Social Determinants of Health and Cancer Care: An ASCO Policy Statement

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INTRODUCTION

Many interventions to prevent chronic disease and reduce health disparities in the United States and elsewhere have historically focused on expanding access to health insurance coverage along with improvements to the quality and intensity of health care delivery. Yet, despite decades of significant investments, health inequities in the United States persist by race, ethnicity, gender identity, disability, geography, and various other factors that are driven by the underlying social, economic, and environmental conditions faced by individuals and their communities. These conditions, collectively referred to as the social determinants of health (SDOH), can impact health, affecting as much as 50% of health outcomes, both positively and negatively.[1] A related concept, health-related social needs (HRSNs), refers to unmet needs affecting health such as stable and affordable housing, access to healthy food or transportation, and interpersonal safety; HRSNs have been shown to be negatively associated with outcomes across the cancer continuum, including prevention and screening, diagnosis, treatment, survivorship, and end-of-life care.[2,3] Disparities in HRSNs related to cancer care are the result of an unequal distribution of positive/negative SDOH across population groups.

As the national organization representing nearly 50,000 physicians and other health care professionals specializing in cancer treatment, diagnosis, prevention, and research, ASCO supports effective policies and practices targeting SDOH that promote, sustain, and advance health equity. Since 2003, ASCO has had a formal body of volunteers composed of cancer health disparities and health equity experts who have focused on improving our understanding, advancing our scientific knowledge, and developing solutions to eliminate disparities in cancer. ASCO members are also dedicated to conducting research that leads to improved patient outcomes and equitable care delivery, ensuring that evidence-based practices for the prevention, diagnosis, and treatment of cancer are available to their patients and communities. Consistent with ASCO's commitment to cancer health equity, ASCO assembled the SDOH Task Force in 2021 with the charge of articulating recommendations for how to address SDOH in cancer care.[4]

This policy statement builds upon recently endorsed ASCO policies on cancer health equity, rural health, and issues of cancer prevention.[5] The purpose of this statement is to (1) reaffirm ASCO's commitment to addressing the social, economic, and environmental factors that influence cancer care and outcomes and (2) establish a policy framework to guide ASCO advocacy on SDOH-related issues. Recommendations will focus on specific actions guided by ASCO's mission statement—conquering cancer through research, education, and promotion of the highest-quality, equitable patient care.

BACKGROUND

Personalized medicine, guided by next-generation genomic testing, has enabled oncologists to tailor medical treatments to the specific characteristics of a patient's disease, which has led to improved response rates and survival, avoidance of ineffective therapies, and reductions in treatment toxicities. However, cancer care teams are rarely empowered to address the HRSNs of an individual patient with the same degree of precision. The impact of stress, lack of strong support networks, low socioeconomic status (SES), and other social risk factors on cancer

outcomes are well characterized, but these data generally are not systematically gathered in the clinic or clinical trial setting.

Collecting such data would facilitate targeted support for patients with cancer during their cancer journey, as well as support future research that can evaluate the impact of specific social interventions on various cancer care outcomes. Currently, delivering the appropriate interventions to patients when they need it has proven challenging to implement. Beginning to measure and, where appropriate, intervene upon individual HRSNs (Table 1) can enable cancer care teams to mitigate these previously unaddressed factors that contribute to patient outcomes.

It is also important to highlight that SDOH and social risk factors interact with other demographic factors, such as race/ethnicity or geographic location. Indeed, some studies suggest that a large proportion of observed disparities in cancer outcomes between racial/ethnic groups are primarily reflecting interactions with and disparities between SDOH, HRSNs, and social risk factors.[8] Measuring and intervening upon SDOH at a systems level is a fundamental prerequisite for achieving cancer health equity; furthermore, intervening on HRSN at the individual patient level mitigates the acute social factors affecting a patient's health and how they navigate and manage their cancer care.[9]

Social Determinants and the Cancer Care Continuum

In oncology, SDOH affect all aspects of the cancer care continuum, from screening through end of life and/or survivorship. For example, housing has been demonstrated to be highly relevant to cancer through bidirectional mechanisms whereby cancer treatment (primarily via cost) can have profound impact on housing stability, but also through the relationship between housing quality and social risk factors that predict for negative cancer outcomes.[2] Structural barriers to cancer care exist because of many such social risk factors, such as educational attainment, SES, geographic location, or sexual/gender minority status.[10,11] These barriers can impede an individual's access to appropriate cancer screening, leading to a cancer diagnosis at a later stage and ultimately contributing to the well-known and persistent disparities in cancer outcomes that are often seen between subpopulations. This includes racial/ethnic disparities, such as with breast cancer in Black women.[12] After receiving a diagnosis of cancer, the financial toxicity often associated with cancer care[13] creates an economic HRSN that can impede a patient's ability to access the treatments prescribed by their oncologist in both the curative and palliative clinical settings.[14] This predictably results in unacceptable disparities in access to quality cancer care: for Medicaid beneficiaries, the most promising precision cancer therapies are far too often underutilized.[15]

However, SDOH can also affect cancer incidence and outcomes in more pervasive and long-lasting ways. The life course perspective provides a framework for understanding the role that exposures to adverse SDOH at specific periods during an individual's life can play in poor health outcomes.[16] These may manifest differently for different subpopulations of patients with cancer. For example, adverse childhood experiences (which are tied to social risk factors) may predispose to some types of cancer.[17] Surviving or living long term with a cancer diagnosis also has the potential to permanently alter an individual's life course via persistent financial hardship.[18]

The Importance of Measuring SDOH

Integral to the success of SDOH-targeted interventions will be the concurrent establishment of standardized SDOH data collection practices across both adult and pediatric oncology. The current ad hoc approach to SDOH measurement—including a lack of systematic data

