nutrition policies to improve health care outcomes. The government should also study what works in current programs to design effective produce prescription programs. For example, WIC already has a successful implementation design that allows participants to only receive specific subsidized food items at a wide range of distribution locations.²⁵⁹

²⁵³See, e.g., Zoë NEUBERGER, WIC COORDINATION WITH MEDICAID AND SNAP STATE WIC PROGRAMS CAN REACH MORE ELIGIBLE FAMILIES BY COLLABORATING WITH OTHER MAJOR PROGRAMS THAT SERVE LOW-INCOME FAMILIES WITH YOUNG CHILDREN 1 (Ctr. on Budget and Pol'y Priorities 2021).

²⁵⁴*Id.* at 2.

²⁵⁵*Id.*

²⁵⁶See generally Lucie Schmidt et al., *Safety Net Program Interactions and Impacts on Low-Income Families*, 4 NAT'L BUREAU OF ECON. RES. 10 (2021), <https://www.nber.org/reporter/2021number4/safety-net-program-interactions-and-impacts-low-income-families> [<https://perma.cc/E8B2-WW5P>].

²⁵⁷SUZANNE MACARTNEY & ROBIN GHERTNER, OFF. OF ASSISTANT SEC'Y FOR PLAN. & EVALUATION, DEP'T OF HEALTH & HUM. SERV., MANY CHILDREN IN HHS SAFETY NET PROGRAMS ARE ELIGIBLE FOR NUTRITION ASSISTANCE BUT ARE NOT ENROLLED (2022), <https://aspe.hhs.gov/reports/hhs-programs-wic-snap> [<https://perma.cc/8F2W-6GH8>].

²⁵⁸For an explanation of opt-in and opt-out policies in general, see generally RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* 86, 109-110 (Yale Univ. Press, 2008).

²⁵⁹Auvinen et al., *supra* note 181, at 11.

Why produce prescriptions fit a unique need

While the above policies could help address the cost of fruit and vegetables, they do not connect directly to health care. In contrast, produce prescriptions help motivate and educate patients to make dietary change—an extraordinarily difficult endeavor for most Americans. Produce prescriptions link dietary change to the health care issues that individuals face routinely by encouraging healthy food choices, reducing price barriers, and motivating lasting change.

Ultimately, produce prescriptions would not replace SNAP, WIC, or other basic needs services. They would be distinct and complementary. The primary goal of SNAP and WIC is to meet basic needs: preventing hunger and improving the food purchasing power of low-income individuals. In contrast, produce prescriptions in federal health programs would primarily center upon the goal of improving diets through increased fruit and vegetable consumption. This, in turn, would reduce the incidence and severity of diet-related chronic diseases. And, as discussed in Sections VI.A and VI.B, *supra*, many people who need help with their nutrition are hesitant to seek help from SNAP or WIC due to the stigma attached to welfare. Produce prescriptions would carry a different identity and would, ideally, be administered through programs that are viewed not as welfare programs but as health insurance programs instead.

Implementing produce prescriptions in Medicare, Medicaid, and CHIP

Policy design of produce prescriptions

Produce prescription programs should be designed to best meet the actual needs of Medicare, Medicaid, and CHIP patients. Produce prescription studies have consistently shown the importance of maximizing choice for consumers. As such, governments should design programs to empower individuals to make their own healthy food choices, rather than restrict their capacity to choose. And produce prescriptions should be easy to obtain, understand, and use.

The importance of the term “prescription”

Produce prescriptions help patients recognize the importance of dietary change.²⁶⁰ Both produce prescriptions and drug prescriptions have common elements.²⁶¹ Produce prescriptions and drug prescriptions both emphasize the importance of a patient taking action to improve their health.²⁶² Drug prescriptions allow patients to obtain medication and insurance coverage for financial support.²⁶³ Likewise, produce prescriptions help remove the barriers to fruit and vegetable consumption.²⁶⁴ Using the word “prescription” gives patients the impression that food is an important part of medicine.²⁶⁵ Produce prescriptions are designed to change patient’s attitudes and beliefs about diet.²⁶⁶

Some health care providers have expressed concerns about using the term “prescription” for produce.²⁶⁷ Providers have expressed concern because some providers can prescribe produce prescriptions but do not have the authority to prescribe medication.²⁶⁸ For example, nutritionists could prescribe produce, but cannot prescribe medications.²⁶⁹

²⁶⁰White, *supra* note 103, at 367.

²⁶¹*Id.*

²⁶²*See generally id.*

²⁶³*Id.*

²⁶⁴*Id.*

²⁶⁵*Id.*

²⁶⁶*Id.*

²⁶⁷HENNESSEE, *supra* 80, at 13.

²⁶⁸*Id.* at 17.

²⁶⁹*See id.*

Ultimately, the value of produce prescriptions outweighs these concerns. Providers and health care systems need to understand the role that they have in the development of behaviors such as diet.²⁷⁰ To overcome this challenge, governments should emphasize that produce prescriptions are similar to but distinct from drug prescriptions. Produce prescriptions should be issued using separate forms and paper.²⁷¹ This is particularly important because a traditional prescription paper in the wrong hands can wreak havoc on lives.²⁷²

Types of food covered

Although fresh fruit and vegetables are the most nutritious, they are not always practical. Produce prescription programs should emphasize the importance of fresh fruit and vegetables. Redemptions, however, should also be available for frozen and canned fruit and vegetables. Providing patients with a wide range of redemption options increases participation.²⁷³ Although fresh fruit and vegetables offer the greatest health advantages, produce prescription programs should subsidize all types of fruit and vegetables so that patients have maximum flexibility.²⁷⁴ Government policies should allow individuals to select culturally appropriate foods.²⁷⁵ By subsidizing all fruit and vegetables, patients can choose whatever fruit and vegetables fit into their unique dietary preferences.

Some researchers have proposed a broader healthy food subsidy rather than just subsidizing fruit and vegetables.²⁷⁶ This Article advocates for a subsidy of fruit and vegetables for a few reasons. First, numerous studies show that fruit and vegetables are lacking from American diets. Second, classifying every food as “healthy” or “unhealthy” would create a colossal administrative burden both for government agencies and for retail establishments.²⁷⁷ Classifying every type of food would be particularly challenging for small establishments with limited labor and technological resources.²⁷⁸ The current U.S. national food market contains more than 650,000 food and beverage products and approximately 20,000 new products are added to the market each year.²⁷⁹ Third, there is no agreed-upon way to classify a random assortment of foods as healthy or unhealthy.²⁸⁰ Finally, the classification of hundreds of thousands of products as “healthy” or “unhealthy” could create opportunities for lobbying and corruption. In contrast, CMS could simply code fruits and vegetables as reimbursable.²⁸¹

Redemption logistics

To maximize choice, accessibility, and practicality, produce prescription programs should allow for redemptions at a wide range of locations including grocery stores, farmers’ markets, and CSAs. Some produce prescription programs allow for widespread redemption including grocery stores, local farmers markets, and community-supported agriculture (CSA) programs.²⁸² Other produce prescription

²⁷⁰Mozaffarian et al., *supra* note 125, at 4.

²⁷¹Wuest Interview, *supra* note 313.

²⁷²*Id.*

²⁷³KRIEGER & LENG, *supra* note 260, at 6.

²⁷⁴*Id.*

²⁷⁵RODRIGUEZ et al., *supra* note 78, at 17-18. Many nutritional education programs have historically focused on diets from a white cultural perspective. This creates additional barriers for participants with other cultural backgrounds. Instead, nutritional education programs should focus on improving overall diet within the context of differing cultural and cuisine perspectives and contexts.

²⁷⁶Lee et al., *supra* note 212, at 2-3.

²⁷⁷Diane Whitmore Schanzenbach, *Pros and Cons of Restricting SNAP Purchases*, BROOKINGS: TESTIMONY (Feb. 16, 2017), <https://www.brookings.edu/testimonies/pros-and-cons-of-restricting-snap-purchases/> [<https://perma.cc/9DQ5-CBV8>].

²⁷⁸*Id.*

²⁷⁹*Id.*

²⁸⁰*Id.*

²⁸¹HENNESSEE, *supra* note 80, at 14.

