

POLICY FORUM: PEER-REVIEWED ARTICLE

Strategies to Help Health Care Organizations Execute Their Food System Leadership Responsibilities

Susan Veldheer, DEd, RD and Daniel R. George, PhD, MSc

Abstract

Food systems influence environmental sustainability and health. The fact that our current food production and distribution practices neither support nor promote planetary or human health raises ethical concerns. Since health organizations offer food to patients, community members, and employees, they are situated at key intersections among food systems, agricultural policies and practices, and public health. This article considers the nature and scope of health care organizations' local food system leadership responsibilities and describes how health care organizations' food practices can help improve health outcomes and motivate equity.

Food Production Emissions

Modern agricultural food systems exert a major impact on both the environment and human health. Food production accounts for an estimated 19% to 29% of greenhouse gas (GHG) emissions and an estimated 70% of global freshwater withdrawals. ^{1,2} The production of animal-based protein (eg, beef, pork, and chicken) makes the largest contribution to GHG and imposes the greatest burden on water and land resources. ^{3,4} In contrast, plants (eg, fruits, vegetables, legumes, and grains) have the lowest environmental impact. ^{3,4} At the same time, there is compelling evidence demonstrating that plant-based diets high in fruits and vegetables can be used for primary prevention or treatment of many of the most prevalent chronic diseases in the United States, including cardiovascular disease, type-2 diabetes, obesity, and some cancers. ^{5,6,7,8,9} Thus, the imbalance of our current food production practices not only degrades environmental health, but also has implications for human health.

However, at a time of historic wealth and income inequality, when life expectancy in the United States has reversed for the first time in a century and 6 of 10 Americans are living with at least one diet-related chronic disease (eg, heart disease, obesity, diabetes), 10,11 fostering healthier diets remains a persistent challenge. 12 Food production and consumption patterns that are misaligned with healthy dietary patterns are in part driving these troubling public health trends. For instance, population-level red meat intake is higher than recommended in North America and in most regions of the world, while intake of fruits and vegetables, legumes, whole grains, and nuts is well

994 journalofethics.org

below recommended levels in most regions.^{4,13} Dietary patterns that perpetuate poor health are influenced by a complex, interrelated, global and domestic network of stakeholders, policies, laws and regulations, supply and food distribution chains, sociocultural norms, and individual behaviors that reproduce current practices and associated outcomes. The diffuse nature of this system makes it challenging to address population health so that disparities can be ameliorated, not perpetuated. Equitable and ethical solutions will require substantial changes in food systems, production, and consumption at the local, national, and global levels, including within the institutions and structures that are degrading human and planetary health.¹⁴

As actionable strategies are developed, the use of established frameworks can ensure that multiple perspectives are considered. The United Nations (UN) Sustainable Development Goals (SDG), designed to "promote prosperity while protecting the environment and tackling climate change," 15 is one such framework that can be used to assess whether food systems are ethical and sustainable. Of the 17 SDG, at least 9 are relevant to food systems, including no poverty (SDG 1), zero hunger (SDG 2), good health and well-being (SDG 3), reduced inequalities (SDG 10), sustainable cities and communities (SDG 11), responsible consumption and production (SDG 12), climate action (SDG 13), life below water (SDG 14), and life on land (SDG 15). 15 With the UN SDGs in mind, health care systems, including hospitals and outpatient clinical care, can play a critical role in ethical and sustainable health promotion.

Because health and food are so intimately connected, health care organizations are poised to provide more local and regional leadership at the intersection of food systems, agriculture, and human health. However, they have historically been on the periphery of food systems discussions. ¹⁶ Moreover, in the United States, fee-for-service health care models have historically disincentivized organizations from making strategic investments in preventive and community health (a dynamic some have termed "sick care" rather than health care). ¹⁷ Political-economic and cultural forces are, however, beginning to shift incentives, which necessitates that health care systems make a meaningful impact both on population-level health outside the clinic and on patient-level health inside the clinic. ¹⁸

Here, we focus on 2 separate but potentially complementary pathways by which health care organizations can integrate sustainable food systems policies that improve human and planetary health into existing operational activities: (1) population-level community health needs assessments (CHNAs) and (2) patient-level clinical screening for social determinants of health (SDoH).

