



Leveraging national and global political determinants of health to promote equity in cancer care

Edward Christopher Dee , MD,^{1,*} Michelle Ann B. Eala , MD,^{2,3} Janine Patricia G. Robredo, MD, MBA,^{4,5} Duvern Ramiah, MD,⁶ Anne Hubbard, MBA,⁷ Frances Dominique V. Ho, MD,⁸ Richard Sullivan, MD, PhD,⁹ Ajay Aggarwal, MSc, MRCP, FRCR, PhD,^{10,11} Christopher M. Booth, MD, FRCPC,^{12,13} Gerardo D. Legaspi, MD,¹⁴ Paul L. Nguyen, MD, MBA,¹⁵ C. S. Pramesh, MS, FRCS,¹⁶ Surbhi Grover, MD¹⁷

¹Department of Radiation Oncology, Memorial Sloan Kettering Cancer Center, New York City, NY, USA

²College of Medicine, University of the Philippines, Manila, Philippines

³Department of Radiation Oncology, University of California, Los Angeles, Los Angeles, CA, USA

⁴School of Medicine and Public Health, Ateneo de Manila University, Pasig City, Philippines

⁵Blavatnik Institute of Global Health and Social Medicine, Harvard Medical School, Boston, MA, USA

⁶Division of Radiation Oncology, University of the Witwatersrand, Johannesburg and Charlotte Maxeke Johannesburg Academic Hospital, Johannesburg, South Africa

⁷American Society for Radiation Oncology, Arlington, VA, USA

⁸College of Medicine, University of the Philippines, Manila, Philippines

⁹Kings Health Partners Comprehensive Cancer Centre, King's College London, Institute of Cancer Policy, London, UK

¹⁰Department of Health Services Research and Policy, London School of Hygiene and Tropical Medicine, London, UK

¹¹Clinical Effectiveness Unit, Institute of Cancer Policy, King's College London, London, UK

¹²Department of Oncology, Queen's University, Kingston, ON, Canada

¹³Cancer Care and Epidemiology, Cancer Research Institute, Queen's University, Kingston, ON, Canada

¹⁴Division of Neurosurgery, Department of Neurosciences, College of Medicine and Philippine General Hospital, University of the Philippines Manila, Manila, Philippines

¹⁵Department of Radiation Oncology, Dana-Farber Cancer Institute/Harvard Cancer Center, Boston, MA, USA

¹⁶Tata Memorial Hospital, Thoracic Surgery (Surgical Oncology) at Tata Memorial Centre, Homi Bhabha National Institute, Mumbai, India

¹⁷Department of Radiation Oncology, University of Pennsylvania, Philadelphia, PA, USA

*Correspondence to: Edward Christopher Dee, MD, Department of Radiation Oncology, Memorial Sloan Kettering Cancer Center, 1275 York Ave, New York, NY, USA 10065 (e-mail: deee1@mskcc.org).

Abstract

Health and politics are deeply intertwined. In the context of national and global cancer care delivery, political forces—the political determinants of health—influence every level of the cancer care continuum. We explore the “3-I” framework, which structures the upstream political forces that affect policy choices in the context of actors’ interests, ideas, and institutions, to examine how political determinants of health underlie cancer disparities. Borrowing from the work of PA Hall, M-P Pomey, CJ Ho, and other thinkers, interests are the agendas of individuals and groups in power. Ideas represent beliefs or knowledge about what is or what should be. Institutions define the rules of play. We provide examples from around the world: Political interests have helped fuel the establishment of cancer centers in India and have galvanized the 2022 Cancer Moonshot in the United States. The politics of ideas underlie global disparities in cancer clinical trials—that is, in the distribution of epistemic power. Finally, historical institutions have helped perpetuate disparities related to racist and colonialist legacies. Present institutions have also been used to improve access for those in greatest need, as exemplified by the Butaro Cancer Center of Excellence in Rwanda. In providing these global examples, we demonstrate how interests, ideas, and institutions influence access to cancer care across the breadth of the cancer continuum. We argue that these forces can be leveraged to promote cancer care equity nationally and globally.

Health and politics are deeply intertwined (1). Political forces influence health on many levels, ranging from universal health coverage and financial barriers to health care access; the generation, governance, and use of clinical knowledge; and at the level of nations contending with colonial pasts and inequitable presents, the very definition of how lives are valued across the globe. A growing body of work argues that improving access to health care on all levels requires a political lens (2). The political determinants of health—defined by Dr Daniel Dawes as involving “the systematic process of structuring relationships, distributing

resources, and administering power, operating simultaneously in ways that mutually reinforce or influence one another to shape opportunities that either advance health equity or exacerbate health inequities”—cannot be overlooked (3).

Here, we explore the political determinants of health as they affect access to cancer care across the globe. Disparities in cancer persist globally and at every level of the disease spectrum, ranging from broad differences in risk factors, access to screening, availability of diagnostics, barriers to high-quality care, delivery of psychosocial support and survivorship care, and

access to palliative end-of-life care (4-7). By 2030, three-quarters of deaths attributed to cancer are projected to occur in low- and middle-income countries (8). In the United States, patients from minoritized groups, such as Black patients, are 50% more likely to be diagnosed with prostate cancer than White patients and are twice as likely to die from it (9). In most Southeast Asian settings, approximately half the number of patients with a cancer diagnosis experience financial catastrophe related to the costs of care (10). These disparities are complex in etiology and intersectional in their mechanism, cutting along lines of socioeconomic status, race/ethnicity, geography, language, and other factors (6,7); these disparities persist within and among nations (4,8). Therefore, policy-level solutions are needed at the national and global levels to improve equity in cancer care.