²⁸²White, *supra* note 103, at 366.

programs have restricted redemption to specific locations, such as farmers markets.²⁸³ A plurality of previous produce prescription programs have allowed for redemption at farmers markets.²⁸⁴ While farmers markets do help unite communities and foster local food production, studies have shown that such restrictive programs are impractical for patients.²⁸⁵ Many farmers markets also have highly seasonal food offerings or may be open only seasonally.²⁸⁶ Seasonal produce may also be incompatible with some culturally appropriate diets. Produce prescription programs should instead allow for year-round use.²⁸⁷

Redemption methods should be easy, flexible, and stigma-free. Additionally, redemption designs should minimize the state's administrative burden. Redemption methods should allow people to participate in a produce prescription program without being undermined by psychosocial factors.²⁸⁸ The government should consider the stigma associated with paper coupons and welfare.²⁸⁹ The government could design redemption options to appear as entitlements rather than as welfare.

CMS or state agencies could issue produce prescription cards. Electronic benefits transfer cards are better suited for technological change than paper and are less likely to cause stigma.²⁹⁰ A review of twenty-nine produce prescription studies shows that electronic redemption increases consumption and purchase of healthy foods.²⁹¹ Advocates have considered using electronic benefits transfer cards to fund produce subsidies for nearly two decades.²⁹² The Senate draft of the 2002 Farm Bill suggested "encouraging consumption of fruit and vegetables by developing a cost-effective system for providing discounts for purchases of fruit and vegetables made through the use of electronic benefits transfer cards."²⁹³ The government should consider using electronic benefits transfer cards because they are easy, flexible, and stigma-free.

Access

Produce prescriptions should be available to any Medicare, Medicaid, or CHIP patient at the discretion of a health care provider. Under federal law, services must be provided based on need rather than a one-size-fits-all approach.²⁹⁴ Giving discretion to health care professionals would be helpful for several reasons. First, it would put the prescription into the hands of a professional that knows the patient's health condition. Second, it would prevent the program from being underinclusive. Some Medicare and Medicaid patients are likely to frequently move between income brackets. A small income increase can cause a participant to lose eligibility.²⁹⁵ This can often result from the addition of part-time work, variable self-employment, seasonal work, or the work of a partner.²⁹⁶ Loss of eligibility can also put a strain on families.²⁹⁷ Third, prescriptions could benefit a wide range of patients.²⁹⁸ Improving the health of Medicare or Medicaid patients could also decrease health costs in the system. Therefore, the

²⁸³HENNESSEE, *supra* note 80, at 5.

²⁸⁴Rodriguez et al., *supra* note 78, at 13.

²⁸⁵KRIEGER & LENG, *supra* note 260, at 8.

²⁸⁶*Id.*

²⁸⁷See Trapl *Dietary*, et al., *supra* note 91, at 5.

²⁸⁸Haley Swartz, *Produce Rx Programs for Diet-Based Chronic Disease Prevention*, AM. MED. ASS'N J. OF ETHICS 960, 967 (2021), <https://journalofethics.ama-assn.org/sites/journalofethics.ama-assn.org/files/2018-10/org2-1810.pdf> [<https://perma.cc/Y9HE-GG3H>].

²⁸⁹*Id.*

²⁹⁰*Id.* at 967.

²⁹¹KRIEGER & LENG, *supra* note 260, at 6.

²⁹²HENNESSEE, *supra* note 80, at 8-9.

²⁹³*Id.* at 9.

²⁹⁴CTR. FOR MEDICARE & MEDICAID SERV., OPPORTUNITIES IN MEDICAID AND CHIP TO ADDRESS SOCIAL DETERMINANTS OF HEALTH (SDOH) (Ctr. for Medicare & Medicaid Serv. 2021) at 1.

²⁹⁵Lucas et al., *supra* note 126, at 462.

²⁹⁶*Id.*

²⁹⁷*Id.*

²⁹⁸Rodriguez et al., *supra* note 78, at 14-15.

government should establish a wide definition of need and give as much deference as possible to health care providers.

In terms of the longevity of a given prescription: offering long-term incentives increases consumption or purchases of healthy foods.²⁹⁹ Produce prescriptions should be easy to renew and should last long enough to not require regular visits to a health care professional for renewals. In the United Kingdom's Healthy Start Program, many young mothers were no longer provided fruit and vegetables after their babies were born.³⁰⁰ Some mothers expressed that they felt that they could no longer afford to eat healthy foods after the loss of benefits.³⁰¹ Produce prescriptions should ideally instead allow participants to make lasting dietary changes. Long-term access provides continuity to people who otherwise face many life uncertainties.³⁰²

Patients are enrolled in Medicare for life. Therefore, long-term produce prescriptions would fit well into Medicare's design. In contrast, some patients move in and out of Medicaid and CHIP coverage. Medicaid and CHIP coverage are based on eligibility, so an increase in income can cause an individual to lose these forms of public insurance. Although many Medicaid and CHIP patients have these programs for only a short amount of time, most participants do not regularly churn out of eligibility; many remain on these programs for years.³⁰³ Long-term produce prescriptions would serve Medicaid and CHIP patients who remain in these programs over time, but short-term enrollees in Medicaid and CHIP could lose their produce prescription benefits when they leave the program. This same loss-of-eligibility challenge also occurs across other means-tested programs such as SNAP and WIC. Short term produce prescriptions have been successful in studies. Even those that are on Medicaid and CHIP for a short time could benefit from healthier eating and dietary change. Longer term incentives yield more positive results. As a result, Medicare patients, and those who are covered by Medicaid or CHIP for a longer duration, would benefit more greatly from this policy than short-term enrollees would.

Designing a produce prescription program optimal for health care professionals

Systems should allow health care providers to easily provide produce prescriptions without disrupting workflow.³⁰⁴ The government should design efficient systems with electronic medical records and electronic benefit processing.³⁰⁵ While produce prescription programs are most likely to be incorporated into primary care, they could also be incorporated into a wide range of other health fields. Agencies or health care organizations should provide health care professionals with easy-to-communicate facts about the impact of fruit and vegetable consumption on a wide range of specific health issues.³⁰⁶ Providers such as physicians would then be able to quickly and easily communicate how fruit and vegetable consumption could impact any given health issue. For example, if a patient is diagnosed with pre-diabetes, physicians could have ready-to-provide information from CMS on the impact of fruit and vegetable consumption for pre-diabetic persons. Information could also be provided for less common diet-related conditions and health procedures. For example, patients could receive information about the impact of fruit and vegetable consumption on post-operative recovery.³⁰⁷ Because people are risk-averse, it is better to frame potential outcomes in terms of potential losses rather than potential gains.³⁰⁸

²⁹⁹KRIEGER & LENG, *supra* note 260, at 6.

³⁰⁰Lucas et al., *supra* note 126, at 462.

³⁰¹*Id.*

³⁰²See generally *id.*

³⁰³See generally AN UPDATED LOOK AT RATES OF CHURN AND CONTINUOUS COVERAGE IN MEDICAID AND CHIP 1 (The Medicaid and CHIP Payment and Access Comm'n 2021) <https://www.macpac.gov/wp-content/uploads/2021/10/An-Updated-Look-at-Rates-of-Churn-and-Continuous-Coverage-in-Medicaid-and-CHIP.pdf> [<https://perma.cc/CZS7-SWQT>].

³⁰⁴Interview with Thomas K. Wuest, Ret. Chief Medical Officer, Trillium Cmty. Health Plan, in Eugene, Or. (Nov. 4, 2021) [hereinafter "Wuest Interview"].

³⁰⁵Auvinen et al., *supra* note 181, at 1, 9.

³⁰⁶Wuest Interview, *supra* note 313.

³⁰⁷*Id.*

³⁰⁸DANIEL KAHNEMAN, THINKING, FAST AND SLOW 414 (2011).

Although health care professionals should ultimately have widespread discretion in prescribing produce, health care organizations and governments can design systems to efficiently identify prospective beneficiaries. Previous produce prescription programs have focused on low-income patients in general as well as patients with specific health challenges such as hypertension, type-2 diabetes, and obesity.³⁰⁹ Studies have shown that produce prescription programs benefit each of these groups of individuals.³¹⁰ Health care professionals should consider produce prescriptions for patients based on income level and food insecure status as well as either the diagnosis or risk of developing a diet-related illness.³¹¹

Medical providers could automatically screen for patients with low incomes, diet-related health conditions or both.³¹² CMS has already developed a screening tool called the Accountable Health Communities Health-Related Social Needs Tool (AHC-HRSN).³¹³ Medical providers could use this tool to identify patients that could benefit from produce prescriptions. Additionally, medical professionals could always consider produce prescriptions when their Medicaid patient is pregnant. In the United Kingdom's Healthy Start program, for example, forms are distributed and countersigned at routine prenatal appointments.³¹⁴

Finally, past programs have allowed a wide range of health professionals to prescribe produce including physicians, nurses, and dietitians.³¹⁵ This broad approach maximizes the opportunity for patients to receive and redeem produce prescriptions, and should be adhered to when possible.