Community Health Needs

It is well established that community-level interventions make a greater impact on aggregate health than individual-level interventions, such as patient care delivered within a health care setting. 19,20 Thus, in 2010, the Patient Protection and Affordable Care Act (ACA) focused on improving community-level factors by requiring nonprofit hospitals to conduct CHNAs and develop plans to address identified priorities. 21 The ACA encouraged alignment of these efforts with population-level community benefit rather than patient-level benefit because a narrow patient focus excludes community members who might not interface with the system (eg, the underinsured or uninsured). It also created an incentive structure for hospital systems to follow through with CHNAs by penalizing failure to do so with a possible loss of tax-exempt status and a \$50 000 excise tax. 22 In this way, the ACA sought to nudge health care institutions to assume

greater responsibility for their communities and patients by incentivizing them to develop innovative, population-level intervention strategies.

Identifying pressing population-level needs and devising realistic strategies to address them requires hospital leaders to embrace the role of community health steward.²³ An initial step in fulfilling this role includes creating CHNA committees to solicit stakeholder input. CHNA committee members often include various individuals from inside health care organizations (eg, health care workers and administrators) and from the community (eg, representatives from local health departments, leaders from food banks, mental health agencies, and youth service groups). Often, these individuals have broad interests in addressing public health generally and the health of medically underserved, low-income, and minority populations more specifically. As a result of bringing these diverse stakeholders together, health care organizations have the potential to coordinate and amplify the voices of vulnerable and marginalized communities while creating opportunities to respond to local root causes of diet-related health disparities. Despite the directive for CHNAs to be community focused, however, existing data reveal that the majority of "community" programs have often focused on individual, patientlevel clinical interventions.²⁴ Given the substantial community-level stakeholder collaboration involved in conducting CHNAs, a focus on patient-level interventions is a missed opportunity to develop ethical, sustainable, community-level food system changes that would have broader population and ecological health impacts.¹⁶

In contrast, as elaborated below, some health systems are demonstrating that there is value in promoting nutrition and food systems-based programs as part of a population-level approach to the CHNA process.²⁴ Since CHNA committees are already engaged in coordinating community stakeholders, they should not underestimate their potential to serve in a dual role as stewards in promoting UN SDGs and as leaders in organizing impactful, sustainable, nutrition-related initiatives to prevent or delay the onset of major chronic diseases at the population level.^{25,26}

Screening for Social Determinants

Another US policy-level initiative gaining momentum in clinical settings is identifying and addressing patient-level SDoH, ie, factors that impact the "environments where people are born, live, learn, work, play, worship and age."²⁷ While the United States ranks first internationally in health care expenditures, it stands at the bottom of the Organisation for Economic Co-operation and Development countries for important health outcomes, including average life expectancy and infant mortality.²⁸ One reason for these poor outcomes is that, while up to 80% of preventable morbidity and mortality is attributable to SDoH and behavioral factors,²⁹ the United States directs the majority of its health care resources toward biomedical treatment rather than the provision of services to ameliorate detrimental social conditions.^{30,31,32}

In 2017, the National Academy of Medicine published a report recommending that health care organizations screen for patient-level SDoH during clinical encounters to better understand and address the root causes of health disparities at the clinical point-of-contact.^{33,34} Many health care organizations have begun developing screening tools and systematically identifying relevant patient needs, such as food security, access to transportation, or housing stability.³⁵ However, clinical processes and workflows to address the identified patient-level needs are still being developed and operationalized in many organizations.^{35,36,37,38}

996 journalofethics.org

Health care organizations possess several advantages in addressing SDoH. We argue that, as health care organizations develop clinical processes specifically to address food access and food insecurity, they can act with greater intentionality as leaders, stewards, and partners within local and regional food systems to simultaneously promote the 3 aims of human, environmental, and planetary health. Furthermore, there is significant opportunity and economic incentive for health care organizations to align their efforts with UN SDGs by integrating access to sustainable, local options for healthy food into community programs that will improve both patient- and population-level health. Below, we outline some existing patient- and population-level strategies being employed in various settings that can serve as models for future initiatives.

Strategies

Promoting nutrition and food systems-based programs can be accomplished at both the population level and the patient level through already existing pathways, including CHNAs and clinical SDoH screening. These institutional tools can work in a complementary fashion to (1) identify both population- and individual-level health needs linked to poor diets and (2) leverage regional resources in addressing those needs, especially for at-risk and disadvantaged community members.