We employ the “3-I” framework, which structures the upstream political forces that affect policy choices in the context of actors’ interests, ideas, and institutions (2). Pomey and colleagues define *interests* as “the agendas of societal groups, elected officials, civil servants, researchers, and policy entrepreneurs” (11). *Ideas* can be understood as “knowledge or beliefs about what is (eg, research knowledge), views about what ought to be (eg, values), or combinations of the two” (11). Finally, *institutions* are defined as “the formal and informal rules, norms, precedents, and organizational factors that structure political behavior” (11)—that is, institutions are the “rules of the game” (2,12). The “3-I” framework is summarized in Table 1. Understanding the convergence of these factors may present novel insights toward global equity in cancer care.

Interests

Governments often prioritize the interests of entities in positions of political power (2); these entities include individuals with financial or social capital or, on the international stage, wealthy economic partners (13). As a corollary, those without power are often marginalized, as evidenced in the increased risk of catastrophic expenditure among people with cancer who are at a socioeconomic disadvantage, disproportionately affecting groups minoritized on lines of race, caste, religion, or otherwise (14). Such financial risks are often exacerbated among the poor, who live in nations that are already resource limited (10). Moreover,

technological innovation in cancer control, which has grown dramatically in recent years, has driven further inequality without improving outcomes equitably (15). Therefore, actors such as oncologists, researchers, public health officials, and policy-makers, as entities with political power, may best be suited to advocate for the most vulnerable.

In India, well over half of patients experience catastrophic health expenditure in light of a cancer diagnosis—one of many manifestations of the “financial toxicity” of cancer care (16)—with deleterious effects borne not just by patients but by their families and caregivers (17,18). Risk factors include populations whose interests are often least prioritized by those in positions of power: low-income households, people living in rural communities, and those with lower educational attainment (17).

In certain states, such as Kerala, a state well known for its long-term progressive policies, government-level efforts have sought to target financial toxicity associated with cancer. For example, because of patient welfare schemes at the Thiruvananthapuram Regional Cancer Center (19)—many of which are government efforts or private-public partnerships—more than half of the patient population receives treatment free of charge. The Thiruvananthapuram Regional Cancer Center has been operational since 1981 and was among the first established since the rollout of the National Cancer Control Programme in the 1980s (18,20). Similarly, at the Tata Memorial Centre (originally in Mumbai but now expanded to 8 other locations in different parts of India), more than two-thirds of patients are treated either completely free or at highly subsidized cost. The Tata Memorial Centre is the largest and oldest (established in 1941) cancer center in India, with more than 125 000 new patients with cancer every year (18).

More recently, the Ayushman Bharat–Pradhan Mantri Jan Arogya Yojana, a flagship initiative of the government of India introduced in 2018, offers up to Rs 500 000 per family per year, covers the poorest 40% (approximately 500 million people) of India’s population, and is available for all patients with cancer (21). It is critical that such services support not just the direct costs of care but also indirect costs such as transportation; housing for patients and caregivers who live far from care centers; and opportunity cost of missed work, especially for daily wage

Table 1. The 3-I framework and examples from cancer equity (11,79,80)

Policy decisions are influenced by actors’ interests, ideas, and institutions		
3-I	Definition	Examples in cancer care
Interests	Interests are the “agendas of societal groups, elected officials, civil servants, researchers, and policy entrepreneurs” (11)	<ul style="list-style-type: none"> Political interests initiated and have since sustained cancer centers in India, such as the Thiruvananthapuram Regional Cancer Center, operational since 1981, and the Tata Memorial Center, operational since 1941 (18,20).
Ideas	Ideas can be understood as “knowledge or beliefs about what is (eg, research knowledge), views about what ought to be (eg, values), or combinations of the two” (11)	<ul style="list-style-type: none"> The 2022 Cancer Moonshot in the United States has galvanized efforts to reduce financial toxicity among cancer survivors. The vast majority of cancer clinical trials are conducted in high-income settings, furthering global epistemic inequities and therefore the power to define what is true in medicine (39,41,43). Pharmaceutical companies exert great influence over which clinical trials are funded and therefore which interventions are assessed for suitability in patient care (45,46).
Institutions	Institutions are the “formal and informal rules, norms, precedents, and organizational factors that structure political behavior” (11) (ie, “the rules of the game”) (2)	<ul style="list-style-type: none"> Histories marked by racism and colonialism have demonstrated far-reaching effects on disparate access to cancer care both in the United States and globally (4, 65). International global health collaborations, led by in-country leaders and community health workers and co-financed by the government of Rwanda, have increased access to cancer care, even for those most socioeconomically disadvantaged (67).

earners (22,23). Such examples show that even in settings with fewer resources, political drivers may improve access to care for patients with cancer.

In the United States, approximately half of patients with cancer experience financial toxicity in its various manifestations, ranging from bankruptcy to delaying or omitting necessary care (24–27). The causes of financial toxicity are incredibly complex and extend well beyond the direct costs of care (24); often, systems serve the interests of powerful entities such as pharmaceutical and insurance companies (28). For example, even among patients with insurance, the requirement of prior authorization can be used to deny medically necessary treatment, potentially resulting in increased costs borne by patients when interventions are denied coverage (29). Although some may argue that prior authorization requirements promote value-based care and cost containment, in practice, implementation often overlooks nuances in shared decision-making between patient and physician and, related to administrative cost burdens, may not provide substantial cost-savings benefits in the final analysis (30).