Determining subsidy rate

Redemption values and methods should enable as many patients as possible to afford fruit and vegetables.³¹⁶ CMS should conduct further research to determine the optimal discount value. Various programs have provided produce prescription benefits using four main methods.³¹⁷ These methods include discounts, matches, rebates, and subsidies.³¹⁸ Discounts typically include a percentage off the regular price of produce.³¹⁹ In matching programs, patients receive a fixed matching rate such as one dollar of every dollar or one dollar for every two dollars.³²⁰ Rebates provide cashback as a percentage of the price of an item.³²¹ Finally, subsidies provide a fixed cash value for specific foods.³²² CMS should investigate which method works best for patients and easy administration.

Using produce prescriptions to enhance produce accessibility in food deserts

Across the United States, many low-income communities have limited access to affordable healthy food.³²³ These communities are classified as "food deserts."³²⁴ Food deserts increase food disparities and cause poor health outcomes.³²⁵ Many economically challenged, highly urban, and rural communities

³⁰⁹White, *supra* note 103, at 366; Cavanagh et al., *supra* note 15, at 2636-37.

³¹⁰GARFIELD ET AL., *supra* note 12, at 4.

³¹¹HENNESSEE, *supra* note 80, at 3.

³¹²Swartz, *supra* note 290, at 961.

³¹³U.S. DEP'T. HEALTH & HUM. SERVS., CTRS. FOR MEDICARE & MEDICAID SERVS., ACCOUNTABLE HEALTH COMMUNITIES MODEL (2017), <https://innovation.cms.gov/files/worksheets/ahcm-screeningtool.pdf> [<https://perma.cc/V8SM-REAU>].

³¹⁴Lucas et al., *supra* note 126, at 461.

³¹⁵See GARFIELD ET AL., *supra* note 12, at 1.

³¹⁶GARFIELD ET AL., *supra* note 12, at 1.

³¹⁷KRIEGER & LENG, *supra* note 260, at 3.

³¹⁸*Id.*

³¹⁹*Id.*

³²⁰*Id.*

³²¹*Id.*

³²²*Id.*

³²³Trapl et al., *Mixed*, *supra* note 94, at 530.

³²⁴*Id.*

³²⁵*Id.*

lack an adequate number of accessible grocery stores—and thus lack the fresh, healthy food that most grocery stores stock. In rural communities, for example, both the lack of fresh fruit and vegetables and the high cost of produce contribute to food deserts.³²⁶ The presence and quality of grocery stores and other retail food markets in a given community greatly impact how and what members of that community purchase and ultimately consume.³²⁷

Crucially, produce prescriptions could improve access to fruit and vegetables in food deserts. First, produce prescriptions decrease the cost of fresh produce.³²⁸ In many food deserts, fresh produce is available but is too costly for low-income individuals to afford. Food prices are often higher in low-income neighborhoods than in high-income neighborhoods.³²⁹ Low-income areas tend to have fewer markets and these markets tend to be smaller.³³⁰ Smaller stores generally have higher prices.³³¹ As a result, low-income areas tend to suffer from high food prices.³³² Produce prescriptions can destabilize this cost barrier by subsidizing fruit and vegetables. Second, governments can reward community engagement.³³³ Governments could use produce prescription programs to incentivize businesses to offer healthy foods in food deserts. For example, governments could provide additional subsidies to food retailers in food deserts.³³⁴ Governments could tie these subsidies to how many produce prescriptions are redeemed at a market.³³⁵ Third, produce prescriptions increase demand for fresh produce in food deserts. Increased demand in these areas can stimulate local businesses to offer more produce. If produce incentives increase sales and revenue for local businesses, those stores may in turn fund further incentives.³³⁶ Fourth, local governments, health care organizations, and nonprofits could partner with farmers markets to offer additional produce pickup locations in communities.

Produce prescriptions in Medicare

Including produce prescriptions in Medicare has the potential to drastically improve health outcomes. Medicare is administered by the federal government and currently serves 62.8 million Americans.³³⁷ Many Medicare patients have diet-related chronic diseases: fifty-seven percent of fee-for-service beneficiaries have hypertension and twenty-seven percent have diabetes.³³⁸ The multiple ways to implement produce prescriptions into Medicare's structure are discussed below.

Codifying produce prescriptions as a Medicare benefit

One way to expand coverage is to add produce prescriptions to the baseline benefits of Medicare.³³⁹ Congress could amend the Social Security Act to include produce prescriptions either within a current benefit category or a new category.³⁴⁰ Medicare Part B currently includes “medical and other health

³²⁶Burrington et al., *supra* note 110, at 1.

³²⁷CRAWFORD ET AL., *supra* note 39, at 33.

³²⁸Cavanagh et al., *supra* note 15, at 2637.

³²⁹Diana Cassidy et al., *Is Price a Barrier to Eating More Fruits and Vegetables for Low-Income Families?*, 107 J. OF THE AM. DIETETIC ASS'N 1909, 1910 (2007).

³³⁰*Id.*

³³¹*Id.*

³³²*Id.*

³³³Mozaffarian et al., *supra* note 125, at 4.

³³⁴Wuest Interview, *supra* note 313.

³³⁵*Id.*

³³⁶KRIEGER & LENG, *supra* note 260, at 10.

³³⁷CTR. FOR MEDICARE & MEDICAID SERV., *supra* note 68, at 10.

³³⁸CTR. FOR MEDICARE & MEDICAID SERV., CHRONIC CONDITIONS CHARTS: 2018 (Ctr. for Medicare & Medicaid Serv. 2021) https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/Chartbook_Charts [<https://perma.cc/9RSP-NZ3S>].

³³⁹GARFIELD ET AL., *supra* note 12, at 15.

³⁴⁰*Id.* at 16.

services” under 42 U.S.C. § 1395x(s)(2).³⁴¹ Congress could amend the list of “medical and other health services” covered to include produce prescriptions.³⁴² Codifying these benefits would be the best option for a few reasons.³⁴³ First, codification would provide administrators with maximum flexibility.³⁴⁴ Second, a codified program would be less likely to suffer from variable funding.³⁴⁵ Third, the codification would benefit a wide range of Medicare patients.³⁴⁶ Although codifying benefits into the baseline of Medicare is the best long-term option for implementing produce prescriptions, this code change would require the support of Congress and the President. This option would be large-scale from the start.

Implementing produce prescriptions in Medicare through administrative policy

Alternatively, the executive branch could expand produce prescriptions through administrative policy.³⁴⁷ CMS could issue regulatory flexibilities and waivers.³⁴⁸ In particular, CMS could interpret produce prescriptions as part of rehabilitative services.³⁴⁹ The relevant statute already covers rehabilitative services, so an expansive interpretation could allow for produce prescriptions.³⁵⁰ This method promises two advantages. First, expansion through administrative policy would only require executive branch approval. Second, this option would allow for smaller-scale initial trial programs.

But expanding long-term produce prescriptions through administrative policy would be less successful than codifying changes. First, administrative changes would provide less flexibility.³⁵¹ For example, under some interpretations of the current statute, produce prescriptions could be offered as rehabilitative services but not as preventive services.³⁵² Under this interpretation, Medicare could provide produce prescriptions to those with diabetes, but not necessarily those at risk of developing diabetes. Many Medicare enrollees would be ineligible for produce prescriptions without codified changes.³⁵³ By one estimate, regulatory flexibilities would exclude almost two thirds of Medicare enrollees.³⁵⁴ Second, funding would be inconsistent and could change over time.³⁵⁵ The government would ideally implement produce prescriptions long-term through legislation rather than administrative policy.

Medicare demonstration models

Another option would be to establish a demonstration model through the Center for Medicare and Medicaid Innovation (CMMI).³⁵⁶ CMMI is designed to test innovative health care models within Medicare and Medicaid.³⁵⁷ HHS has authority to then scale up these models across Medicare or Medicaid if the model meets three tests.³⁵⁸ First, the model must reduce spending without reducing quality of care or improve patient care without increasing spending.³⁵⁹ Second, the Chief Actuary of

³⁴¹ 42 U.S.C.S. § 1395x(s)(2) (LexisNexis 2022).