TABLE 1. Definitions and Examples of SDOH, HRSNs, and Social Risk Factors

Definition	Examples
SDOH are defined as the conditions in which people are born, grow, live, work, and age. These include underlying social, economic, and environmental conditions faced by individuals and their communities	Neighborhood and built environment Health and health care Social/community contexts Education Economic stability
HRSN refer to experiences or unmet needs that affect an individual's health and well-being, which arise out of adverse SDOH	Food, housing, utility, or transportation insecurities Exposure to violence Usual source of care, access to primary care, health literacy Experiences of discrimination, social isolation, social support High-school graduation, language, and literacy/numeracy Financial toxicity
Social risk factors are a set of psychosocial factors for which substantial evidence exists for effects on health outcomes	Socioeconomic status Social support and networks Occupational stress, unemployment, and retirement Social cohesion and social capital

NOTE. Adapted from Tucker-Seeley, 2021[6]; and Institute of Medicine, 2001.[7]
Abbreviations: HRSNs, health-related social needs; SDOH, social determinants of health.

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collection, highly variable measures that limit comparison across populations, reliance on proxy variables for SES prone to misclassification bias, and lack of consistency in longitudinal data collection at pertinent inflection points in cancer care (diagnosis, relapse/progression, survivorship, or end of life)—inhibits the ability of providers, investigators, and health care systems to (1) identify patient populations for whom interventions are warranted and (2) evaluate the impact of interventions within these populations. Systematic SDOH data must be collected across the cancer continuum leveraging published measures for both adverse and protective SDOH.[11]

There is neither a single perfect measure of SDOH nor a validated social risk score in oncology. Handwringing over this gap will not advance health equity intervention; only the process of collecting and refining data will do so. The history of oncology treatment advances is full of evolving measurement methodologies, for example, early evaluation of minimal-residual disease by PCR and flow cytometry in leukemia, which is now established via next-generation sequencing. Consequently, such data collection should be immediately integrated into standard clinical practice,[19] clinical trial case report forms,[20,21] and sociodemographic banking studies[22] to ensure SDOH are universally available for clinicians and investigators to identify populations at risk for poor outcomes and to evaluate interventions addressing SDOH.

Patient Perspectives on SDOH Screening and the Connection to Care

> As a mother, grandmother, and sister, I've seen the social determinants of health affect my family personally. As a mother, seeing my adult children not complete enough schooling/education to help them obtain better employment, that in turns pays for healthcare coverage, has lasting effects on my grandchildren who grow up in an environment where health priorities are last on their list and survival is the mantra of the day. Seeing the impact of life in a nursing home for my younger brother who was diagnosed with a mental health condition and a late-stage cancer, led me to advocating for better healthcare conditions for those under-represented and in need of non-discrimination and social inclusion.*

*Quote from author Wenora Johnson.

For many individuals and families, after basic needs such as housing, food, education, and transportation have been paid for, there are insufficient funds remaining for nonurgent health expenses such as preventive cancer screenings. Particularly in cancer care, this has the pernicious effect of resulting in later staging or higher acuity of illness at diagnosis,[23] which directly leads to poorer outcomes in these subpopulations. It may be uncomfortable for some patients to admit they do not have sufficient financial resources for their household, particularly when they may fear biases from their health care delivery team that could potentially affect access to and quality of care. When appropriately framed, however, studies demonstrate that patients and caregivers are often willing to share this information in the clinical setting to help improve their care or even to help future generations.[24-26]

Impediments to the collection of SDOH data exist in other distinct areas, including at the provider and health system levels. A role exists for health care providers to engage with and help patients become comfortable with discussing SDOH. Despite the clear impact that SDOH have on care outcomes, there remain challenges to their identification and documentation as part of routine clinical care. Identification and intervention of social needs require additional effort on behalf of medical providers and clinical staff at a time when many health care systems are strained because of a shortage in workforce. Some oncologists may find SDOH screening to be challenging because of perceptions that patients are uncomfortable discussing personal information such as housing, education, employment, food security, and transportation issues. This can be complicated by a provider's and/or a patient's perception that their unmet social needs either cannot or will not be addressed within clinical encounters.

Focusing on SDOH can be particularly challenging for organizations and health care providers seeking to preserve a patient's trust, despite a need to be upfront about how, or how many, HRSNs can be reasonably addressed. These barriers can be overcome by engaging and educating patients, caregivers, and clinicians on the importance of incorporating SDOH data collection into routine clinical care, similar to obtaining a medical history. Patients and caregivers are also more likely to be engaged in this process when they find that their clinicians are equipped with appropriate resources to address social risks with the help of the navigation and/or social work teams. When screened and communicated with effectively, patients remain engaged and hopeful about both their life circumstances and health conditions, enabling HRSN screening to be an important first step in ameliorating SDOH-related poor health care outcomes.[27-30]

ADDRESSING SOCIAL NEEDS IN ONCOLOGY

Given that SDOH are associated with stark disparities in cancer outcomes across the care continuum for both adults and children, expanding the focus of clinicians and investigators to the how of addressing social needs in the context of cancer care will be essential. Building upon momentum to transform high-quality cancer care to be both equitable and accessible, describing disparities on the basis of exposure to adverse SDOH is no longer adequate by itself. Cancer care providers can help to develop, implement, and evaluate interventions to address SDOH-associated disparities to improve cancer outcomes more broadly.

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Interventions targeting SDOH and social needs can fall into two broad categories: interventions developed and evaluated for efficacy in the research setting, and interventions that are part of quality improvement activities in the clinical setting. Both types of interventions are necessary to ensure progress is made to better address social needs, but each category has specific requirements for sustainability, data collection, evaluation, and other infrastructure needs.