Fortunately, a growing recognition of cancer care's effects on multiple fronts has galvanized political efforts to target financial consequences of that care. Within several institutions, for example, patients are increasingly screened for financial toxicity and connected with financial resources and financial literacy programs (31). At the national level, President Biden's Cancer Moonshot 2022 statement highlighted the need to "help people overcome the medical, financial, and emotional burdens that cancer brings" (32).

A parallel example from South Africa is demonstrative. In South Africa, which has one of the highest HIV infection rates in the world, political activism around HIV shifted government policy toward free antiretroviral therapy at public health facilities, rolled out in 2004 (33,34). Because of these beginnings, HIV treatment has remained a focus of health care activists in South Africa. Because cancer care until more recently has been less a focus for activists, several South African state hospitals developed long waiting lists for patients to receive radiation therapy (RT). Patients with cancer requiring treatment at state facilities often have a much smaller political voice and less ability to influence political decision-makers than those who receive treatment in private facilities, who are usually wealthier and more influential. Taking a leaf from the HIV activists' playbook, the Cancer Alliance, a group of South African cancer awareness and advocacy groups, staged a march to the provincial premier's office with the intent to bring more political will to fund oncology units in state facilities (35). Increased awareness of the issue in the public domain increased political will to improve state-run cancer services. A task team, including oncologists in state hospitals, informed the government on interventions to reduce RT waiting lists, such as streamlining equipment tender processes. Collective action exerted pressure on political forces and inspired change.

Cancer care is not provided in a vacuum; the onus falls on those who care for people with cancer to make it their interest to treat the person beyond the disease and to use their political power to promote equity.

Ideas

Political ideas—understood as “knowledge or beliefs about what is (eg, research knowledge), views about what ought to be (eg, values), or combinations of the two” (11)—include abstractions of right and wrong and the legitimacy with which they are ascribed (2). In oncology, power to determine research priorities—that is, epistemic power (36)—is concentrated in high-income governing bodies, prestigious journals, and public and private funders

(37,38). Work has shown that epistemic power dictates what research is done and, therefore, whose cancer outcomes are improved (8), with consequences for prioritization of technology development, resource allocation, and access to care (8).

The relative disparity between global cervical cancer research and disease burden is a prime example (39). Because of complex upstream epidemiologic factors, including disparate access to human papillomavirus vaccination and screening, the global incidence of cervical cancer ranges widely and was found to be 3 times greater in countries with a low Human Development Index score than countries with a high score; furthermore, mortality rates were 6-fold greater in countries with a low Human Development Index score compared with countries with a high score (40). And yet a review of radiation oncology randomized trials from 2014 to 2017 found that only 3% of these trials studied cervical cancer, despite the substantially beneficial role of radiation for cervical cancer (39). The authors of the review suggest that the low number of studies on cervical cancer could be the result of the far lower incidence of cervical cancer in high-income countries than in low- to middle-income countries (39), demonstrating the corollaries of disparities in epistemic power (38).

Parallels abound. For example, most randomized controlled trials in oncology are conducted in high-income countries, despite the greater burden of cancer among low- and middle-income countries (41,42). Parallel trends have been demonstrated in research aimed at furthering the role of technological advances such as artificial intelligence in medicine: in most studies, models are trained on data from high-income settings (43,44). In addition, the commercial priorities of the pharmaceutical industry have resulted in the majority of resources centered on innovations in cancer medicines rather than radiotherapeutic, surgical, preventative, diagnostic, or digital advances; industry funds approximately 90% of cancer trials, with associated shifts in trial endpoints (eg, progression-free survival rather than overall survival), increases in statistical power, and focus on medicines rather than other areas of innovation (45,46). There is far less focus on funding research that explores interventions that prioritize value and global equity in access, influencing which ideas end up advancing care (45,47).

Efforts to amplify the voices of minoritized populations in cancer research—within nations and across nations—constitute an important step in using epistemic power to improve equity. For example, in global health and global oncology, there is a greater push to prioritize perspectives from countries that research is designed to serve (48). Indeed, prior work has shown that randomized controlled trials from low- to middle-income countries may be more likely to demonstrate effective therapies, often with greater effect sizes (41). Certain journals have taken bold steps toward equity in publishing by mandating that they will consider manuscripts for publication only if at least 1 of the authors is from a low- to middle-income country or the work has directly benefitted patients in underserved countries (49).

Global health partnerships are gradually shifting to exchange programs where learning is bidirectional, whereas in the past, ideas flowed only from high- to low-resource environments (50). In the United States, there is increasing effort to expand racial and ethnic diversity within cancer clinical trials, cognizant of persistent inequities in whose cancers are better understood (51). Resources should be allocated to facilitate inclusion of low- and middle-income patients in clinical trials, particularly because these patients already struggle with the high costs of cancer care (52). Such inclusion in the generation of clinical knowledge should be coupled with resources dedicated to improving

sustainability of both care delivery and trial execution in settings with lower resources (8,53,54).