³⁴² GARFIELD ET AL., *supra* note 12, at 16.

³⁴³ *Id.*

³⁴⁴ *Id.*

³⁴⁵ *Id.* at 15.

³⁴⁶ *Id.* at 16.

³⁴⁷ *Id.* at 15.

³⁴⁸ *Id.* at 20.

³⁴⁹ *Id.* at 15.

³⁵⁰ *Id.*

³⁵¹ *See id.*

³⁵² *Id.* at 15-16.

³⁵³ *Id.* at 15.

³⁵⁴ *Id.*

³⁵⁵ *Id.*

³⁵⁶ *Id.* at 16.

³⁵⁷ *Id.*

³⁵⁸ *Id.*

³⁵⁹ *Id.*

CMS must certify that expansion would not increase spending.³⁶⁰ Third, HHS must determine that expansion would not deny or limit coverage or benefits to enrollees.³⁶¹ The advantage of this option is that produce prescriptions could be developed and evaluated slowly.³⁶² As with other administrative options, this option would also have disadvantages. The program could have limited reach and might suffer from inconsistent funding.³⁶³

Federal Implementation within Medicare

Ideally, CMS would implement produce prescriptions through Medicare directly. States and individual health plans could also implement produce prescriptions with guidance from CMS.³⁶⁴ CMS should allow states to create their own programs if they can do so more cost-effectively than the federal government.³⁶⁵ Because Medicare is a federal program, states are less likely to invest in produce prescription programs for Medicare patients without federal involvement. States, however, have a strong financial incentive to invest in Medicaid produce prescriptions.³⁶⁶

CMS could also allow Medicare Advantage Plans to include produce prescriptions.³⁶⁷ Approximately forty-eight percent of Medicare enrollees receive Medicare from private insurers through Medicare Advantage Plans.³⁶⁸ Medicare Advantage Plans offer patients additional benefits.³⁶⁹ CMS could suggest that these plans include produce prescriptions and could guide implementation.³⁷⁰ CMS has four requirements for general supplemental benefits within Medicare Advantage Plans.³⁷¹ General supplemental benefits must: (1) extend to services not covered in Medicare Parts A or B, (2) be “primarily health related,” (3) incur a non-zero direct medical cost to the plan in question, and (4) apply uniformly to all plan beneficiaries.³⁷² Currently, CMS does not consider most nutritional interventions to be “primarily health related.”³⁷³ Nevertheless, CMS could allow produce prescriptions within two aspects of Medicare Advantage: Special Supplemental Benefits for the Chronically Ill and Medicare Advantage Value-Based Insurance Design.³⁷⁴ Special Supplemental Benefits for the Chronically Ill would limit produce prescriptions to chronically ill enrollees.³⁷⁵ The Medicare Advantage Value-Based Insurance Design is a pilot program. This program allows for food as a supplemental benefit, but only reaches a limited number of participants.³⁷⁶ Ideally, the government should provide produce prescriptions on a broader scale rather than just through Medicare Advantage Plans. However, the government could start with Medicare Advantage Plans or other smaller programs while preparing to include produce prescriptions within the rest of Medicare.

³⁶⁰ *Id.*

³⁶¹ *Id.*

³⁶² *Id.*

³⁶³ *Id.*

³⁶⁴ *Id.* at 23.

³⁶⁵ SUNSTEIN, *supra* note 149, at 335.

³⁶⁶ See, FELDSTEIN, *supra* note 41, at 136. Medicaid is a state-administered program. While the federal government pays between fifty and seventy-four percent of the costs of the program for each state, a substantial portion of the program cost is ultimately carried by states.

³⁶⁷ GARFIELD ET AL., *supra* note 12, at 24.

³⁶⁸ MEREDITH FREED ET AL., MEDICARE ADVANTAGE IN 2022: ENROLLMENT UPDATE AND KEY TRENDS (Kaiser Fam. Found. 2022) <https://www.kff.org/medicare/issue-brief/medicare-advantage-in-2022-enrollment-update-and-key-trends/>.

³⁶⁹ FELDSTEIN, *supra* note 41, at 115.

³⁷⁰ GARFIELD ET AL., *supra* note 12, at 24.

³⁷¹ VRUSHAB GOWDA ET AL., PRODUCE PRESCRIPTIONS AS A NOVEL SUPPLEMENTAL BENEFIT IN MEDICARE ADVANTAGE 1 (Harvard L. Sch. Ctr. for Health L. & Pol’y Innovation 2022).

³⁷² *Id.*

³⁷³ *Id.* at 2.

³⁷⁴ *Id.* at 4.

³⁷⁵ *Id.* at 2.

³⁷⁶ *Id.* at 3-4.

Produce prescriptions in Medicaid

Medicaid should also cover produce prescriptions. Medicaid is a federal program administered primarily by the states. Medicaid currently serves 76.5 million Americans.³⁷⁷ Twenty-three percent of Medicaid participants are food insecure.³⁷⁸ Because Medicaid is administered as a partnership between federal and state governments, there are opportunities for produce prescription implementation at both the federal and state levels.³⁷⁹

States flexibly run Medicaid within broad federal statutory and administrative guidelines. While CMS provides states with a framework for Medicaid, states also have flexibility in how they administer these programs. For example, more than a decade after the Affordable Care Act, twelve states have still not expanded Medicaid.³⁸⁰

Codifying Produce Prescriptions as a Medicaid Benefit

As with Medicare, Congress could expand Medicaid benefits by adding a benefit category in the Social Security Act.³⁸¹ Congress could either expand produce prescriptions within an existing category, or it could create a new category.³⁸² The U.S. Code addresses Medicaid coverage at 42 U.S.C. § 1396d(a)(13).³⁸³ This section could be amended to specifically allow coverage of produce prescriptions as preventive or rehabilitative services within Medicaid.³⁸⁴ As with Medicare, amending the code would be the best method for flexibility, financing, and impact.³⁸⁵

Expanding Produce Prescriptions in Medicaid Through Administrative Policy

CMS could also expand produce prescriptions by interpreting produce prescriptions as a form of rehabilitative services.³⁸⁶ While this would help improve the diets of some Medicaid patients, this method would not serve the majority of Medicaid patients.³⁸⁷ This method would also suffer from variable funding and limited flexibility.³⁸⁸ As with Medicare, CMMI could run demonstration models within Medicaid.³⁸⁹

Expanding Produce Prescriptions Through State Medicaid Policies

Because Medicaid is a federal program administered by the states, states need permission to experiment with policies such as produce prescriptions.³⁹⁰ CMS could give states waivers allowing states to implement produce prescriptions through state Medicaid and CHIP programs.³⁹¹ Under Section 1115

³⁷⁷CTR. FOR MEDICARE & MEDICAID SERV., FAST FACTS, *supra* note 62.

³⁷⁸GARFIELD ET AL., *supra* note 12, at 14 n.74 (citing Cornelia Hall et al., *Food Insecurity and Health: Addressing Food Needs for Medicaid Enrollees as Part of COVID-19 Response Efforts*, KAISER FAMILY FOUND. (Aug. 14, 2020), <https://www.kff.org/report-section/food-insecurity-and-health-addressing-food-needs-for-medicaid-enrollees-as-part-of-covid-19-response-efforts-issue-brief/>).

³⁷⁹*Status of State Medicaid Expansion Decisions: Interactive Map*, KAISER FAM. FOUND. (Nov. 9, 2022), <https://www.kff.org/medicaid/issue-brief/status-of-state-medicaid-expansion-decisions-interactive-map/> [<https://perma.cc/J43C-K4VJ>].

³⁸⁰*Id.*

³⁸¹GARFIELD ET AL., *supra* 12 at 16.

³⁸²*Id.*

³⁸³42 U.S.C.S. § 1396d(a)(13) (LexisNexis 2022).

³⁸⁴GARFIELD ET AL., *supra* 12 at 16.

³⁸⁵*Id.* at 15.

³⁸⁶*Id.*

³⁸⁷Including produce prescriptions within the definition of rehabilitative services would help patients who already suffer from a chronic disease; however, rehabilitative services would not cover patients who have not yet developed a disease.

