

# Support policies that foster a healthy food environment and incentivize healthy food purchases to mitigate cancer inequities

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Cite this as: *TBM* 2021;XX:XX-XX  
doi: 10.1093/tbm/ibab081

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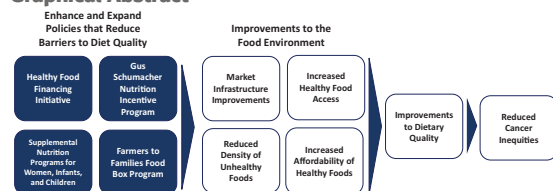
## Abstract

The COVID-19 pandemic has highlighted the inequitable access to resources, leading to a disproportionate burden of disease in vulnerable communities in the USA. However, these inequities in health outcomes are not limited to COVID-19. Approximately 18% of cancers are related to dietary behaviors and excess body weight. Underserved communities, such as minority racial/ethnic groups living in neighborhoods of low socioeconomic status, experience barriers to healthy eating including lack of access to high-quality healthy foods and higher availability of unhealthy foods and beverages in local retail food outlets. Strikingly, these same populations are more likely to die from cancers related to dietary intake and obesity like colorectal, liver, and pancreatic cancers. To reduce cancer inequities, policy makers can act by supporting programs that incentivize healthy food purchases and improve the local food environment in underserved communities.

## Keywords

Health equity, Cancer, Health policy, Farm Bill, Healthy Food Financing Initiative, Supplemental Nutrition Assistance Program

## Graphical Abstract



## THE PROBLEM

Cancer ranks as the second leading cause of death in the USA [1], and medical care costs associated with cancer treatment is projected to increase to \$246 billion annually by 2030 [2]. Regrettably, the burden of cancer is not equally distributed [1, 3, 4]. Compared with non-Hispanic Whites, non-Hispanic African American/Black men consistently have higher rates of incidence and mortality with cancers of the colon and rectum, prostate, liver, pancreas, and stomach [5]. In addition, hepatocellular carcinoma is more prevalent

## Implications

**Practice:** An improvement in dietary behaviors can lead to substantial savings in healthcare costs and reduce cancer inequities in underserved communities that have disproportionate rates of prominent cancer risk exposures including obesity and unequal access to healthy foods and beverages.

**Policy:** Policymakers who support reducing cancer inequities should implement policies that can build a healthy food environment and incentivize healthy food purchases in underserved communities.

**Research:** Future research is needed to examine the feasibility of implementing nationwide food policies that expand current short-term or grant-based food initiatives and programs. If expanded, continuing evaluation of these programs is needed to determine whether improvements to the local food environment are successfully implemented and contribute to a reduction in cancer health inequities.

in American Indian/Alaskan Natives and Hispanic/Latinx individuals than other races and ethnicities [5]. The American Institute for Cancer Research projects that lifestyle changes could prevent up to 18% of these cancers [6]. Specifically, a healthy lifestyle that includes exercise, a diet low in red and processed meat, and adequate consumption of fiber and calcium may prevent 47% of colorectal cancers [6]. Additionally, reducing excess body fat could lower risk of 11 types of cancer, preventing 132,800 cancers annually [7].

Improved dietary behaviors could lead to substantial savings in cancer-related healthcare costs [8–11]. However, underserved communities, particularly minorities living in low-socioeconomic status (SES) neighborhoods, face unique barriers that may prevent healthful dietary behaviors and increase cancer risk [12–16]. For example, underserved communities have fewer supermarkets and a higher density of convenience stores that stock fewer healthy foods like fresh produce [14–17]. Inadequate food storage

equipment and market infrastructure [18] contribute to reduced quality of fresh foods in underserved communities [19, 20]. Additionally, underserved communities have a higher density of fast-food outlets and advertising space promoting unhealthy foods and beverages than higher-SES communities [21–23]. Consequently, people living in underserved communities have disproportionate rates of obesity and have higher rates of diet-associated diseases including diabetes, cardiovascular disease, and cancer [24–26]. These inequities were further highlighted by the COVID-19 pandemic, during which individuals with obesity were three times more likely to be hospitalized from the disease and African American/Black and Hispanic/Latinx communities suffered from higher rates of COVID-19-related death [27, 28]. Thus, policies that increase access to affordable healthy foods may reduce inequitable burden of disease in populations that have disproportionate rates of obesity and unequal access to healthy foods and beverages.

### CURRENT POLICIES

The Agricultural Act of 2018 expanded the allocation of federal funds for grants and initiatives that increase the accessibility of healthy and localized food sources to help achieve food and health equity in all communities. The Healthy Food Financing Initiative (HFFI) provides investments to community projects that improve healthy food access in underserved areas [29, 30]. The Gus Schumacher Nutrition Incentive Program (GusNIP) provides grants to increase the value of Supplemental Nutrition Assistance Program (SNAP) funds toward the purchase of fruits and vegetables at local farmers markets [31]. The Women, Infants, and Children (WIC) Farmers Market Nutrition Program provides vouchers to purchase fruits and vegetables to low-income mothers with young children [32]. More acutely, as part of the Coronavirus Food Assistance Program, the Farmers to Families Food Box Program provided over 50 million boxes of food to support both farmers and families impacted by the pandemic [33].