In addition, research is not often a priority in low- to middle-income countries because these settings often lack dedicated financial resources and infrastructure (42). It is critical to develop and support local academics to produce context-specific research that contributes to literature and science overall (8,37). Finally, the ideas of implementation science—research that evaluates real-world delivery of care—should be explored and used to promote expansion of cancer care in settings with low resources nationally and globally (55). We posit that greater equity in the distribution of epistemic power would lead to improved equity in cancer health.

Institutions

Finally, national and global institutions, conceptualized as “the rules of the game,” define how power is distributed (2,13). The distribution of power on a global scale has historical roots steeped in colonialism and racism (37,56). These histories have concrete ramifications today, dictating access to cancer care and cancer outcomes. Disparities in access and outcomes faced by minoritized groups within countries (4) and across nations (5) demonstrate how institutions can define who lives and who dies. Work that seeks to improve equity in cancer care must be cognizant of these rules and must employ political institutions to work in favor of those who need care the most.

Systemic and institutionalized racism in the United States is a clear example of how the “rules of the game” are set up such that minoritized groups are often disadvantaged at each level of the cancer care continuum (4). For example, neighborhoods that were historically red lined—those marked by the US Federal Housing Administration in light of the National Housing Act of 1934 in such a way that racial segregation was maintained—demonstrate increased cancer incidence and worse health outcomes (57,58). Patients who identify with minoritized groups; who are uninsured; and, in some settings, who live in majority Black neighborhoods were more likely to experience disparities in access to RT and also interruptions in RT associated with hospitalizations (59-62). In parallel, in many low- to middle-income countries, such as the Philippines, South Africa, and India, cancer care is concentrated in major cities, and inadequate financing systems present persistent barriers to cancer diagnosis and treatment (63-65). Understanding the rules and histories that perpetuate disparities in cancer have led to efforts that aim to mitigate these disparities, particularly those led by members of minoritized groups, leading to decreases in cancer disparities over time (66).

For example, in Rwanda, leaders such as Dr. Agnes Binagwaho have furthered national and international partnerships to promote access to cancer care in low-resource settings, as exemplified in the clinical and academic output of the Butaro Cancer Center of Excellence (67). Work carried out by tens of thousands of Rwandan community health workers, co-financed by the government of Rwanda and supported by international philanthropic and academic partnerships, has improved access to cancer care for the country’s poor (68). In the United States, the National Breast and Cervical Cancer Early Detection Program, active at both the state and local levels, has contributed to decreasing the racial disparities in mammographic screening (69). Although disparities persist (and, in some cases, continue to worsen, as is the case for breast cancer survival outcomes among Black women in America (70)), political forces within institutions are clear examples of factors that can be used to improve equity.

Colonialism represents a parallel example of the power of historical institutions to influence health. The Philippines was a US colony for more than a decade, and it was a Spanish colony for 3 centuries before that (37). India was under British rule for two centuries, and South Africa was colonized by the Dutch and the English until 1961. Generations under colonial rule have depleted formerly colonized nations of resources and have had complex downstream effects that perpetuate poverty across generations (71). Histories lead to institutions that establish global inequities in cancer care: in broad strokes, 70% of cancer deaths occur in low- to middle-income countries (5). Recent work has demonstrated that breast cancer mortality is highest in countries with low and medium Human Development Index scores; indeed, the mortality gap between countries is on the rise (72).

Another layer can be conceived of as a form of “onco-colonialism” in the way in which high-income countries attempt to translate models of cancer care directly to low- to middle-income country settings without consideration for context, societal structure, and specific needs (73); yet another manifestation persists in research “parachutism,” in which research in low- to middle-income countries is conducted to ensure access to data and patients with limited consideration for building sustainable capacity and access to therapies under study (53). Patients in countries such as the Philippines are also most at risk of downstream health effects of climate change (74), despite the fact that many low- to middle-income countries contribute much lower carbon emissions per capita than high-income countries (75). In spite of this, the vast majority of resources for cancer care and research are still concentrated in high-income countries.

Before 1994, under South Africa’s apartheid laws, specialized oncology services such as RT were mainly made available in previously “Whites only” state hospitals. These hospitals were situated in areas that were previously “Whites only” under the apartheid Group Areas Act. Although almost 3 decades has passed since the abolition of the Group Areas Act, the historical legacy of race groups being concentrated in certain areas remains. Specialized state oncology services are still predominantly concentrated in the same hospitals and areas they were before 1994, which are situated far away from many still poor Black South Africans. The ramifications of this segregation are many. In addition to these patients needing to incur far more financial toxicity to access treatment (eg, costs of transportation and accommodation), there are also delays in initial diagnosis because of a more difficult path to access health care. The correlation of breast cancer stage at diagnosis and distance from health services was shown in a 2014 study from South Africa (76). This discrepancy is a contributing factor to, in general, impoverished patients in South Africa often being diagnosed with more advanced stages of cancer and hence experiencing poorer outcomes.

Global efforts to improve global cancer equity must work while cognizant of these histories and institutions. For example, political will is needed to translate innovations in the realm of health services and implementation science into care delivery in low-resource settings. The National Cancer Grid in India is an initiative funded by the government of India aimed at providing uniform standards of cancer care; increasing the human resource in oncology; and providing a platform for collaborative, multicentric, contextually relevant cancer research (8,77). The National Cancer Grid has several innovative initiatives, such as resource-stratified treatment guidelines (linked to the Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana scheme for reimbursement), online expert opinions, virtual tumor boards, and group

negotiations for cancer drugs—all of which are aimed at reducing inequities in cancer care (8,77). In addition, organizations such as the World Health Organization and American Society of Clinical Oncology have begun to strengthen partnerships aimed at using institutional power to promote cancer care equity in the places that need it the most (78).