Frameworks for Intervention

Although evidence gaps and challenges to intervening upon HRSNs exist,[31] tools and frameworks are being developed to help health systems begin collecting and acting upon SDOH data. For example, the Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences (PRAPARE),[32] along with a companion toolkit, aims to enable providers to improve health equity at both the local clinic and the health system levels.

A recent report from the National Academies of Sciences, Engineering, and Medicine[1] laid out a framework for integrating social care, defined as services that address health-related social risk factors/needs, into clinical practice. The report concluded that value-based care, in the context of addressing SDOH, can incentivize prevention, improve health outcomes, and provide rationale for population-based initiatives compared with care focusing on service delivery alone. To that end, the report authors identified five complementary activity areas that facilitate the integration of social care into health care: awareness, adjustment, assistance, alignment, and advocacy. Specific activities deployed will likely vary on the basis of setting and social factors being addressed, although examples and pilot programs provide proof of concept (see Table 2 for specific examples related to patient transportation needs).

Despite this potential, published findings[34] from an attempt to integrate social care across a large, safety-net health care system revealed persistent structural obstacles. Although there was widespread stakeholder agreement that meeting social needs of patients was a health system priority, the perception of such efforts as adding on to, rather than being central to, clinical care delivery operations ultimately kept social care programs fragmented, less accessible, and less effective. The authors concluded that until the task of addressing social needs becomes integrated within broader health system operational priorities, programs to address social needs will remain uncoordinated and inefficient.

Moving From Measurement to Intervention

Precision medicine, the tailoring of medical treatment to the individual characteristics of each patient,[35,36] has driven decades of steady progress in cancer treatment. Absent from this approach to medical advancement has been consideration of nonbiologic factors, including SDOH, to identify subpopulations that differ in their susceptibility to a particular disease or their response to a specific treatment.[29] However, in the context of systematic data collection, providers and investigators could begin to prospectively measure the SDOH as the equivalent of risk mutations across patient populations and concurrently develop "drugs" to treat them—beginning with readily available supportive care approaches, before developing and introducing more tailored interventions (eg, those targeted at the needs of a specific community or geographic area).

As one example, oncology researchers and/or clinical improvement teams (depending on context) could identify lack of reliable food as an independent risk factor for disparate cancer outcomes[37]; recommend standardized, prospective evaluation of food among patients with cancer at diagnosis, relapse, survivorship, or end of life; and evaluate supportive care interventions targeting basic food needs (eg, food pantries, food vouchers, and home grocery delivery[38]) across patient populations. Unlike drugs, development and evaluation of SDOH-targeted interventions will require both research and quality improvement methodologies to facilitate generation of data salient to different stakeholders and rapid integration into the health care setting. Furthermore, such

TABLE 2. Example Health Care System Activities That Strengthen Social Care Integration

Activity	Definition	Transportation-Related Example
Awareness	Activities that identify the social risks and assets of defined patients and populations	Asking patients about their access to transportation
Adjustment	Activities that focus on altering clinical care to accommodate identified social barriers	Reduce the need for in-person health care appointments by using other options (eg, telehealth)
Assistance	Activities that reduce social risk by providing assistance in connecting patients with relevant social care resources	Provide transportation vouchers (eg, for ride-sharing or public transit) so that patients can travel to health care appointments
Alignment	Activities undertaken by health care systems to understand existing social care assets in the community, organize them to facilitate synergies, and invest in and deploy them to positively affect health outcomes	Invest in community ride-sharing or time-bank programs
Advocacy	Activities in which health care organizations work with partner social care organizations to promote policies that facilitate the creation and redeployment of assets or resources to address HRSNs	Work to promote policies that fundamentally change the transportation infrastructure within the community

NOTE. Adapted from National Academies of Sciences, Engineering, and Medicine, 2019.
Abbreviation: HRSNs, health-related social needs.

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interventions will require consideration of potential for scale and attention to engagement of both policymakers and payers to sustain their long-term impact.[39]

Practical considerations for operationalizing the systematic measurement of SDOH and evaluation of SDOH interventions include (1) engagement of multidisciplinary health care community stakeholders, (2) securing long-term funding from diversified sources, and (3) the need for continuous development and implementation of evidence-based interventions. To extend the conceptual analogy, one drug will not cure all cancers and most cancers require multimodal drug therapy; SDOH and HRSNs are no different. Improving cancer health equity necessitates a portfolio of multilevel health equity interventions to address SDOH—evaluated both individually and in combination. Health equity intervention development will require prospectively engaged multidisciplinary teams—including patients, oncologists, nurses, social workers, community organizations, economists, and policymakers—to generate a pipeline of health care delivery and supportive care interventions.

SDOH-targeted interventions will require the equivalent of an early-phase pipeline to develop, refine, and determine intervention feasibility before efficacy evaluation. Integration of SDOH-intervention efficacy evaluation into existing research infrastructures—including the National Clinical Trials Network (NCTN) cooperative group drug trials—will be paramount to early efforts, given no similar federally supported infrastructure exists for SDOH-intervention evaluation. Long-term establishment of a parallel, funded clinical trial infrastructure dedicated to SDOH interventions may be necessary, although notably feasible only for adult cancer populations and not for pediatric cancer populations whose small numbers require that researchers leverage the existing pediatric NCTN Children's Oncology Group to accrue disease-specific studies.