³⁸⁸Swartz, *supra* note 290, at 968 (discussing the need for substantial policy cohesion in order to adequately and consistently fund produce prescription programs).

³⁸⁹GARFIELD ET AL., *supra* note 12, at 16.

³⁹⁰See Ctr. for Medicare & Medicaid Serv., *supra* note 296, at 10.

³⁹¹GARFIELD ET AL., *supra* note 12, at 21.

of the Social Security Act, HHS is authorized to approve experimental, pilot, or demonstration projects within Medicaid.³⁹² These demonstration projects must be budget neutral for federal taxpayer dollars.³⁹³ Approvals are given for five year projects and extensions are available.³⁹⁴

CMS has approved requests from Massachusetts and North Carolina to implement nutrition interventions including produce prescriptions for some Medicaid participants.³⁹⁵ These state projects have not yielded significant amounts of data relevant to this Article. The current pilot projects are focused on a wider range of social determinants of health rather than just diet and food insecurity. The Healthy Opportunities Pilot in North Carolina is designed to address a wider-range of social determinants of health including housing, food, transportation, and interpersonal safety and toxic stress for high-needs Medicaid participants.³⁹⁶ Similarly, the Massachusetts demonstration waiver allows for fruit and vegetable prescriptions alongside numerous other interventions ranging from medically necessary home modifications to housing deposits for patients to secure housing.³⁹⁷ CMS could approve demonstration waivers for other states as well.³⁹⁸ To gather effective data for a national program, waivers should be focused on produce prescriptions. These waivers would allow states to directly provide produce prescriptions.³⁹⁹

Additionally, states with waivers from CMS can contract with Medicaid Managed Care Organizations (MCOs) to cover produce prescriptions.⁴⁰⁰ States have wide authority to design MCO structures.⁴⁰¹ States currently require MCOs to screen for various social needs.⁴⁰² States could also require MCOs to screen for diet-affected health needs.⁴⁰³ In Oregon, MCOs are allowed to provide food vouchers under a Section 1115 demonstration waiver.⁴⁰⁴ The advantage of working with MCOs is that this is another incremental step that could help gather data on produce prescriptions. The key disadvantages would be that MCO programs would not be mandatory and would not reach all Medicaid recipients.

Produce prescriptions in CHIP

CHIP provides insurance for 6.87 million children⁴⁰⁵ whose families cannot afford private insurance⁴⁰⁶ but earn too much money to qualify for Medicaid.⁴⁰⁷ CHIP receives both state funding and federal block grant funding but is administered by the states⁴⁰⁸ and is authorized within the Social Security Act under Title XXI.⁴⁰⁹ Each state provides a State Children's Health Insurance Program, and the federal

³⁹²Ctr. for Medicare & Medicaid Serv., *supra* note 296, at 10; Medicaid.gov, *About Section 1115 Demonstrations*, <https://www.medicaid.gov/medicaid/section-1115-demonstrations/about-section-1115-demonstrations/index.html> (last visited Oct. 25, 2022) [<https://perma.cc/9T8K-FT47>].

³⁹³*Id.*

³⁹⁴*Id.*

³⁹⁵GARFIELD ET AL., *supra* note 12, at 4.

³⁹⁶N.C. Dep't of Health & Hum. Serv., *Healthy Opportunities Pilots*, <https://www.ncdhhs.gov/about/department-initiatives/healthy-opportunities/healthy-opportunities-pilots> (last visited Oct. 25, 2022) [<https://perma.cc/DGK4-HE9Q>].

³⁹⁷MassHealth Medicaid and CHIP Section 1115 Demonstration, 118-119 (Ctr. for Medicare & Medicaid Serv. 2022) <https://www.mass.gov/doc/masshealth-extension-approval/download> [<https://perma.cc/6ZTA-KMT8>].

³⁹⁸GARFIELD ET AL., *supra* note 12, at 21. (Section 1115 waivers allow states to test new approaches to Medicaid delivery).

³⁹⁹*Id.*

⁴⁰⁰*Id.*

⁴⁰¹*Id.* at 22.

⁴⁰²*Id.* at 23.

⁴⁰³*Id.* at 23.

⁴⁰⁴*Id.* at 22-23.

⁴⁰⁵CTR. FOR MEDICARE & MEDICAID SERV., ENROLLMENT, *supra* note 22, at 3.

⁴⁰⁶FELDSTEIN, *supra* note 41, at 138-39.

⁴⁰⁷*The Children's Health Insurance Program (CHIP)*, HEALTH CARE.GOV, <https://www.healthcare.gov/medicaid-chip/childrens-health-insurance-program/> (last visited Oct. 24, 2022) [<https://perma.cc/ADR3-6265>].

⁴⁰⁸42 U.S.C.S. § 1397aa (LexisNexis 2022).

⁴⁰⁹42 U.S.C.S. §§ 1397aa-1397mm (LexisNexis 2022).

government provides block-grant funding directly to the states. State CHIP plans must meet either Medicaid requirements (Title XIX), CHIP coverage requirements (Section 2103), or both.⁴¹⁰

CHIP is run with wide state discretion within federal guidelines.⁴¹¹ The federal government provides various basic requirements. For example, state children's health insurance plans must cover low-income children, and state plans cannot deny children based on pre-existing conditions.⁴¹² State CHIP programs are funded by annual block grant allotments from CMS.⁴¹³ In order to receive their federal allotment, states are required to provide matching funds.⁴¹⁴ States run CHIP programs under various administrative options. For example, states can run CHIP under Section 2103, as an expansion of Medicaid, or as a combination of both programs.⁴¹⁵ The federal government requires that state CHIP programs include comprehensive coverage including routine check-ups, dental and vision care, and prescriptions.⁴¹⁶ States are able to provide additional services, as well.⁴¹⁷

While the federal government requires certain baseline benefits, individual states have a significant amount of leeway in adding additional benefits. Because the federal government provides a significant portion of CHIP's funding, the federal government may have a greater incentive to develop comprehensive produce prescription programs within CHIP and could do so via codification or administrative policy.

Many CHIP programs are run in partnership with Medicaid. CHIP incorporates benefits from the same statute as Medicaid (Title XIX).⁴¹⁸ CHIP also incorporates benefits under section 2103 of Title XXI.⁴¹⁹ Under Title XXI section 2105, CHIP provides payments to states for "child health assistance."⁴²⁰ In Section 2110, the CHIP statute provides a definition of child health assistance.⁴²¹ This statute could be interpreted broadly to already allow for produce prescriptions, but for clarity, specific codification would be a better option. Congress should amend both Title XIX at 42 U.S.C. § 1395x(s)(2) and Title XXI at 42 U.S.C. § 1397jj(a) to include produce prescriptions in the lists of services.

Under Title XXI Section 2110, "child health assistance" is defined.⁴²² The definition includes numerous services. Although produce prescriptions are not listed as an option, they could fit under subsection 24, which includes "any other ... preventive ... therapeutic ... rehabilitative services ... if recognized by State law and only if the service is (A) prescribed by or furnished by a physician or other licensed or registered practitioner within the scope of practice as defined by State law ..."⁴²³ Additionally, CHIP can cover "any other health care services or items specified by the Secretary and not excluded under this section."⁴²⁴ CMS could interpret produce prescriptions within the definition of "child health assistance" and could provide guidance to states to promote produce prescriptions in CHIP.

⁴¹⁰42 U.S.C.S. § 1397aa(a) (LexisNexis 2022).

⁴¹¹See generally 42 U.S.C.S. § 1397bb (LexisNexis 2022).

⁴¹²42 U.S.C.S. § 1397bb(b)(1) (LexisNexis 2022).

⁴¹³See generally 42 U.S.C.S. § 1397dd (LexisNexis 2022).

⁴¹⁴Financing, MEDICAID.GOV, <https://www.medicaid.gov/chip/financing/index.html> (last visited Oct. 24, 2022) [<https://perma.cc/5V5F-RF9B>].

⁴¹⁵42 U.S.C.S. § 1397aa (LexisNexis 2022); *CHIP State Program Information*, MEDICAID., <https://www.medicaid.gov/chip/state-program-information/index.html> gov (last visited Oct. 24, 2022) [<https://perma.cc/AMB7-4TVH>]; *Key CHIP design features*, THE MEDICAID AND CHIP PAYMENT AND ACCESS COMM'N, <https://www.macpac.gov/subtopic/key-design-features/> (last visited Oct. 24, 2022) [<https://perma.cc/L894-NNV2>].