Patient-level strategies. A number of similar, patient-level clinical interventions are being piloted across the country at the clinic-community interface that could be employed when food access is identified as an SDoH challenge in clinical settings. These include providing patients with community-supported agriculture boxes,³⁹ providing patients with fruit and vegetable vouchers to reduce costs (eg, prescription produce programs), 40,41 and hosting hospital-based farmers' markets^{42,43} or community gardens where patients can access high-quality, low-cost produce. 44,45 Some of these programs not only provide local fruits and vegetables to patients at clinical points-of-care, but also multiply community benefit by lending economic support and visibility to local food growers. This support increases reach for community actors who are producing and distributing products that, in turn, improve human health, lower the overall GHG footprint, and strengthen regional economies. Moreover, such programming and coordination between food and health systems can build a greater sense of social cohesion, especially for marginalized groups. For instance, Penn State Hershey Medical Center has used a partnership with an urban farmers' market not only to provide food security for recently resettled refugees (by helping them purchase local fruits and vegetables on a weekly basis), but also to help integrate these families into the cultural fabric of their new communities (eg, hosting English as a second language classes at the market and having families practice their English with vendors).46 By bringing individuals and organizations together in synergistic ways, hospitals that forge such partnerships arguably improve individual health outcomes while adding social value to and supporting the economic viability of their communities.

Population-level strategy. Another type of community program that could be explored through the CHNA process is farm-to-hospital initiatives that can support population health, enhance rural economies, reinforce the environment and sustainable food systems, and improve food access and nutrition.^{47,48} The first National Agricultural Statistics Service local food marketing practices survey, published in 2016, found that, among 167 000 US farms that produced and sold food through direct marketing to consumers, the majority of food sold was within 100 miles of the farm.⁴⁷ Furthermore, the survey reported that farmers who sold to institutions such as schools, universities, and hospitals brought in the most revenue. These findings support the notion that

health care institutions can be stewards of their local economies and promote sustainable food systems by leveraging their buying power and sourcing food products from local farms in their service areas. Such investments may be less cost-efficient than buying from multinational food suppliers, but they create branding and marketing opportunities for institutions that can enhance their regional profile.

Patient- and population-level strategy. Another up-and-coming partnership that can provide food access at the patient- and population-level is hospital-supported organic farms, where food is grown on campus and used to fulfill organizational missions such as teaching, research, patient care, and service to community (see Table).⁴⁹ Specific to human and environmental health, such infrastructure allows institutions to substantially reduce the environmental costs of food production and distribution while creating pointof-service opportunities for patients and community members to integrate healthy organic produce into their diets. Such sites can operate synergistically at the patientand population-level by providing opportunities for community education (eg. cooking and gardening demonstrations), outreach to vulnerable groups (eg, communitysupported agriculture shares that can be given to food-insecure patients), and opportunities to educate frontline health professionals and trainees who work with atrisk patients about diet and sustainability. At present, our research team at the Penn State College of Medicine has identified approximately 25 hospital-based organic farms located at US hospitals and is in the process of documenting the innovative outreach work being done in these spaces. With the commitment of scarce land and resources, organizations investing in hospital-based farms send a meaningful, tangible message to their constituents that they are committed to community health and well-being in addition to environmental sustainability.

Table. How Hospital-Based Farms Can Fulfill Health Care Organizational Missions	
Health care mission area	Strategy
Clinical	
	Use space for experiential learning about chronic disease prevention and management via nutrition education, including cooking demonstrations, gardening, and sustainable, plant-based diets.
	Source produce locally for fruit and vegetable prescription programs or community-supported agriculture boxes.
Education	
	Educate cross-disciplinary students in medicine, nutrition, nursing, public health, agriculture, and other allied health professions.
	Partner with local schools and community groups to teach nutrition, gardening, agriculture, and sustainability in alignment with the WHO SDGs.
Community outreach	
	Provide community gathering space for health-focused events and groups.
	Provide free or reduced-cost produce to employees, community members, and local organizations as a retail operation.
	Donate farm produce to food assistance programs and food banks.
Research	Use farm as a lab space to explore the impact of farming on community health.
	Explore multiple initiatives in addition to community-level interventions related to food access, nutrition education, and many other programs, including those described above.