Specifically, because of the rarity of childhood cancer—approximately 15,000 US children are diagnosed annually[40]—a majority of children will be treated on a pediatric cooperative group trial if one is available.[41] This model of care delivery reflects the reality that conducting disease-specific, statistically powered interventional research outside of the national cooperative group setting is infeasible in pediatrics. By extension, addressing SDOH-associated disparities in pediatric cancer populations requires (1) SDOH data collection and intervention evaluation as an integrated component of the pediatric clinical trial infrastructure and (2) development of SDOH-targeted interventions designed to scale for integration across trials that accrue at >150 centers. These pediatric-specific requirements necessitate attention to alignment of funding and infrastructure unique from adult populations—but also mean that pediatrics can serve as a demonstration population in which to establish the feasibility of trial-embedded SDOH data collection and trial-embedded SDOH-intervention evaluation that can subsequently be extrapolated to adult oncology populations.[25,26]

SDOH and Patient Navigation

The collection and sharing of SDOH data remain persistent challenges in a health care setting, especially in the absence of a standardized method of collection and documentation of SDOH data within the electronic health record (EHR). The integration of SDOH into cancer care delivery is currently hampered by misalignment of financial incentives that do not recognize the value of addressing social risk factors and HRSNs.[42] Thus, it is unlikely that the treating oncologist will be able to find sufficient time during a brief clinic encounter to ask detailed SDOH questions and address multiple social risks while also attending to treatment decisions and cancer-related side effects. Ideally, future value-based care models should include financial reimbursement for clinicians and clinic staff to collect SDOH data and address social risks independent from what is reimbursed for a clinical encounter.[43]

In the short term, patient navigators can play an integral role in this process by assessing social risks while supporting a patient throughout their cancer journey.[43,44] High-quality cancer care can be enhanced by the involvement of patient navigators who advocate for each patient's unique social and medical needs.[45] The navigator could then communicate any barriers to the appropriate teams (eg, clinical providers, social work, and financial advocates) and facilitate interventions and referrals to address those barriers. Navigators already support patients in achieving their specific health goals by leveraging existing resources within the health care system or by connecting patients with additional resources in their community.[43] Examples of these resources include psychosocial counseling, financial advocacy, transportation, and other forms of financial support. A culturally responsive and personalized navigation program can support vulnerable patients throughout their cancer journey in a comprehensive approach that is both aligned with their values and tailored to their distinct HRSNs.[44]

Sustainability Beyond Pilot Programs

Despite the existence of successful pilot programs, building sustainable programs that influence SDOH is a challenge for health systems. These programs require long-term investments, as well as collaborations with community-based organizations and government agencies, all while lacking robust financial reimbursement models. Additionally, return on investment of interventions to assist with social needs as a mechanism for improving health outcomes is challenging to assess, and the complex, multifactorial nature of the relationship between SDOH and health outcomes does not lend itself to easy evaluation.[46,47] However, there are several promising strategies for sustaining programs that address SDOH.

First, it is critical to ensure a diverse portfolio of funding. Rather than relying on a single source of funding to operate, a commitment to multiple streams of funding support—including government or foundation grants, partnerships

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with community-based organizations, and health system funds—allows stability and sustainability of programs. Second, building partnerships is paramount, particularly partnerships with community organizations and other stakeholders who can assist in leveraging resources, sharing expertise, and building networks of support. Third, assessment and intervention of adverse SDOH must be integrated into quality improvement efforts of health systems. Fourth, health system culture must include SDOH principles as part of its foundation. This may involve integrating SDOH into the mission and vision of the organization, training staff on SDOH and social needs, and using the perspective of social needs in planning health system priorities.

Sustainability of social health interventions also requires adoption and integration of the intervention into the workflow of the health system and integration of relevant data into the EHR. Additionally, it must be acknowledged that SDOH screening and intervention is not the responsibility of a single department or type of provider. Rather, all providers should be trained to have basic knowledge of available resources to ensure appropriate referral, and some relevant toolkits summarizing this basic knowledge exist.[48] This does not mean that all providers must be *experts* in SDOH screening or resources but that they are trained to acknowledge SDOH as a contributor to a patient's overall health and are prepared to recognize need and refer to the appropriate party for next steps.[49]

Finally, it must be emphasized that addressing SDOH will require a combination of clinical and public health solutions at multiple levels and that attempts to address SDOH on an individual basis, rather than system, are less likely to be successful.[50] Successful impact on SDOH will require new collaborations and new approaches to care at all levels of the ecological framework, not just the implementation of public health strategies forced into clinical programs.

Addressing SDOH/HRSNs at a Policy Level

Policy-level advocacy will be needed to address root causes of adverse SDOH and to sustain effective health care delivery interventions. Existing policies can pose immediate barriers to the development, evaluation, and sustainability of interventions targeting SDOH. For example, interventions integrating cash or in-kind resources to address basic needs such as food insecurity face barriers or cliff effects where disenrollment of patients from means-tested programs (eg, the Supplemental Nutrition Assistance Program) can occur with changes in income. Similar concerns exist surrounding the potential for inducement by hospital systems or pharmaceutical manufacturers seeking to meet patient social needs as they relate to care delivery; examples include improving clinical trial retention, or providing drugs at lower cost for patients.[51]

Improving cancer outcomes through addressing unmet HRSNs will be stymied as long as policy barriers that undermine the research evaluation and clinical integration of supportive interventions remain in place (research and clinical quality improvement are again emphasized as the two distinct but complementary contexts for SDOH measurement and intervention). Food, housing, and transportation insecurity are among the many adverse HRSNs associated with inferior cancer outcomes; therefore, physicians are well-positioned stakeholders to advocate for feasible, scalable interventions, assess risk factors, and facilitate connections to address them.[52]

As described by Blas et al,[53] the implication of the social determinants approach, however, is that causal chains run from macro social, political, and economic factors to the pathogenesis of disease. The causal chain from macro to individual affects both the development of disease within individuals, as well as the epidemiologic patterns of disease seen at the population level. Thus, comprehensively addressing SDOH and social needs to enhance cancer health equity will require work at all levels of government, as well as collaboration between the public and private sectors.