Conclusion

The political determinants of health affect all points on the cancer care continuum, influencing social determinants of cancer and the pathways to diagnosis, treatment, psychosocial support, survivorship, and end of life. These forces are complex and transdisciplinary, with national themes that have global parallels. The political determinants of health are therefore critical to study and understand. In recognizing the political forces that influence health, the levers of interests, ideas, and institutions can be used to promote equity in cancer care.

Data availability

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

Author contributions

Edward Christopher Dee, MD (Conceptualization; Project administration; Supervision; Writing—original draft; Writing—review & editing), Michelle Ann Eala, MD (Conceptualization; Project administration; Writing—original draft; Writing—review & editing), Janine Patricia G. Robredo, MD, MBA (Writing—original draft; Writing—review & editing), Duvern Ramiah, MD (Writing—original draft; Writing—review & editing), Anne Hubbard, MBA (Writing—original draft; Writing—review & editing), Frances Dominique V. Ho, MD (Writing—original draft; Writing—review & editing), Richard Sullivan, MD, PhD (Writing—original draft; Writing—review & editing), Ajay Aggarwal, MSc, MRCP, FRCR, PhD (Writing—original draft; Writing—review & editing), Christopher Booth, MD, FRCPC (Writing—original draft; Writing—review & editing), Gerardo D. Legaspi, MD (Writing—original draft; Writing—review & editing), Paul L. Nguyen, MD, MBA (Writing—original draft; Writing—review & editing), C. S. Pramesh, MS, FRCS (Writing—original draft; Writing—review & editing), Surbhi Grover, MD (Conceptualization; Project administration; Supervision; Writing—original draft; Writing—review & editing).

Funding

Dr Dee is funded in part through the National Institutes of Health/National Cancer Institute Support Grant P30 CA008748 outside the submitted work.

Conflicts of interest

The authors have no conflicts of interest to declare.

Acknowledgments

The funder was not involved in the study design, interpretation of prior works, the writing of this manuscript, or the decision to submit it for publication.

References

1. Navarro V, Muntaner C, Borrell C, et al. Politics and health outcomes. *Lancet*. 2006;368(9540):1033-1037. doi:10.1016/S0140-6736(06)69341-0.
2. Ho CJ, Khalid H, Skead K, Wong J. The politics of universal health coverage. *Lancet*. 2022;399(10340):2066-2074. doi:10.1016/S0140-6736(22)00585-2.
3. Dawes DE. *The Political Determinants of Health*. Baltimore, MD: Johns Hopkins University Press; 2020.
4. Zavala VA, Bracci PM, Carethers JM, et al. Cancer health disparities in racial/ethnic minorities in the United States. *Br J Cancer* 2021;124(2):315-332. doi:10.1038/s41416-020-01038-6
5. Sung H, Ferlay J, Siegel RL, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin*. 2021;71(3):209-249. doi:10.3322/caac.21660
6. Dee EC, Pierce LJ, Winkfield KM, Lam MB. In pursuit of equity in cancer care: moving beyond the Affordable Care Act. *Cancer*. 2022;128(18):3278-3283. doi:10.1002/cncr.34346.
7. Alberto NRI, Alberto IRI, Puyat CVM, et al. Disparities in access to cancer diagnostics in ASEAN member countries. *Lancet Reg Heal West Pacific*. 2023;32:100667. doi:10.1016/j.lanwpc.2022.100667.
8. Pramesh CS, Badwe RA, Bhoo-Pathy N, et al. Priorities for cancer research in low- and middle-income countries: a global perspective. *Nat Med*. 2022;28(4):649-657. doi:10.1038/s41591-022-01738-x.
9. Rebbeck TR. Prostate cancer disparities by race and ethnicity: from nucleotide to neighborhood. *Cold Spring Harb Perspect Med*. 2018;8(9):a030387. doi:10.1101/cshperspect.a030387.
10. ACTION Study Group; Kimman M, Jan S, Yip CH, et al. Catastrophic health expenditure and 12-month mortality associated with cancer in Southeast Asia: results from a longitudinal study in eight countries. *BMC Med*. 2015;13:190. doi:10.1186/s12916-015-0433-1.
11. Pomey M-P, Morgan S, Church J, et al. Do provincial drug benefit initiatives create an effective policy lab? The evidence from Canada. *J Health Polit Policy Law*. 2010;35(5):705-742. doi:10.1215/03616878-2010-025.
12. North DC. A transaction cost theory of politics. *J Theor Polit*. 1990;2(4):355-367. doi:10.1177/0951692890002004001.
13. Bourdieu P. The forms of capital. In: Richardson J. *Handbook of Theory and Research for the Sociology of Education*. Westport, CT: Greenwood;1986:241-258.
14. Jagsi R, Ward KC, Abrahamse PH, et al. Unmet need for clinician engagement regarding financial toxicity after diagnosis of breast cancer. *Cancer*. 2018;124(18):3668-3676. doi:10.1002/cncr.31532.
15. Sullivan R, Aggarwal A. Technology and cancer systems: creating better policy to enhance equality. In: Vaccarella S, Lortet-Tieulent J, Saracci R, et al., eds. *Reducing Social Inequalities in Cancer: Evidence and Priorities for Research*. IARC Scientific Publications, No. 168. Lyon: International Agency for Research on Cancer; 2019. <https://www.ncbi.nlm.nih.gov/books/NBK566180/>. Accessed June 24, 2023.
16. Carrera PM, Kantarjian HM, Blinder VS. The financial burden and distress of patients with cancer: understanding and stepping-up action on the financial toxicity of cancer treatment. *CA Cancer J Clin*. 2018;68(2):153-165. doi:10.3322/caac.21443.
17. Boby JM, Rajappa S, Mathew A. Financial toxicity in cancer care in India: a systematic review. *Lancet Oncol*. 2021;22(12):e541-e549. doi:10.1016/S1470-2045(21)00468-X.