998 journalofethics.org

Conclusion

The 21st century has been defined by rising inequality, falling life expectancy, declining health outcomes, persistent health disparities, and rising global temperatures. For too long, health care in the United States has been an extractive industry drawing revenue from a fee-for-service model that neither effectively serves patient-level preventive health nor population-level community health. While the ground is slowly shifting under the CHNA policy of the ACA and efforts to conduct clinical SDoH screening, health care institutions may be both slow to change and reluctant to truly extend their missions beyond the walls of the clinic.

We assert that hospital systems have a responsibility to use their position within their communities to serve as environmental stewards and community leaders. By leveraging already existing CHNA pathways and patient-level SDoH screening, they can use their existing resources and serve as central hubs for regional networks, effectively connecting at-risk individuals with food producers and other local organizations (ie, farmers' markets and gardens) involved in food production and distribution. Given the increasing responsibility that health care institutions have for population health, the intimate relationship between chronic disease and diet, and the embeddedness of hospitals within food service and retail markets, we believe health care organizations must serve as leaders in local food systems. In effect, not taking on this leadership role constitutes a wasted opportunity to serve as a unifying force for local stakeholders to collaboratively develop impactful programs at the intersection of food systems, agriculture, and human health.

Through the equity lens of the UN SDGs, such leadership can use the existing population-level CHNA framework and patient-level SDoH screening to improve health outcomes while also supporting local producers and reducing the environmental footprint of their current supply chains. In an era in which we collectively face critical ecological and public health challenges, leadership is not only necessary but ethically warranted.

References

- 1. Steffen W, Richardson K, Rockström J, et al. Planetary boundaries: guiding human development on a changing planet. *Science*. 2015;347(6223):1259855.
- 2. Water in agriculture. World Bank. Updated May 8, 2020. Accessed May 25, 2022. https://www.worldbank.org/en/topic/water-in-agriculture#1
- 3. Oki T, Kanae S. Global hydrological cycles and world water resources. *Science*. 2006;313(5790):1068-1072.
- 4. Willett W, Rockström J, Loken B, et al. Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems. *Lancet*. 2019;393(10170):447-492.
- 5. Estruch R, Ros E, Salas-Salvadó J, et al; PREDIMED Study Investigators. Primary prevention of cardiovascular disease with a Mediterranean diet. *N Engl J Med*. 2013;368(14):1279-1290.
- 6. Binia A, Jaeger J, Hu Y, Singh A, Zimmermann D. Daily potassium intake and sodium-to-potassium ratio in the reduction of blood pressure: a meta-analysis of randomized controlled trials. *J Hypertens*. 2015;33(8):1509-1520.
- 7. Muraki I, Imamura F, Manson JE, et al. Fruit consumption and risk of type 2 diabetes: results from three prospective longitudinal cohort studies. *BMJ*. 2013;347(1):f5001.