Intervention at the federal level should include funding to support programs addressing SDOH at multiple levels of society, incorporating funding for community-based organizations, public health programs at the local and state levels, and additional research on SDOH.[54] The federal government can also work to establish sustainable payment models that support social needs screening, referral, and service provision. Aligned with improvements to payment models, they may also establish policies regarding the reporting and tracking of social needs to monitor the health status of populations.

In 2022, the Department of Health and Human Services provided the latest update to a three-pronged approach to addressing SDOH: (1) improving data collection, quality, and standardization, (2) improving the connectivity between health and social service agencies, and (3) collaboration across all government entities.[45] This approach delineates the federal government's role in setting policies that directly address SDOH including those that alleviate poverty, reduce food insecurity, increase access to affordable housing, and provide educational opportunities. Coordination of relevant activities across agencies (eg, between the Department of Health and Human Services and the Department of Housing and Urban Development) is also firmly within the scope of actions the federal government should take.

State and local governments also play an important role in the implementation of policies and interventions that address SDOH. As the purveyors of Medicaid programs, states can use their Medicaid programs to support SDOH via financial incentives for screening and addressing social needs and for piloting new payment models or waivers that cover nonmedical services such as food, housing, and transportation.

State governments have a unique ability to influence HRSNs through investment in education, housing, voter

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nondiscrimination, and public health programs.[55] For example, Medicaid programs might consider social risk-adjusted payments, a payment structure that relies not only on medical claims–based clinical factors but also incorporates additional social risk factors such as poverty and housing to more accurately represent the SDOH considerations for reimbursement.[1,56] Additionally, states may augment federal programs, increasing benefits for programs that support improvements in SDOH. In fact, increasing benefits to programs such as the Child Tax Credit or Earned Income Tax Credit and other state-supplemented benefit programs have demonstrated improvements in physical and mental health for children and families.[57,58] Medicaid programs, in particular, have a variety of options available to them to facilitate meeting HRSNs, including 1,115 waiver authority and contracts with managed care organizations.[59]

TABLE 3. ASCO Research and Policy Recommendations for Addressing Social Determinants of Health in Cancer Care

State legislative and government recommendations
State Medicaid programs should continue to explore the role of programs which • Proactively screen for and address nonmedical social needs (eg, food, housing, and transportation) • Include pilot payment structures that incorporate social risk-adjusted payments; a payment structure that relies not only on medical claims–based clinical factors but incorporates additional social risk factors such as poverty and housing (among others) to more accurately represent the SDOH considerations for reimbursement. Where these pilots demonstrate success, broader implementation should be strongly considered • Offer payment incentives to practices for screening and addressing social needs and for piloting new payment models or waivers that cover nonmedical services such as food, housing, and transportation • Include reimbursement for oncology patient navigation
Federal legislative and government recommendations
NCI should continue working to establish an infrastructure (1) to collect SDOH data and (2) to develop and evaluate interventions targeting SDOH. Both efforts should include a focus on sustainability, as well as best practices for how to collect, contextualize, and use these data with considerations appropriate to both pediatric and adult cancer populations in both clinical trial and standard-of-care contexts NCI should eliminate policies that inhibit the evaluation of SDOH-targeted intervention efficacy in NCTN trials CMS and other payers should continue to refine SDOH Z-codes, and providers should be made aware of and incentivized to report them CMS and other payers should establish policies to support oncology patient navigation, including but not limited to reimbursement CMS and other payers should also establish sustainable payment models for oncology that support social needs screening, intervention, evaluation, and continued research FDA should raise the bar for generalizable clinical trial populations, as it relates to individuals with high social needs CMS, FDA, and trial sponsors should work together to remove financial barriers to clinical trial participation, as ASCO has previously recommended[61] USDA and HHS should continue to invest in child health, by expanding access to and improving programs such as the Supplemental Nutrition Assistance Program and Early and Periodic Screening, Diagnostic, and Treatment Federal government should exercise its role in establishing policies that directly address SDOH by the following: Establishing and sustaining coordination of agency activities related to meeting social needs Establishing policies regarding the reporting and tracking of social needs to monitor the health status of populations Establish sustainable payment models that support social needs screening, intervention, evaluation, and continued research
Health care systems
Health care systems should seek to do the following to support SDOH: • Ensure a diverse portfolio of funding for screening, intervention, evaluation, and continued research • Build and sustain partnerships, particularly with community organizations • Integrate SDOH data collection and social needs intervention into existing quality improvement efforts • Incorporate SDOH principles into the foundations of health system culture • Increase the professionalization, reimbursement, and acknowledgment of the role of qualified patient navigators in coordinating care and follow-up for patients
Cancer care stakeholders
Stakeholder efforts to collect and act upon SDOH data should work in tandem with ongoing research efforts to continuously develop, evaluate, and improve interventions to address social needs Professional societies should provide education and outreach on the role of the clinician to document and potentially intervene upon social needs ASCO should advocate for legislation at the federal and state level that supports these SDOH policy recommendations Pharmaceutical manufacturers should continue to explore patient assistance programs, as well as other policies that may help attenuate SDOH-related obstacles to receiving prescribed treatment
Research needs
Robust research funding is needed to explore the following areas in both the clinical trial and standard-of-care contexts: • Design and validation of key SDOH metrics and assessment of SDOH impact on cancer outcomes • Examination of best practices for integrating SDOH data collection, including how that information is collected and stored, who should be responsible for collecting SDOH data, and how that information can best be used within a health care setting • Evaluation of interventions designed to address SDOH in both the clinical trial and standard-of-care contexts—including identifying the most effective strategies for reducing individual health disparities and inequities • Investigations into how structural discrimination and policies influence SDOH and health outcomes, as well as research into systemic interventions to address structural impact • Development and evaluation of community-based interventions, including how and when health systems should work with external community organizations to support their populations

Abbreviations: CMS, Centers for Medicare & Medicaid Services; FDA, US Food and Drug Administration; HHS, the Department of Health and Human Services; NCI, National Cancer Institute; NCTN, National Clinical Trials Network; SDOH, Social Determinants of Health; USDA, the United States Department of Agriculture.