18. Pramesh CS, Badwe RA, Borthakur BB, et al. Delivery of affordable and equitable cancer care in India. *Lancet Oncol*. 2014;15(6):223-233. doi:10.1016/S1470-2045(14)70117-2.
19. Patient welfare schemes. Regional Cancer Center Thiruvananthapuram. 2012. <https://www.rcctvm.gov.in/patient-welfare.php>. Accessed July 10, 2022.
20. Chalkidou K, Marquez P, Dhillion PK, et al. Evidence-informed frameworks for cost-effective cancer care and prevention in low, middle, and high-income countries. *Lancet Oncol*. 2014;15(3):e119-e131. doi:10.1016/S1470-2045(13)70547-3.
21. Caduff C, Booth CM, Pramesh CS, Sullivan R. India's new health scheme: what does it mean for cancer care? *Lancet Oncol*. 2019;20(6):757-758. doi:10.1016/S1470-2045(19)30322-5.
22. Khan A, Yattoo G, Mir MS. Impact of Ayushman Bharat scheme on the prevalence of distress financing and catastrophic health expenditure among patients attending a tertiary care teaching hospital. *Rivista Med*. 2021;(1):1-5.
23. Eala MAB, Dee EC, Ginsburg O, Chua MLK, Bhoo-Pathy N. Financial toxicities of cancer in low- and middle-income countries: perspectives from Southeast Asia. *Cancer*. 2022;128(16):3013-3015. doi:10.1002/ncr.34353.
24. Smith GL, Banegas MP, Acquati C, et al. Navigating financial toxicity in patients with cancer: a multidisciplinary management approach. *CA Cancer J Clin*. 2022;72(5):437-453. doi:10.3322/caac.21730.
25. Kazzi B, Chino F, Kazzi B, et al. Shared burden: the association between cancer diagnosis, financial toxicity, and healthcare cost-related coping mechanisms by family members of non-elderly patients in the USA. *Support Care Cancer*. 2022;30(11):8905-8917. doi:10.1007/s00520-022-07234-9.
26. Dee EC, Nipp RD, Muralidhar V, et al. Financial worry and psychological distress among cancer survivors in the United States, 2013-2018. *Support Care Cancer*. 2021;29(9):5523-5535. doi:10.1007/s00520-021-06084-1.
27. Dee EC, Chino F. Financial hardship in cancer care—the need to define and intervene on actionable metrics. *JAMA Netw Open*. 2022;5(7):e2223149. doi:10.1001/jamanetworkopen.2022.23149.
28. Zettler ME, Feinberg BA, Jeune-Smith Y, Jajra A. Impact of social determinants of health on cancer care: a survey of community oncologists. *BMJ Open*. 2021;11(10):e049259. doi:10.1136/bmjopen-2021-049259.
29. Shen X, Spratt DE, Dusetzina SB, Chen RC. Variations in medical necessity determinations across commercial insurance carriers for prostate cancer procedures. *Int J Radiat Oncol Biol Phys*. 2023;115(1):34-38. doi:10.1016/j.ijrobp.2022.07.1839.
30. Agarwal A, Freedman RA, Goicuria F, et al. Prior authorization for medications in a breast oncology practice: navigation of a complex process. *J Oncol Pract*. 2017;13(4):e273-e282. doi:10.1200/JOP.2016.017756.
31. Khera N, Kumbamu A, Langer SL, et al. Developing an educational intervention to address financial hardship in cancer patients. *Mayo Clin Proc Innov Qual Outcomes*. 2020;4(4):424-433. doi:10.1016/j.mayocpiqo.2020.04.004.
32. Fact Sheet: President Biden reignites Cancer Moonshot to end cancer as we know it [news release]. Washington, DC: The White House Briefing Room; February 2, 2022. <https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/02/fact-sheet-president-biden-reignites-cancer-moonshot-to-end-cancer-as-we-know-it/>. Accessed June 24, 2023.
33. Mottiar S, Dubula V. Shifting consciousness and challenging power: women activists and the provision of HIV/AIDS services. *Law, Democr Dev*. 2020;24(1):158-176.