- 8. Hung HC, Joshipura KJ, Jiang R, et al. Fruit and vegetable intake and risk of major chronic disease. *J Natl Cancer Inst*. 2004;96(21):1577-1584.
- 9. Boffetta P, Couto E, Wichmann J, et al. Fruit and vegetable intake and overall cancer risk in the European Prospective Investigation into Cancer and Nutrition (EPIC). *J Natl Cancer Inst.* 2010;102(8):529-537.
- 10. Woolf SH, Schoomaker H. Life expectancy and mortality rates in the United States, 1959-2017. *JAMA*. 2019;322(20):1996-2016.
- 11. National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP). Centers for Disease Control and Prevention. Accessed November 22, 2021. https://www.cdc.gov/chronicdisease/index.htm
- 12. Nguyen H. Sustainable food systems: concept and framework. Food and Agriculture Organization of the United Nations; 2018. Accessed July 3, 2022. https://www.fao.org/3/ca2079en/CA2079EN.pdf
- 13. Forouzanfar MH, Alexander L, Anderson HR, et al; GBD 2013 Risk Factors Collaborators. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet*. 2015;386(10010):2287-2323.
- 14. Foresight Project Lead Expert Group. Future Food Systems: For People, Our Planet, and Prosperity. Global Panel on Agriculture and Food Systems for Nutrition; 2020. Accessed July 5, 2022. https://www.glopan.org/wp-content/uploads/2020/09/Foresight-2.0_Future-Food-Systems_For-people-our-planet-and-prosperity.pdf
- 15. Sustainable Development Goals. World Health Organization. Accessed November 26, 2021. https://www.who.int/health-topics/sustainable-development-goals#tab=tab_3
- 16. Kennedy E, Webb P, Block S, Griffin T, Mozaffarian D, Kyte R. Transforming food systems: the missing pieces needed to make them work. *Curr Dev Nutr*. 2020;5(1):nzaa177.
- 17. Fani Marvasti F, Stafford RS. From sick care to health care—reengineering prevention into the US system. *N Engl J Med*. 2012;367(10):889-891.
- 18. Mozaffarian D, Angell SY, Lang T, Rivera JA. Role of government policy in nutrition-barriers to and opportunities for healthier eating. *BMJ*. 2018;361:k2426.
- 19. McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. *Health Educ O*. 1988;15(4):351-377.
- 20. Frieden TR. A framework for public health action: the health impact pyramid. *Am J Public Health*. 2010;100(4):590-595.
- 21. Requirements for 501(c)(3) hospitals under the Affordable Care Act—Section 501(r). Internal Revenue Service. Accessed November 29, 2021. https://www.irs.gov/charities-non-profits/charitable-organizations/requirements-for-501c3-hospitals-under-the-affordable-care-act-section-501r
- 22. Section 4959 excise tax for failure to meet the requirements of Section 501(r)(3) and noncompliant facility income tax for failure to meet the requirements of Section 501(r). Internal Revenue Service. July 15, 2022. Accessed September 21, 2022. https://www.irs.gov/government-entities/taxes-for-failure-to-meet-the-requirements-of-section-501
- 23. Franz BA, Skinner D, Murphy JW. Changing medical relationships after the ACA: transforming perspectives for population health. SSM Popul Health. 2016;2:834-840.

- 24. Rozier MD. Nonprofit hospital community benefit in the US: a scoping review from 2010 to 2019. *Front Public Health*. 2020;8:72.
- 25. George DR, Rovniak LS, Dillon J, Snyder G. The role of nutrition-related initiatives in addressing community health needs assessments. *Am J Health Educ*. 2017;48(1):58-63.
- 26. Alberdi G, Begiristain-Zubillaga M. The promotion of sustainable diets in the healthcare system and implications for health professionals: a scoping review. *Nutrients*. 2021;13(3):747.
- 27. Healthy People 2030: social determinants of health. Office of Disease Prevention and Health Promotion, US Department of Health and Human Services. Accessed November 21, 2021. https://health.gov/healthypeople/objectives-and-data/social-determinants-health
- 28. Health expenditure and financing. Organisation for Economic Co-operation and Development. Accessed January, 28 2019. https://stats.oecd.org/index.aspx?DataSetCode=SHA
- 29. Booske BC, Athens JK, Kindig DA, Park H, Remington PL. Different perspectives for assigning weights to determinants of health. University of Wisconsin Population Health Institute; 2010. Accessed July 5, 2022. https://www.countyhealthrankings.org/sites/default/files/differentPerspectives ForAssigningWeightsToDeterminantsOfHealth.pdf
- 30. Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *Am J Prev Med.* 1998;14(4):245-258
- 31. Marmot M. The health gap: doctors and the social determinants of health. *Scand J Public Health*. 2017;45(7):686-693.
- 32. Schroeder SA. Shattuck Lecture. We can do better—improving the health of the American people. *N Engl J Med.* 2007;357(12):1221-1228.
- 33. Institute of Medicine. *Capturing Social and Behavioral Domains in Electronic Health Records: Phase 1.* National Academies Press; 2014.
- 34. Institute of Medicine. Capturing Social and Behavioral Domains and Measures in Electronic Health Records: Phase 2. National Academies Press; 2014.
- 35. LaForge K, Gold R, Cottrell E, et al. How 6 organizations developed tools and processes for social determinants of health screening in primary care: an overview. *J Ambul Care Manage*. 2018;41(1):2-14.
- 36. Murray GF, Rodriguez HP, Lewis VA. Upstream with a small paddle: how ACOs are working against the current to meet patients' social needs. *Health Aff* (*Millwood*). 2020;39(2):199-206.
- 37. Kreuter MW, Thompson T, McQueen A, Garg R. Addressing social needs in health care settings: evidence, challenges, and opportunities for public health. *Annu Rev Public Health*. 2021;42(1):329-344.
- 38. Veldheer S, Scartozzi C, Knehans A, et al. A systematic scoping review of how healthcare organizations are facilitating access to fruits and vegetables in their patient populations. *J Nutr.* 2020;150(11):2859-2873.
- 39. Berkowitz SA, O'Neill J, Sayer E, et al. Health center-based community-supported agriculture: an RCT. *Am J Prev Med.* 2019;57(6)(suppl 1):S55-S64.
- 40. Kerr D, Barua S, Glanz N, et al. Farming for life: impact of medical prescriptions for fresh vegetables on cardiometabolic health for adults with or at risk of type 2 diabetes in a predominantly Mexican-American population. *BMJ Nutr Prev Health*. 2020:3.