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Community engagement is a key component to addressing SDOH and social needs for the improvement of health. Community participation in decision making regarding how determinants are addressed increases the likelihood that policies and interventions will be appropriate for community needs and, more importantly, acceptable to the community itself. Facilitating collaboration across private and public sectors and from local community through federal government action is imperative to addressing the systemic root causes of health inequities because of social needs and SDOH.[40,60]

Existing literature for behavioral and social health interventions tend to focus on specific patient populations, clinical settings, and pilot programs. This results in a relative lack of knowledge related to addressing structural and organizational barriers to SDOH intervention, as well as a lack of best practices for scaling, sustaining, and evaluating successful interventions. Until more large-scale solutions are in place, there remains a need to continue piloting and evaluating small-scale interventions in specific contexts.

In the interim, there are short- and long-term policy goals that can be pursued at multiple levels (community/health system, state, and federal) to both address social needs broadly, as well as to facilitate social care delivery within the context of health care and cancer care delivery. A full summary of ASCO's research and policy recommendations from this paper is presented in Table 3.

Global Considerations for Social Needs and Health Outcomes

Historically, civil conflict and race/ethnic/religion/gender biases have all been linked to global factors affecting individual and population health. The recent COVID-19 pandemic highlighted the roles of legal enactments, social lockdowns, and educational messaging toward disease containment globally. The World Bank's Voices of the Poor series[62] documented the concepts of health and SDOH among the people living in low- and middle-income countries, demonstrating residents possessed a keen understanding that income, housing, education, race/ethnicity, social class, and governance play an important role in determining individual and population health. Abdalla et al[63] surveyed 8,753 persons from Brazil, China, Germany, Egypt, India, Indonesia, Nigeria, and the United States to assess their rankings of determinants of health and what they perceived decision makers think matters for health. Except for China, people across all countries ranked access to health care as the top determinant of health. They all overwhelmingly believed that political considerations were the top determinant for whether policymakers would share their views on linkages between SDOH and health.

Numerous countries have social or national health care, where everyone has access to care of varying levels of sophistication; many countries have a dual system of free/subsidized, and for-payment health care services. However, health insurance or coverage is not universally available in every country, nor is access to health care services guaranteed. In countries where a large proportion of the population may be particularly vulnerable to economic hardship, because of myriad causes ranging from social upheaval, natural disasters, or epidemics, a robust literature exists about the value of interventions to address social needs. These interventions are generally referred to as social protection and take the form of cash or in-kind payments to create a safety net for the poorest individuals in a country.[64] Social protection programs were scaled up rapidly during the COVID-19 pandemic, although given the massive variability in global policies, the degree of impact and lessons learned from this response are still being explored.[65] An analysis of social protection policies in Indonesia examined price subsidies for medical care, and whether this could effectively mitigate the extent of financial hardship caused by ill-health and the resultant loss of income because of impaired productivity. In this case, subsidies were found to reduce the exposure to what the authors referred to as catastrophic shocks but did not eliminate the risk of health-related financial hardship.[66] Clearly, more work needs to be done, but it has nevertheless been demonstrated that publicly funded health care, when combined with programs to reduce the burden of social determinants, promotes more equitable distribution of life expectancies across the world.[67]

In conclusion, integration of social care with clinical care is vital to improving care delivery and clinical outcomes for patients with cancer. There are well-documented challenges to SDOH measurement and intervention, but it is imperative that oncology professionals overcome these to make meaningful strides toward caring for the whole patient. ASCO is eager to work alongside other cancer care stakeholders to remove SDOH-related barriers to care delivery across the cancer continuum.