34. Burger C, Burger R, van Doorslaer E. The health impact of free access to antiretroviral therapy in South Africa. *Soc Sci Med*. 2022;299:114832. doi:10.1016/j.socscimed.2022.114832.
35. Ho U. 'The government is killing cancer patients by keeping us on waiting lists then sending us home to die.' *Daily Maverick*. November 23, 2021. <https://www.dailymaverick.co.za/article/2021-11-23-the-government-is-killing-cancer-patients-by-keeping-us-on-waiting-lists-then-sending-us-home-to-die/>. Accessed June 24, 2023.
36. Bhakuni H, Abimbola S. Epistemic injustice in academic global health. *Lancet Glob Heal*. 2021;9(10):e1465-e1470. doi:10.1016/S2214-109X(21)00301-6.
37. Dee EC, Lasco G. Decolonising global health: a Philippine perspective. *Lancet*. 2022;399(10338):1863. doi:10.1016/S0140-6736(22)00831-5.
38. Patel TA, Ting FIL, Jain B, et al. Epistemic equity in oncology: opportunities to leverage patient-centric implementation in clinical trial design. *Cancer*. 2023;129(9):1313-1315. doi:10.1002/cncr.34674.
39. Dodkins J, Hopman WM, Wells JC, et al. Is clinical research serving the needs of the global cancer burden? An analysis of contemporary global radiation therapy randomized controlled trials. *Int J Radiat Oncol Biol Phys*. 2022;113(3):500-508. doi:10.1016/j.ijrobp.2022.01.053.
40. Singh D, Vignat J, Lorenzoni V, et al. Global estimates of incidence and mortality of cervical cancer in 2020: a baseline analysis of the WHO Global Cervical Cancer Elimination Initiative. *Lancet Glob Health*. 2023;11(2):e197-e206. doi:10.1016/S2214-109X(22)00501-0.
41. Wells JC, Sharma S, Del Paggio JC, et al. An analysis of contemporary oncology randomized clinical trials from low/middle-income vs high-income countries. *JAMA Oncol*. 2021;7(3):379-385. doi:10.1001/jamaoncol.2020.7478.
42. Eala MAB, Basilio PAS, Dee EC, et al. Cancer clinical trials in the Philippines. *Cancer Causes Control*. 2022;33(10):1273-1275. doi:10.1007/s10552-022-01611-9.
43. Celi LA, Cellini J, Charpignon M-L, et al.; MIT Critical Data. Sources of bias in artificial intelligence that perpetuate health-care disparities—a global review. *PLOS Digit Heal*. 2022;1(3):e0000022. doi:10.1371/journal.pdig.0000022.
44. Swami N, Corti C, Curigliano G, Celi LA, Dee EC. Exploring biases in predictive modelling across diverse populations. *Lancet Healthy Longev*. 2022;3(2):e88. doi:10.1016/S2666-7568(21)00307-X.
45. Booth CM, Aggarwal A, Sullivan R. Commercial determinants of cancer medicines. *Eurohealth (Lond)*. 2022;28(2):18-21.
46. Sullivan R, Behncke I, Purushotham A. Why do we love medicines so much? *EMBO Rep*. 2010;11(8):572-578. doi:10.1038/embor.2010.108.
47. Abraham J. Pharmaceuticalization of society in context: theoretical, empirical and health dimensions. *Sociology*. 2010;44(4):603-622. doi:10.1177/0038038510369368.
48. Kumar M, Atwoli L, Burgess RA, et al. What should equity in global health research look like? *Lancet*. 2022;400(10347):145-147. doi:10.1016/S0140-6736(22)00888-1.
49. Cazap E, Sullivan R, Foxall K. New journal authorship criteria: how e cancermedicalscience is supporting authors and readers from underserved settings. *Ecancermedicalscience*. 2020;14:ed106. doi:10.3332/ecancer.2020.ed106.
50. Arora G, Russ C, Batra M, Butteris SM, Watts E, Pitt MB. Bidirectional exchange in global health: moving toward true global health partnership. *Am J Trop Med Hyg*. 2017;97(1):6-9. doi:10.4269/ajtmh.16-0982.