⁴¹⁶42 U.S.C.S. § 1397cc (LexisNexis 2022).

⁴¹⁷*Id.*

⁴¹⁸42 U.S.C.S. § 1397aa (LexisNexis 2022)

⁴¹⁹*Id.*

⁴²⁰*Id.*

⁴²¹42 U.S.C.S. § 1397jj (LexisNexis 2022).

⁴²²*Id.*

⁴²³42 U.S.C.S. § 1397jj(a)(24) (LexisNexis 2022).

⁴²⁴42 U.S.C.S. § 1397jj(a)(28) (LexisNexis 2022).

In 2021, CMS issued a study about how state CHIP programs can address social determinants of health.⁴²⁵ This research study gave states guidance about how they can expand coverage under current law to include housing-related services and supports, non-medical transportation, educational services, and employment supports.⁴²⁶ This CMS report provided guidance about home-delivered meals, but did not provide guidance about produce prescriptions.⁴²⁷ This document does not make clear whether CMS considers meals as part of a separate legal category from other nutritional interventions such as produce prescriptions.⁴²⁸ Moving forward, CMS could interpret “child health assistance” broadly, approve state CHIP innovations, and provide guidance and encouragement for state programs to implement produce prescriptions.

As with Medicaid, HHS is authorized to approve experimental, pilot, or demonstration projects within CHIP.⁴²⁹ These could be authorized through 1115 Section waivers.⁴³⁰ Additionally, CHIP authorizes states to improve the health of low-income children through the Health Services Initiative (HSI).⁴³¹ This program allows health services such as emergency food relief for families.⁴³² States could potentially implement produce prescriptions through CHIP HSIs.

Funding

Produce prescriptions would require a public investment. Funding should come from the U.S. Department of Health and Human Services through CMS.⁴³³ Funding could come from general income and corporate tax revenues. USDA funding could also work, but is a less ideal choice, because the primary focus of this policy is on improving health;⁴³⁴ the USDA would potentially tie increased funding to specific agricultural goals.⁴³⁵ (Recall that while this policy proposal would greatly benefit agricultural communities,⁴³⁶ the primary goal of this policy proposal is to improve the diets of Medicare, Medicaid, and CHIP recipients.) Although CMS funding would be a better option for achieving health care goals, USDA funding could be more practical and easier to implement or pass. For example, the government may find it easy to have state and local agencies that administer SNAP also administer produce prescription programs.⁴³⁷ While these agencies could administer produce prescriptions using CMS funding, they already administer WIC and SNAP through USDA funding, so it may be easier to develop another program with the same funding source. If the federal government were to fund produce

⁴²⁵CMS Issues New Roadmap for States to Address the Social Determinants of Health to Improve Outcomes, Lower Costs, Support State Value-Based Care Strategies, CTR. FOR MEDICARE & MEDICAID SERV. (Jan. 7, 2021) <https://www.cms.gov/newsroom/press-releases/cms-issues-new-roadmap-states-address-social-determinants-health-improve-outcomes-lower-costs> [<https://perma.cc/5QSC-YD4A>].

⁴²⁶*Id.*

⁴²⁷GARFIELD ET AL., *supra* note 12, at 19.

⁴²⁸*Id.*

⁴²⁹Chiquita Brooks-LaSure & Daniel Tsai, *A Strategic Vision for Medicaid And The Children’s Health Insurance Program (CHIP)*, HEALTH AFF. BLOG (Nov. 16, 2021). <https://www.healthaffairs.org/doi/10.1377/forefront.20211115.537685/> [<https://perma.cc/4F4G-JF3J>].

⁴³⁰Letter from Anne Marie Costello, Acting Deputy Adm’r and Dir., Dep’t of Health & Hum. Servs. to State Health Official (Jan. 7, 2021).

⁴³¹Ctr. for Medicare & Medicaid Serv., *supra* note 296, at 10, 19.

⁴³²*Id.* at 31-32.

⁴³³See GARFIELD ET AL., *supra* note 12, at 14; HENNESSEE, *supra* 80, at 14, 17.

⁴³⁴See, e.g., *id.* at 13-14 (describing the Gus Schumacher Nutrition Incentive Program).

⁴³⁵The United States Department of Agriculture has historically focused heavily on agricultural and farming interests. While these interests are important, the focus of produce prescriptions is on the health care impacts of food rather than the agricultural impacts. The USDA should adapt its own policies to help American farmers to sustainably meet the increased fruit and vegetable demand from this policy.

⁴³⁶HENNESSEE, *supra* note 80, at 14.

⁴³⁷See GARFIELD, *supra* note 259, at 12.

prescriptions through the USDA, the government should set strict definitions to preserve the focus of the program on health care rather than agricultural goals.

State and federal administration

At the federal level, there are multiple ways to administer a national produce prescription program. The federal government could administer a national produce prescription card through electronic benefits transfers. A federal national produce prescription program could coordinate with federal Medicare and state and local Medicaid and CHIP agencies to provide benefits. Implementation by the federal government would maximize uniformity and might thus be the simplest approach.

Alternatively, all produce prescriptions could be developed on a state level. State-by-state programs would be more flexible and would potentially allow for more public participation and community centered designs. States could model produce prescription electronic benefits and administration on either local SNAP or WIC programs. WIC programs are already designed to cover only certain foods, so states could copy and adapt rules from existing WIC programs.⁴³⁸ State-run produce prescriptions would allow states to act as laboratories of democratic administration, thereby increasing creative potential. While state programs would be more flexible, they may not maintain uniform quality across all states. Congress or CMS could provide guidelines and minimum requirements to make sure that all produce prescriptions meet a nationwide standard. Finally, produce prescriptions could be run at the federal level for Medicare and at the state level for Medicaid and CHIP. This may potentially be the least efficient route.

Under any of these options, agencies would need to carefully safeguard patient privacy information to comply with HIPAA. Federal agencies have already developed processes for securely sharing health information. For example, WIC, SNAP, and Medicaid already share data in ways that protects patient privacy.⁴³⁹ No matter how produce prescriptions are ultimately organized, though, effective produce prescriptions would most likely benefit from cross-agency collaboration.

Flexibility, public participation, and community-centered designs

Produce prescription designs should be flexible and amenable to local adaptation.⁴⁴⁰ Because Medicaid and CHIP are administered at the state level, these programs would provide many opportunities for local adaptation. Human knowledge is widely dispersed among diverse individuals in the public.⁴⁴¹ No single public leader or government official will possess complete knowledge of every community.⁴⁴² So in designing a produce prescription program, the government should engage with patients, clinics, and retailers to establish an effective and efficient program.⁴⁴³ The federal government can use several approaches to design programs that directly benefit diverse communities. First, CMS can give state and local governments the flexibility to improve produce prescription programs. Second, CMS should aim to have inclusive participatory bureaucracy. The government benefits from diverse experiences when the public is given a voice in bureaucratic planning.⁴⁴⁴ Finally, governments should incentivize innovative partnerships between nonprofits, health care organizations, and grocery stores.

⁴³⁸ Auvinen et al., *supra* note 181, at 11.

⁴³⁹ See, e.g., NEUBERGER, *supra* note 261, at 5-6.

⁴⁴⁰ HENNESSEE, *supra* note 80, at 17.

⁴⁴¹ SUNSTEIN, *supra* note 83, at 80.

⁴⁴² *Id.*

⁴⁴³ Auvinen et al., *supra* note 181, at 1.

⁴⁴⁴ SUSAN L. MOFFITT, MAKING POLICY PUBLIC: PARTICIPATORY BUREAUCRACY IN AMERICAN DEMOCRACY xii, 224 (Cambridge Univ. Press 2014).

Communities can participate in produce prescription programs in many ways. Local agencies, nonprofits, and businesses could partner to provide culturally appropriate meal plans, recipes, and cooking classes.⁴⁴⁵ Across the nation, many nonprofits are already fighting food insecurity through educational cooking and meal plan classes.⁴⁴⁶ Local partnerships could allow for culturally appropriate educational classes and could foster community. These organizations could expand their impact if more people are motivated to eat more fruit and vegetables.