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REFERENCES

1. National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Board on Health Care Services: Committee on Integrating Social Needs Care into the Delivery of Health Care to Improve the Nation's Health: Integrating Social Care into the Delivery of Health Care: Moving Upstream to Improve the Nation's Health. Washington, DC, National Academies Press, 2019
2. Fan Q, Keene DE, Banegas MP, et al: Housing insecurity among patients with cancer. J Natl Cancer Inst 114:1584-1592, 2022
3. Tucker-Seeley RD, Abel GA, Uno H, et al: Financial hardship and the intensity of medical care received near death. Psychooncology 24:572-578, 2015
4. Tucker-Seeley RD, Shastri SS: Integrating Social Care into Cancer Care Delivery: Are We Ready? ASCO, 2022. https://dailynews.ascopubs.org/do/integrating-social-care-into-cancer-care-delivery-we-ready
5. Patel MI, Lopez AM, Blackstock W, et al: Cancer disparities and health equity: A policy statement from the American society of Clinical Oncology. J Clin Oncol 38:3439-3448, 2020
6. Tucker-Seeley RD: Social determinants of health and disparities in cancer care for black people in the United States. JCO Oncol Pract 17:261-263, 2021
7. Institute of Medicine (US) Committee on Health and Behavior: Research, Practice, and Policy: Health and Behavior: The Interplay of Biological, Behavioral, and Societal Influences. Washington, DC, National Academies Press, 2001
8. Vince RA Jr, Jiang R, Bank M, et al: Evaluation of social determinants of health and prostate cancer outcomes among black and white patients: A systematic review and meta-analysis. JAMA Netw Open 6:e2250416, 2023
9. Castrucci BC, Auerbach J: Meeting Individual Social Needs Falls Short of Addressing Social Determinants of Health. Health Affairs Forefront, 2019. https://www.healthaffairs.org/do/10.1377/forefront.20190115.234942/full/
10. American Cancer Society: Cancer Prevention & Early Detection Facts & Figures 2023-2024, 2023. https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/cancer-prevention-and-early-detection-facts-and-figures/2023-cped-files/2023-cancer-prevention-and-early-detection.pdf
11. Alpert AB, Scout NFN, Schabath MB, et al: Gender- and sexual orientation- based inequities: Promoting inclusion, visibility, and data accuracy in oncology. Am Soc Clin Oncol Educ Book 42:1-17, 2022
12. American Cancer Society: Cancer Facts & Figures 2023, 2023. https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2023/2023-cancer-facts-and-figures.pdf
13. Zafar SY, Abernethy AP: Financial toxicity, Part I: A new name for a growing problem. Oncology (Williston Park) 27:80-149, 2013, 149
14. Asare M, Flannery M, Kamen C: Social determinants of health: A framework for studying cancer health disparities and minority participation in research. Oncol Nurs Forum 44:20-23, 2017
15. Roberts TJ, Kesselheim AS, Avorn J: Variation in use of lung cancer targeted therapies across state Medicaid programs, 2020-2021. JAMA Netw Open 6:e2252562, 2023
16. Jones NL, Gilman SE, Cheng TL, et al: Life course approaches to the causes of health disparities. Am J Public Health 109:S48-S55, 2019
17. Holman DM, Ports KA, Buchanan ND, et al: The association between adverse childhood experiences and risk of cancer in adulthood: A systematic review of the literature. Pediatrics 138:S81-S91, 2016
18. Kayser K, Smith L, Washington A, et al: Living with the financial consequences of cancer: A life course perspective. J Psychosoc Oncol 39:17-34, 2021
19. Gupta S: A Study to Investigate Blinatumomab in Combination with Chemotherapy in Patients with Newly Diagnosed B-Lymphoblastic Leukemia. ClinicalTrials.gov identifier: NCT03914625, 2016. https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCT03914625
20. Children's Oncology Group: A Phase 3 Study of 131I-Metaiodobenzylguanidine (131I-MIBG) or ALK Inhibitor Therapy Added to Intensive Therapy for Children With Newly Diagnosed High-Risk Neuroblastoma (NBL). ClinicalTrials.gov identifier: NCT03126916, 2023. https://clinicaltrials.gov/study/NCT03126916
21. Silverman LB: Treatment of Newly Diagnosed Acute Lymphoblastic Leukemia in Children and Adolescents. Clinicaltrials.gov Identifier: NCT03020030, 2023. https://clinicaltrials.gov/study/NCT03020030
22. Hawkins A, Morohuntodun O, Archer NM, et al: Establishing Health Equity Research Infrastructure: Feasibility of a Sociodemographic Banking Study. American Society of Pediatric Hematology/Oncology (ASPHO) Abstract 2023. Poster presentation. Fort Worth, TX
23. Winestone LE, Getz KD, Miller TP, et al: The role of acuity of illness at presentation in early mortality in black children with acute myeloid leukemia. Am J Hematol 92:141-148, 2017
24. Jones E, Naranjo A, Winestone LE, et al: Feasibility and acceptability of social determinants of health data collection in the context of a Children's Oncology Group trial. J Clin Oncol 41, 2023 (16_suppl; abstr 10010)
25. Aziz-Bose R, Zheng DJ, Umaretiya PJ, et al: Feasibility of oncology clinical trial-embedded evaluation of social determinants of health. Pediatr Blood Cancer 69:e29933, 2022
26. Naz A, Rosenberg E, Andersson N, et al; CLEAR Collaboration: Health workers who ask about social determinants of health are more likely to report helping patients: Mixed-methods study. Can Fam Physician 62:e684-e693, 2016
27. Artiga S, Hinton E: Beyond Health Care: The Role of Social Determinants in Promoting Health and Health Equity. KFF, 2019. https://www.kff.org/racial-equity-and-health-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/
28. Berkowitz SA, Hulberg AC, Standish S, et al: Addressing unmet basic resource needs as part of chronic cardiometabolic disease management. JAMA Intern Med 177:244-252, 2017
29. Meyer D, Lerner E, Phillips A, et al: Universal screening of social determinants of health at a large US Academic Medical Center Universal screening of social determinants of health at a large US Academic Medical Center, 2018. Am J Public Health 110:S219-S221, 2020
30. Garg A, Toy S, Tripodis Y, et al: Addressing social determinants of health at well child care visits: A cluster RCT. Pediatrics 135:e296-e304, 2015
31. Williams MV, Perez L, Siddiqi S, et al: Building the Evidence Base for Social Determinants of Health Interventions. Office of the Assistant Secretary for Planning and Evaluation, 2021. https://aspe.hhs.gov/reports/building-evidence-base-social-determinants-health-interventions
32. PRAPARE: The Protocol for Responding to & Assessing Patients' Assets, Risks & Experiences. PRAPARE. https://prapare.org/
33. Reference deleted
34. Taira BR, Yadav K, Perez Y, et al: A formative evaluation of social care integration across a safety-net health system. NEJM Catalyst 4:CAT.22.0232, 2023
35. Ginsburg GS, Phillips KA: Precision medicine: From science to value. Health Aff (Millwood) 37:694-701, 2018
36. Collins FS, Varmus H: A new initiative on precision medicine. N Engl J Med 372:793-795, 2015
37. Raber M, Jackson A, Basen-Engquist K, et al: Food insecurity among people with cancer: Nutritional needs as an essential component of care. J Natl Cancer Inst 114:1577-1583, 2022
38. Gany F, Melnic I, Wu M, et al: Food to overcome outcomes disparities: A randomized controlled trial of food insecurity interventions to improve cancer outcomes. J Clin Oncol 40:3603-3612, 2022
39. Bona K, Keating NL: Addressing social determinants of health: Now is the time. J Natl Cancer Inst 114:1561-1563, 2022
40. National Cancer Institute: Cancer in Children and Adolescents, 2023. https://www.cancer.gov/types/childhood-cancers/child-adolescent-cancers-fact-sheet
41. Winestone LE, Beauchemin MP, Bona K, et al: Children's Oncology Group's 2023 blueprint for research: Diversity and health disparities. Pediatr Blood Cancer 70:e30592, 2023 (suppl 6)
42. Kline RM, Rocque GB, Rohan EA, et al: Patient navigation in cancer: The business case to support clinical needs. JCO Oncol Pract 15:585-590, 2019
43. Battaglia TA, Fleisher L, Dwyer AJ, et al; National Navigation Roundtable Evidence-Based Task Group: Barriers and opportunities to measuring oncology patient navigation impact: Results from the National Navigation Roundtable survey. Cancer 128:2568-2577, 2022 (suppl 13)
44. Percac-Lima S, Irwin K, Whited E, et al: Implementing a patient navigation program to improve adherence with cancer treatment for community health center patients newly diagnosed with cancer. J Clin Oncol 39, 2021 (28_suppl; abstr 103)
45. Freund KM, Battaglia TA, Calhoun E, et al: Impact of patient navigation on timely cancer care: The patient navigation research program. J Natl Cancer Inst 106:dju115, 2014