51. Oyer RA, Hurley P, Boehmer L, et al. Increasing racial and ethnic diversity in cancer clinical trials: an American Society of Clinical Oncology and Association of Community Cancer Centers joint research statement. *J Clin Oncol*. 2022;40(19):2163-2171. doi:10.1200/JCO.22.00754.
52. Winkfield KM. Improving access to cancer clinical trials by reducing the financial burden. *Cancer*. 2020;126(1):14-16. doi:10.1002/cncr.32523.
53. Smith J. Parasitic and parachute research in global health. *Lancet Glob Heal*. 2018;6(8):e838. doi:10.1016/S2214-109X(18)30315-2.
54. Park JJH, Grais RF, Taljaard M, et al. Urgently seeking efficiency and sustainability of clinical trials in global health. *Lancet Glob Health*. 2021;9(5):e681-e690. doi:10.1016/S2214-109X(20)30539-8.
55. Tapela NM, Mpunga T, Karema N, et al. Implementation science for global oncology: the imperative to evaluate the safety and efficacy of cancer care delivery. *J Clin Oncol*. 2016;34(1):43-52. doi:10.1200/JCO.2015.61.7738.
56. Horton R. Offline: the myth of “decolonising global health.” *Lancet*. 2021;398(10312):1673. doi:10.1016/S0140-6736(21)02428-4.
57. Krieger N, Wright E, Chen JT, Waterman PD, Huntley ER, Arcaya M. Cancer stage at diagnosis, historical redlining, and current neighborhood characteristics: breast, cervical, lung, and colorectal cancers, Massachusetts, 2001-2015. *Am J Epidemiol*. 2020;189(10):1065-1075. doi:10.1093/aje/kwaa045.
58. Mujahid MS, Gao X, Tabb LP, Morris C, Lewis TT. Historical redlining and cardiovascular health: the multi-ethnic study of atherosclerosis. *Proc Natl Acad Sci U S A*. 2021;118(51):e2110986118. doi:10.1073/pnas.2110986118.
59. Hubler A, Wakefield DV, Makepeace L, et al. Independent predictors for hospitalization-associated radiation therapy interruptions. *Adv Radiat Oncol*. 2022;7(6):101041. doi:10.1016/j.adro.2022.101041.
60. Dee EC, Muralidhar V, Arega MA, et al. Factors influencing non-completion of radiotherapy among men with localized prostate cancer. *Int J Radiat Oncol Biol Phys*. 2021;109(5):1279-1285. doi:10.1016/j.ijrobp.2020.11.064.
61. Dee EC, Arega MA, Yang DD, et al. Disparities in refusal of locoregional treatment for prostate adenocarcinoma. *J Clin Oncol Oncol Pract*. 2021;17(10):e1489-e1501. doi:10.1200/OP.20.00839.
62. Jain B, Yamoah K, Lathan CS, et al. Racial disparities in treatment delay among younger men with prostate cancer. *Prostate Cancer Prostatic Dis*. 2022;25(3):590-592. doi:10.1038/s41391-021-00479-1.
63. Puyat CVM, Eala MAB, Dee EC, et al. Prioritising access to cancer drugs. *Lancet Oncol*. 2022;23(1):e2. doi:10.1016/S1470-2045(21)00637-9.
64. Alberto NRI, Alberto IRI, Eala MAB, Dee EC, Cañal JPA. Availability of essential diagnostics in the Philippines. *Lancet Reg Heal West Pacific*. 2022;19:100375. doi:10.1016/j.lanwpc.2021.100375.
65. Eala MAB, Maslog EAS, Dee EC, et al. Geographic distribution of cancer care providers in the Philippines. *J Clin Oncol Glob Oncol*. 2022;8:e2200138. doi:10.1200/GO.22.00138.
66. DeSantis CE, Miller KD, Goding Sauer A, Jemal A, Siegel RL. Cancer statistics for African Americans, 2019. *CA Cancer J Clin*. 2019;69(3):211-233. doi:10.3322/caac.21555.
67. Shulman LN, Mpunga T, Tapela N, Wagner CM, Fadelu T, Binagwaho A. Bringing cancer care to the poor: experiences from Rwanda. *Nat Rev Cancer*. 2014;14(12):815-821. doi:10.1038/nrc3848.
68. Stulac S, Binagwaho A, Tapela NM, et al. Capacity building for oncology programmes in sub-Saharan Africa: the Rwanda experience. *Lancet Oncol*. 2015;16(8):e405-e413. doi:10.1016/S1470-2045(15)00161-8.
69. Peek ME, Han JH. Disparities in screening mammography. *J Gen Intern Med*. 2004;19(2):184-194. doi:10.1111/j.1525-1497.2004.30254.x.
70. Jatoi I, Sung H, Jemal A. The emergence of the racial disparity in U.S. breast-cancer mortality. *N Engl J Med*. 2022;386(25):2349-2352. doi:10.1056/NEJMp2200244.
71. Booth AE. *Colonial Legacies: Economic and Social Development in East and Southeast Asia*. Honolulu: University of Hawaii Press; 2007. <https://library.oapen.org/bitstream/handle/20.500.12657/30241/648337.pdf?sequence=1&isAllowed=y>. Accessed June 24, 2023.
72. Heer E, Harper A, Escandor N, Sung H, McCormack V, Fidler-Benaoudia MM. Global burden and trends in premenopausal and postmenopausal breast cancer: a population-based study. *Lancet Glob Heal*. 2020;8(8):e1027-e1037. doi:10.1016/S2214-109X(20)30215-1.
73. Khan T, Abimbola S, Kyobutungi C, Pai M. How we classify countries and people—and why it matters. *BMJ Glob Heal*. 2022;7(6):e009704. doi:10.1136/bmjgh-2022-009704.
74. Eala MAB, Robredo JPG, Dee EC, Lin V, Lagmay AMFA. Climate crisis and cancer: perspectives from the hardest hit. *Lancet Oncol*. 2022;23(3):e92. doi:10.1016/S1470-2014(21)00595-7.
75. CO2 emissions (metric tons per capita). The World Bank. <https://data.worldbank.org/indicator/EN.ATM.CO2E.PC>. Accessed July 10, 2022.
76. Dickens C, Joffe M, Jacobson J, et al. Stage at breast cancer diagnosis and distance from diagnostic hospital in a periurban setting: a South African public hospital case series of over 1,000 women. *Int J Cancer*. 2014;135(9):2173-2182. doi:10.1002/ijc.28861.
77. Pramesh C, Badwe R, Sinha R. The National Cancer Grid of India. *Indian J Med Paediatr Oncol*. 2014;35(3):226-227. doi:10.4103/0971-5851.142040.
78. The Lancet. Cancer care: widening the scope of innovation. *Lancet*. 2022;399(10344):2325. doi:10.1016/S0140-6736(22)01134-5.
79. Hall P. The role of interests, institutions, and ideas in the comparative political economy of the industrialized nations. In: Lichbach MI, Zuckerman AS, eds. *Comparative Politics: Rationality, Culture, and Structure*. Cambridge, UK: Cambridge University Press; 1997:174-207.
80. Lavis J, Ross S, Hurley J, et al. Examining the role of health services research in public policymaking. *Milbank Q*. 2002;80(1):125-154.