Political considerations and implications

Produce prescriptions have the potential to appeal to people across the political spectrum, given the social implications of this policy proposal or the impact that this proposal could have on government health care finances. Some may be particularly interested in how produce prescriptions in Medicare and Medicaid could improve the lives of at-risk groups such as historically disadvantaged racial and ethnic minorities. Others may be interested in how this policy could increase fiscal responsibility and would reduce burdens on our public health care system. Federal produce prescriptions aim to improve the health of patients who currently receive federal health care. The number of eligible Medicare patients is set to greatly increase in the coming decades.⁴⁴⁷ Both Medicare and Medicaid face challenging financial futures.⁴⁴⁸ The Medicare Trustees estimate that the Health Insurance Trust Fund will run out of reserves by 2029.⁴⁴⁹ And produce prescription programs could potentially reduce the financial burden imposed by diet-related chronic diseases on the health care system.⁴⁵⁰

Still others may be interested in how produce prescriptions relate to individual choice. Produce prescriptions would empower public health care patients to treat diet-related conditions like pre-diabetes with dietary change. Current policy limits patient choices to drugs and medical treatment. Finally, some may support produce prescriptions as a means of increasing funding of specialty crops and support agricultural communities. Produce prescriptions could shift public finances from pharmaceutical companies to rural farming communities throughout the U.S. Congressional support for food as medicine has reflected the bipartisan appeal of improving American diets. For example, the House Hunger Caucus includes a bipartisan Food as Medicine Working Group.⁴⁵¹ Other preventive medicine proposals within Medicare have also gained bipartisan support.⁴⁵² The 2018 Farm Bill included \$25 million dollars to implement and study produce prescription programs.⁴⁵³ The Farm Bill was passed on a bipartisan basis in a Republican-controlled House and Senate and signed by President Trump. More recently, with support of President Biden, a Democratic-controlled House and Senate passed \$40 million in funding for produce prescriptions through the American Rescue Plan Act.⁴⁵⁴

Expanding Medicare and Medicaid to cover produce prescriptions could also face opposition from competing interests and legislative priorities.⁴⁵⁵ Some corporate and political groups may fear

⁴⁴⁵White, *supra* note 103, at 366.

⁴⁴⁶RODRIGUEZ ET AL., *supra* note 78, at 9.

⁴⁴⁷FELDSTEIN, *supra* note 41, at 125.

⁴⁴⁸*Id.* at 149.

⁴⁴⁹*Id.* at 120.

⁴⁵⁰Lee et al., *supra* note 212, at 7-81.

⁴⁵¹Helena Bottemiller Evich, *Bipartisan Nutrition Group Kicks off in House*, POLITICO (Jan. 22, 2018), <https://www.politico.com/story/2018/01/22/bipartisan-nutrition-group-kicks-off-in-house-354850> [<https://perma.cc/Y9B2-Z7N>].

⁴⁵²Press Release, Sen. Rob Portman, Portman, Wyden Introduce Bill to Help Lower Medicare Costs by Keeping Seniors Healthy, (Mar. 28, 2012), <https://www.portman.senate.gov/newsroom/press-releases/portman-wyden-introduce-bill-help-lower-medicare-costs-keeping-seniors> [<https://perma.cc/UBX2-85LC>].

⁴⁵³GARFIELD ET AL., *supra* note 12, at 4.

⁴⁵²Press Release, USDA NIFA Invests \$40M to Improve Dietary Health and Reduce Food Insecurity, (June 1, 2022), <https://www.nifa.usda.gov/about-nifa/press-releases/usda-nifa-invests-40m-improve-dietary-health-reduce-food-insecurity> [<https://perma.cc/F77S-VDP6>].

⁴⁵⁵GARFIELD ET AL., *supra* note 12, at 16.

that increased produce consumption would decrease consumption of highly processed snack foods.⁴⁵⁶ Increased demand could also increase the cost of produce if the supply does not increase as well.

Limitations of current research

Many studies have shown that produce prescriptions could result in a wide range of benefits. However, these studies lack uniform metrics, have some inconsistent results, and include differing variables. Past research designs have had little consistency and are hard to compare.⁴⁵⁷ Additionally, these studies have had very different study designs.⁴⁵⁸ While such diverse research has demonstrated that produce prescriptions could benefit a wide range of individuals and communities, the lack of consistent research design makes it more challenging to precisely quantify potential financial outlays and savings. Before implementing a national produce prescription program, the federal government could consider smaller scale programs outlined earlier in this article.

Future studies should use uniform models and metrics to design an effective program.⁴⁵⁹ Researchers should analyze ideals for dosage, prescription length, and target health conditions.⁴⁶⁰ Additionally, future researchers should study the economic impacts of produce prescriptions.⁴⁶¹ Congress could consider a CBO study before scaling up produce prescriptions in Medicare, Medicaid, and CHIP.

State-by-state proposals independent of federal action

State and local governments can also continue to expand produce prescription programs. While state-level expansion offers opportunities, state governments have less financial incentive to reduce Medicare costs.⁴⁶² Because Medicare is funded by the federal government, potential cost savings from reduced chronic diseases among these patients would most directly affect the federal budget. Medicaid is jointly funded by the federal and state governments. Thus, states have a potential financial incentive to offer produce prescriptions for Medicaid patients. Without federal waivers, states cannot spend federal Medicaid money on produce prescriptions. While waiting for federal action, state and local governments should continue to partner with nonprofit and health care organizations to offer produce prescriptions.

Next steps for implementing a produce prescription program

The federal government could start with large pilot projects that target Medicare and Medicaid populations.⁴⁶³ CMS could cover produce prescriptions as part of a demonstration model.⁴⁶⁴ CMS could also issue waivers for states to test produce prescriptions. CMS and HHS should provide guidance and technical assistance to help states implement produce prescriptions.⁴⁶⁵ These agencies should measure new programs carefully using standardized metrics to establish the data necessary for an eventual scaled-up national program.

In addition to including produce prescriptions in Medicare, Medicaid, and CHIP, Congress should also offer produce prescriptions through the Veterans Health Administration.⁴⁶⁶ This paper focused on

⁴⁵⁶This is the economic concept known as substitution.

⁴⁵⁷HENNESSEE, *supra* note 80, at 16.

⁴⁵⁸Auvinen et al., *supra* note 181, at 10.

⁴⁵⁹HENNESSEE, *supra* note 80, at 16.

⁴⁶⁰GARFIELD ET AL., *supra* note 12, at 11.

⁴⁶¹The section of this Article entitled “Funding” discusses current economic research and limitations.

⁴⁶²See FELDSTEIN, *supra* note 41, at 112.

⁴⁶³HENNESSEE, *supra* note 80, at 17.

⁴⁶⁴Ctr. for Medicare & Medicaid Serv., *supra* note 296, at 10, 19. GARFIELD ET AL., *supra* note 12, at 16.

⁴⁶⁵GARFIELD ET AL., *supra* note 12, at 19.

⁴⁶⁶*Id.* at 17-18.

Medicare, Medicaid, and CHIP because these programs are heavily connected. Food insecurity is also a major issue among veterans.⁴⁶⁷ Produce prescriptions could improve the diets of veterans⁴⁶⁸ and potentially decrease financial pressures on the Veterans Health Administration. The federal government could run initial pilot programs within Medicare, Medicaid, CHIP, or the Veterans Health Administration. After further data is gathered, the government could scale up produce prescriptions within all these federal programs.

Congress could also consider expanding funding and research for produce prescriptions through the 2023 Farm Bill. Ideally, produce prescription should principally be a federal health, rather than agricultural policy. Although CMS would be a better agency for produce prescriptions than the USDA, funding through the Farm Bill could lay the foundation for a larger future program.