- 41. Veldheer S, Scartozzi C, Bordner CR, et al. Impact of a prescription produce program on diabetes and cardiovascular risk outcomes. *J Nutr Educ Behav*. 2021;53(12):1008-1017.
- 42. Saxe-Custack A, LaChance J, Hanna-Attisha M. Child consumption of whole fruit and fruit juice following six months of exposure to a pediatric fruit and vegetable prescription program. *Nutrients*. 2019;12(1):E25.
- 43. George DR, Rovniak LS, Kraschnewski JL, Morrison KJ, Dillon JF, Bates BY. Medical center farmers markets: a strategic partner in the patient-centered medical home. *Prev Chronic Dis.* 2013;10:E127.
- 44. Spees CK, Hill EB, Grainger EM, et al. Feasibility, preliminary efficacy, and lessons learned from a garden-based lifestyle intervention for cancer survivors. *Cancer Contr.* 2016;23(3):302-310.
- 45. Veldheer S, Winkels RM, Cooper J, et al. Growing healthy hearts: gardening program feasibility in a hospital-based community garden. *J Nutr Educ Behav*. 2020;52(10):958-963.
- 46. Bouhmam H, Boothe D, George DR. Hosting Syrian refugees: resources exist in our communities. *Am J Public Health*. 2017;107(7):1013.
- 47. USDA release results of first Local Food Marketing Practices Survey. News release. US Department of Agriculture; December 20, 2016. Accessed September 21, 2022. https://www.nass.usda.gov/Newsroom/archive/2016/12_20_16.php
- 48. Warsaw P, Morales A. Farm-to-hospital programs and public health: leveraging local food for organizational and behavioral change. *J Agric Food Syst Community Dev.* 2022;11(2):243-261.
- 49. Moreno V. Food access and education take root in hospital farms, 2019. HealthCity Newsletter. August 27, 2019. Accessed March 18, 2020. https://www.bmc.org/healthcity/population-health/food-access-and-education-take-root-hospital-farms

Susan Veldheer, DEd, RD is an assistant professor in the Department of Family and Community Medicine and the Department of Public Health Sciences at the Penn State College of Medicine in Hershey, Pennsylvania. Her research aims to develop and test food-as-medicine interventions that reduce the burden of diet-related chronic disease. Her most recent work reaches outside of the traditional clinical settings to test fruit and vegetable prescription programs in adults with type 2 diabetes and to teach gardening skills to adults with risk factors for cardiovascular disease.

Daniel R. George, PhD, MSc is an associate professor of medical humanities and public health sciences at the Penn State College of Medicine in Hershey, Pennsylvania, who studies dementia and Alzheimer's disease. He coauthored *The Myth of Alzheimer's:* What You Aren't Told About Today's Most Dreaded Diagnosis (St Martin's Press, 2008) and American Dementia: Brain Health in an Unhealthy Society (Johns Hopkins University Press, 2021).

Citation

AMA J Ethics. 2022;24(10):E994-1003.

DOI

10.1001/amajethics.2022.994.

Conflict of Interest Disclosure

The author(s) had no conflicts of interest to disclose.

The viewpoints expressed in this article are those of the author(s) and do not necessarily reflect the views and policies of the AMA.

Copyright 2022 American Medical Association. All rights reserved. ISSN 2376-6980