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46. Braveman P, Gottlieb L: The social determinants of health: It's time to consider the causes of the causes. Public Health Rep 129:19-31, 2014 (suppl 2)
47. Heinrich J: Nursing in 3D: Diversity, disparities, and social determinants. Introductory statement. Public Health Rep 129:1-2, 2014 (suppl 2)
48. AAPCHO; NACHC: Collecting Standardized Data on Social Determinants of Health to Address Structural Racism, Drive Health Equity, and Respond to COVID-19. https://www.nachc.org/wp-content/uploads/2021/08/Collecting-Standardized-Data-on-Social-Determinants-of-Health-to-Address-Structural-Racism-Drive-Health-Equity-and-Respond-to-COVID-19-1.pdf
49. Daniel H, Bornstein SS, Kane GC, et al: Addressing social determinants to improve patient care and promote health equity: An American College of Physicians Position paper. Ann Intern Med 168: 577-578, 2018
50. Silverstein M, Hsu HE, Bell A: Addressing social determinants to improve population health: The balance between clinical care and public health. JAMA 322:2379-2380, 2019
51. Winkfield KM, Phillips JK, Joffe S, et al: Addressing financial barriers to patient participation in clinical trials: ASCO policy statement. J Clin Oncol 36:3331-3339, 2018
52. Byhoff E, Kangovi S, Berkowitz SA, et al: A society of general internal medicine position statement on the internists' role in social determinants of health. J Gen Intern Med 35:2721-2727, 2020
53. Blas E, Gilson L, Kelly MP, et al: Addressing social determinants of health inequities: What can the state and civil society do? Lancet (London, England) 372:1684-1689, 2008
54. De Lew N, Sommers BD: Addressing social determinants of health in federal programs. JAMA Health Forum 3:e221064, 2022
55. Jahn JL, Zubizarreta D, Chen JT, et al: Legislating inequity: Structural racism in groups of state laws and associations with premature mortality rates. Health Aff 42:1325-1333, 2023
56. Breslin E, Lambertino A: Medicaid and Social Determinants of Health: Adjusting Payment and Measuring Health Outcomes. Health Management Associates, 2017. https://www.healthmanagement.com/wp-content/uploads/SHVS_SocialDeterminants_HMA_July2017.pdf
57. Adler NE, Glymour MM, Fielding J: Addressing social determinants of health and health inequalities. JAMA 316:1641-1642, 2016
58. Hamad R, Rehkopf DH: Poverty and child development: A longitudinal study of the impact of the earned income tax credit. Am J Epidemiol 183:775-784, 2016
59. Hinton E, Diana A: Medicaid Authorities and Options to Address Social Determinants of Health. https://www.kff.org/medicaid/issue-brief/medicaid-authorities-and-options-to-address-social-determinants-of-health-sdoh/
60. Taylor LA, Tan AX, Coyle CE, et al: Leveraging the social determinants of health: What works? PLoS One 11:e0160217, 2016
61. Winkfield KM, Phillips JK, Joffe S, et al: Addressing financial barriers to patient participation in clinical trials: ASCO policy statement. J Clin Oncol 36:3331-3339, 2018
62. Narayan D, Petesch P: Voices of the Poor: From Many Lands. Washington, DC, World Bank and Oxford University Press, 2002
63. Abdalla SM, Hernandez M, Fazaludeen Koya S, et al: What matters for health? Public views from eight countries. BMJ Glob Health 7:e008858, 2022
64. Ortiz I: The Case for Universal Social Protection. International Monetary Fund, 2018. https://www.imf.org/en/Publications/fandd/issues/2018/12/case-for-universal-social-protection-ortiz
65. Gentilini U: Cash Transfers in Pandemic Times: Evidence, Practices, and Implications from the Largest Scale up in History. World Bank Group, 2022. https://documents1.worldbank.org/curated/en/099800007112236655/pdf/P17658505ca3820930a254018e229a30bf8.pdf
66. Pradhan M, Prescott N: Social risk management options for medical care in Indonesia. Health Econ 11:431-446, 2002
67. Galvani-Townsend S, Martinez I, Pandey A: Is life expectancy higher in countries and territories with publicly funded health care? Global analysis of health care access and the social determinants of health. J Glob Health 12:04091, 2022

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AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

Social Determinants of Health and Cancer Care: An ASCO Policy Statement

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