While it is too early to know the implications of these programs on the long-term health of populations suffering from cancer inequities, preliminary outcomes have been largely positive. Over 70% of customers interviewed after the implementation of an HFFI project reported purchasing more fruits and vegetables due to increased retail access [30]. Consumers participating in nutrition incentive programs like GusNIP consume more fruits and vegetables, experience greater food security, and observe overall improvements in health [34]. Revisions to the WIC food package to align with the Dietary Guidelines for Americans have led to improvements in dietary quality in participant households [35]. In addition to meeting their baseline goal of improving nutrition intake among low-income participants, WIC and GusNIP incentives have led to increased

availability and diversity of fruits and vegetables at local food retailers [34, 35]. While these observations are encouraging, longitudinal studies that observe the health of program participants over time are needed to understand their broad impacts.

### POLICY RECOMMENDATIONS

Incentivizing individuals to purchase more healthful foods, as well as local retailers to offer more healthful options, could improve overall diet and lead to a reduction in diet-associated cancers.

**Promoting nationwide availability of programs that incentivize purchase of fruits and vegetables to target populations with an increased cancer burden**

Intervention studies show that a 30% cash incentive for fruit and vegetable purchases could lead to a 26% increase in consumption over 12 months [36, 37]. However, recent commentary suggests that GusNIP funds are inequitably distributed and particularly leave behind lower-income states that have higher rates of obesity [38]. Models project that national institution of this program could prevent approximately 4,665 new cancer cases annually in the USA, particularly in populations suffering from cancer health inequities [11]. As an added benefit, GusNIP programs support U.S. farmers by widening the customer base of local farmers markets and increasing fruit and vegetable sales at local grocery stores [34].

**Increasing support toward Farm Bill initiatives that subsidize healthier crops and incentivize improvements to the local food environment for all Americans**

HFFI funds have introduced over 1,000 healthy food projects in the USA including new retail food outlets and improved retail food store infrastructure in underserved communities. While successful, many of these nutrition programs are not subject to mandatory funding and rely on the annual appropriations of funds [29, 30]. Additionally, the HFFI funded less than 10% of project applications in 2020, which is insufficient to meet current needs [39]. Population-wide fiscal policies that support the pricing of fruits and vegetables so that they are affordable for underserved communities, yet profitable for food retail outlets and farmers, could support HFFI programs. Such population-wide fiscal policies could integrate pricing incentives with food assistance programs such as the SNAP or WIC, or provide agriculture subsidies for farmers to grow specific crops.

**Incentivizing farmers to donate surplus foods to increase food access to underserved communities, reduce food waste, and build economic resiliency in the food supply chain**

In the wake of COVID-19, the Farmers to Families Food Box Program provided food to millions of individuals that were food insecure, reducing

unemployment and food waste throughout the food supply chain [33]. However, food waste and inequitable food access are public health problems that exist separate from the current pandemic. In fact, as much as 31% of food is wasted annually in the USA [40]. Creating tax incentives and expanding liability protections to farmers for the donation of safe meat, dairy, and produce will divert foods away from the waste stream and into the hands of individuals in underserved communities suffering from disproportionate rates of diet-associated cancers [33].

## CONCLUSION

The COVID-19 pandemic has put inequitable access of resources under the microscope, as underserved communities continue to bear the burden of disproportionate infection rates and death [27, 28]. However, poor health outcomes in these same communities are not limited to the current crisis. Despite the current pandemic, cancer remains a leading cause of death within the USA with underserved communities disproportionately burdened [1]. Given that nearly one in five cancers are related to lifestyle behaviors, barriers to a healthful diet remain a key factor driving longstanding inequities in cancer incidence and death rates in underserved communities [6]. Policy makers can take action to reduce cancer inequities by supporting Federal programs that increase the access of healthful food in the local environments of underserved communities and incentivize the purchase of healthier foods by consumers.

## Acknowledgments

This study was funded by the National Cancer Institute R01CA204808 (H.R.G., J.M.R., and L.T.-H.), T32CA057699 (P.G.W. and J.C.S.-F.), and U54CA202997 (M.L.F. and L.T.-H.); the National Institute on Minority Health and Health Disparities U54MD012523 (L.T.-H., S.K., J.M.R., and H.R.G.); and the American Cancer Society MRSG 14-025-01-CNE (L.T.-H.)

## Compliance with Ethical Standards

**Conflict of Interest:** All authors declare that they have no conflicts of interest.

**Human Rights:** This article does not contain any studies with human participants performed by any of the authors.

**Informed Consent:** This study does not involve human participants and informed consent was therefore not required.

**Welfare of Animals:** This article does not contain any studies with animals performed by any of the authors.

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