After sufficient research exists for a national program, Congress should consider amending the Social Security Act to include produce prescriptions in Medicare and Medicaid. While codification in the Social Security Act would be the best approach for long-term produce prescriptions, this method would also be the most politically challenging. Smaller pilot projects could produce the evidence needed to support codifying produce prescriptions in the Social Security Act. Amending the Social Security Act would allow produce prescriptions to be included in the baseline benefits of these programs.⁴⁶⁹

Indirect benefits, limitations, and disadvantages of produce prescriptions

Indirect benefits of produce prescriptions

Local and regional farm economies stand to benefit significantly from the inclusion of federally funded produce prescriptions within Medicare, Medicaid, and CHIP.⁴⁷⁰ If produce prescriptions are redeemed at farmers markets or through CSAs, local farm economies could benefit even more substantially.⁴⁷¹ Allowing the application of produce prescriptions at farmers markets would incentivize consumption of healthy locally grown food, and would also stimulate local economies by incentivizing local farms to put their items up for sale at the markets.⁴⁷²

A national produce prescription policy would also emphasize to the American public that diet has a strong, direct impact on overall health outcomes. Americans often view food and medicine separately, but what we eat daily has an extraordinary impact on health and longevity.⁴⁷³ Including produce prescriptions in Medicare and Medicaid would further illuminate to patients the inextricable link between diet and medicine. A national produce prescription program would help to answer the “resounding call within the public health and medical fields that our current health system does not do enough to prevent disease and promote overall well-being.”⁴⁷⁴

The risks, limitations, and disadvantages of produce prescriptions

The institution of a national produce prescription program would not be without its risks and limitations. For example, some patients simply do not follow their prescriptions, a pattern that

⁴⁶⁷TAMARA DUBOWITZ, FOOD INSECURITY AMONG VETERANS: VETERANS’ ISSUES IN FOCUS (Rand Corp. 2021) <https://www.rand.org/pubs/perspectives/PEA1363-2.html> [<https://perma.cc/GB9Q-K9MQ>].

⁴⁶⁸GARFIELD ET AL., *supra* note 12, at 18-19.

⁴⁶⁹*Id.* at 15.

⁴⁷⁰HENNESSEE, *supra* note 80, at 14. This would increase the demand for fruit and vegetables and therefore benefit the agricultural community.

⁴⁷¹Karen Bishop, *Veggie Rx: Using Food as Medicine: It’s Not Just About More Food: It’s About the Right Kind of Food*, BETTER THE FUTURE (Nov. 10, 2020), <https://betterthefuture.org/veggie-rx-using-food-as-medicine/> [<https://perma.cc/NSM4-LLJR>]. Farmers markets have created similar incentive programs under SNAP such as “Double Up Food Bucks” programs where SNAP benefits have additional purchasing power.

⁴⁷²*Id.*

⁴⁷³White, et al., *supra* note 103, at 366.

⁴⁷⁴RODRIGUEZ ET AL., *supra* note 78, at 7.

threatens the efficacy of any prescription-based program. Research identifies several common factors that impact whether or not a patient follows their prescription.⁴⁷⁵ These include treatment complexity, monetary costs, the presence of psychological problems, and poor provider-patient relationships.⁴⁷⁶ Patients without primary health providers may also be less likely to adhere to prescriptions and follow health advice,⁴⁷⁷ and twenty-three percent of Americans lack a primary health care provider (with disparities apparent along racial and ethnic, sex, educational, and income lines).⁴⁷⁸

Additionally, while produce prescriptions have the potential to fortify children's health, successful implementation would require parental involvement.⁴⁷⁹ One produce prescription program directed at Indigenous Australian children did not result in significant health improvements,⁴⁸⁰ perhaps because the targeted children had major existing nutritional challenges and likely had less control over food preparation.⁴⁸¹ As such, governments and partner organizations should design programs to train and educate parents unfamiliar with fruit and vegetable preparation. One program implemented in the Navajo Nation provided prescription fruit and vegetables *as well as* monthly health coaching to parents for six months.⁴⁸² This program improved the fruit and vegetable consumption of young children and improved their overall health.⁴⁸³

Patients could also lose or misplace produce prescriptions.⁴⁸⁴ Governments should design produce prescription programs that minimize these risks. For example, patients may be less likely to lose, misplace, or destroy electronic benefit transfer cards than paper prescriptions. Finally, some patients do not regularly visit physicians, which would render produce prescriptions—and other prescriptions—difficult to obtain.⁴⁸⁵ CMS can address this challenge by allowing a wide range of health care professionals such as pharmacists and nutritionists to write produce prescriptions. Ultimately, like all health policies, a national produce prescription program policy would inevitably fail to reach some individuals. But the health care system should continue to strive to improve patient contact with the most vulnerable individuals in our country. Produce prescriptions might even serve to build trust between physicians and patients by providing patients with an alternative, affordable route to improving their health.

An additional concern about the efficacy and wisdom of implementing a national produce prescription program is that doing so could increase grocery prices. Produce prescriptions would increase demand for fruit and vegetables, so unless this policy change is accompanied by an increase in fruit and vegetable supply, this could result in higher fruit and vegetable prices for other consumers. On the other hand, increased demand for produce, particularly in food deserts, could potentially lead to more efficient supply chains and lower prices in some disadvantaged communities.

Finally, the health care system in the United States is already a burdened one; is it really the best vehicle through which to address SDOHs? Addressing food insecurity through the health system may not be the most efficient route by which to do so. However, although the United States' health care system is indeed overburdened, much of this burden springs directly from diet-related chronic illnesses. It might take time, but because produce prescriptions would improve overall health outcomes, they would actually serve to *decrease* the overall burden on the health care system. In turn, more health care resources could be reallocated away from preventable diseases.

⁴⁷⁵HOUGH, *supra* note 145, at 116.

⁴⁷⁶*Id.*

⁴⁷⁷*Id.*

⁴⁷⁸HENNESSEE, *supra* note 80, at 15.

⁴⁷⁹Swartz, *supra* note 290, at 966.

⁴⁸⁰Cavanagh et al., *supra* note 15, at 2639.

⁴⁸¹*Id.*

⁴⁸²Jones et al., *supra* note 183, at 4. This program included healthy traditional foods that fit well with the community.

⁴⁸³*Id.*

⁴⁸⁴HENNESSEE, *supra* note 80, at 15.

⁴⁸⁵See generally Jennifer M. Taber et al., *Why do People Avoid Medical Care? A Qualitative Study Using National Data*, 30 J. GEN. INTERNAL MED. 290-297. (2014)

Similarly, some health care professionals may be concerned about adding another program to their already significant workflows. To address these concerns, CMS should design a simple, efficient program that is easy to streamline into pre-existing patient care routines. Ultimately, produce prescriptions are just another treatment—much like the pharmaceutical prescriptions that doctors already write for patients—yet they do not present the same risks of overdose and addiction, and do not necessitate the need for as stringent oversight.

Conclusion

Including produce prescriptions in Medicare, Medicaid, and CHIP is an important step in addressing the diet-related health crisis in the United States. These health care programs are critical to the well-being of historically disadvantaged racial and ethnic minorities, elderly persons, children, pregnant women, persons with disabilities, and low-income persons. Many patients in these programs either have or are at risk of developing diet-related chronic diseases. Produce prescriptions are a proven way to empower patients to change their diets. Prescriptions motivate patients while subsidies make dietary change affordable. National produce prescriptions would improve lives by decreasing the incidence and severity of diet-related chronic diseases. Including produce prescriptions in Medicare, Medicaid, and CHIP could substantially increase the health and well-being of many patients, and the benefits of a national produce prescription program would most strongly serve underprivileged populations.

Further research is needed to determine the cost-effectiveness of produce prescriptions relative to other types of treatment. CMS should move forward with regulatory waivers, administrative programs, and pilot projects. And CMS should evaluate these produce prescription programs using uniform metrics and could then scale up these programs nationally in Medicare, Medicaid, and CHIP. Ultimately, after further research, the federal government should strongly consider codifying produce prescriptions as a benefit so that all Medicare, Medicaid, and CHIP patients can benefit from this dietary intervention.

Weston McClain is a J.D. candidate at the University of Oregon School of Law, anticipated to graduate in May of 2023. He graduated Phi Beta Kappa and magna cum laude from the University of Oregon with a B.Sc. in History. Mr. McClain would like to thank his family for their support throughout law school; Professor Joan Rocklin for her writing and research guidance; Professor Michael Fakhri, the United Nations Special Rapporteur on the Right to Food, for his insights; and his fellow Board members and the staff of FOOD For Lane County for their passion about innovatively improving health and fighting food insecurity. Mr. McClain would also like to thank the University of Oregon School of Law for funding his research as the 2021 Hans Linde Fellow. This paper received Honorable Mention in The Seventh Annual AUWCL National Health Law Writing Competition. Mr. McClain plans to begin medical school in the fall of 2023.

Cite this article: McClain, W. (2022), 'Preventive Care: Improving Health of Medicare, Medicaid, and Children's Health Insurance Program Patients Through Access to Fresh Fruit and Vegetables', *American Journal of Law & Medicine*, 48, pp. 343–379. <https://doi.org/10.1017/amj.2023.2>