

TITLE

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

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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 “three-i” framework – which structures the upstream political forces that impact policy choices in the context of actors’ interests, ideas, and institutions – to examine how political determinants of health underlie cancer disparities.

Interests are “the agendas of societal groups, elected officials, civil servants, researchers, and policy entrepreneurs.” Ideas manifest in “knowledge or beliefs about what is (e.g., research knowledge), views about what ought to be (e.g., values), or combinations of the two.” And institutions are “the rules of the game.”

We provide examples from around the world. Political interests have helped to 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. Ideas also influence which interventions are tested in costly trials. Lastly, historical institutions have helped to perpetuate disparities related to racist and colonialist legacies. Current institutions have also been leveraged to improve access for those in greatest need, as exemplified by the experience 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.

Equity in cancer care: a national and global political challenge

Health and politics are deeply intertwined.¹ Political forces influence health on myriad levels, ranging from universal health coverage and financial barriers to healthcare 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 healthcare 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 often-overlooked 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 US, 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 are intersectional in their mechanism, cutting along lines of socioeconomic status, race/ethnicity, geography, language, and others;^{6,7} these disparities persist within and amongst 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 impact 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 (e.g., research knowledge), views about what ought to be (e.g., values), or combinations of the two.”¹¹ Lastly, 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} These “3-i” framework is summarized in Table 1. Understanding the convergence of these factors may present novel insights towards 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, evidenced in the increased risk of catastrophic expenditure amongst 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 amongst the poor who live in already resource-limited nations.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 policymakers, 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 care¹⁶ – 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, due to patient welfare schemes at the Thiruvananthapuram Regional Cancer Center¹⁹ – many of which are government efforts or private-public partnerships – over half of the patient population receives treatment free of charge. The Thiruvananthapuram Regional Cancer Center has been operational since 1981, and was amongst 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 eight other locations in different parts of India), over 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 over 125,000 new patients with cancer every year.¹⁸

More recently, the Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (AB-PMJAY), 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 earners.^{22,23} Such examples show that even in settings that are less resourced, political drivers may improve access to care for patients with cancer.

In the US, 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 oftentimes, systems serve the interests of powerful entities such as pharmaceutical and insurance companies.²⁸ For example, even amongst 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 significant cost-savings benefits in the final analysis.³⁰

Fortunately, a growing recognition of its effects on multiple fronts has galvanized political efforts to target financial consequences of cancer care. Within several institutions, for example, patients are increasingly screened for financial toxicity and are connected with financial resources and financial literacy programs.³¹ On 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 towards free antiretroviral therapy at public health facilities, rolled out in 2004.^{33,34} Due to these beginnings, HIV treatment has remained a focus of healthcare activists in South Africa. Because cancer care until more recently has been less of a focus for activists, several South African state hospitals developed long waiting lists for patients to receive radiation therapy. Patients with cancer requiring treatment at state facilities often have a much smaller political voice and less of an ability to influence political decisionmakers 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 radiotherapy 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 leverage their political power to promote equity.

Ideas

Political ideas – understood as “knowledge or beliefs about what is (e.g., research knowledge), views about what ought to be (e.g., 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 therefore, access to care.⁸

The relative disparity between global cervical cancer research and burden of disease is a prime example.³⁹ Due to complex upstream epidemiologic factors including disparate access to HPV vaccination and screening, the global incidence of cervical cancer ranges widely, and was found to be three times greater in countries with low Human Development Index (HDI) than countries with very high HDI; furthermore, mortality rates were sixfold greater in countries with low HDI compared with countries with very high HDI.⁴⁰ And yet a review of radiation oncology randomized trials from 2014-2017 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 due to the far lower incidence of cervical cancer in high-income countries (HICs) compared with LMICs,³⁹ demonstrating the corollaries of disparities in epistemic power, that is, how ideas shape action.³⁸

Parallels abound. For example, most randomized controlled trials (RCTs) in oncology are conducted in high-income countries, despite the greater burden of cancer amongst low- and middle-income countries (LMICs).^{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} Additionally, 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 ~90% of cancer trials, with associated shifts in trial endpoints (e.g. 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 of a

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 RCTs from LMICs may be more likely to demonstrate effective therapies, often with greater effect sizes.⁴¹ Certain journals have taken bold steps towards equity in publishing by mandating that they will consider manuscripts for publication only if at least one of the authors is from an LMIC or the work has significant impact in underserved countries.⁴⁹

Global health partnerships are gradually shifting to exchange programs where learning is bidirectional, whereas in the past, ideas only flowed from high to low-resourced environments.⁵⁰ In the US, there is increasing effort to increase 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 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 less resourced settings.^{8,53,54}

Additionally, research is not often a priority in LMICs 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 to contribute to literature and science overall.^{8,37} Lastly, the ideas of implementation science – research that evaluates real-world delivery of care – should be explored and leveraged to promote expansion of cancer care in low-resource settings nationally and globally.⁵⁵ We posit that greater equity in the distribution of epistemic power – that is, the ability to shape ideas about cancer care – would lead to improved equity in cancer health.

Institutions

Lastly, 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 seeped 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 countries⁴ and across nations⁵ 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 leverage political institutions to work in favor of those who need care the most.

Systemic and institutionalized racism in the US 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 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 African American neighborhoods were more likely to experience disparities in access to radiotherapy and also interruptions in radiotherapy associated with hospitalizations.^{59–62} In parallel, in many LMICs like 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 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, cofinanced by the Rwandan government, and supported by international philanthropic and academic partnerships, has improved access to cancer care for the country's poor.⁶⁸ In the US, 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 America⁷⁰), political forces within institutions are clear examples of factors that may be levered to improve equity.

Colonialism represents a parallel example of the power of historical institutions to influence health. The Philippines was a US colony for half a decade and was a Spanish colony for three centuries before that.³⁷ India was a colony of the UK for over a century, 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 LMICs.⁵ Recent work has demonstrated that breast cancer mortality is highest in countries with low and medium human development indices; 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 HICs attempt to translate models of cancer care directly to LMIC settings without consideration for context, societal structure, and specific needs;⁷³ yet another manifestation persists in research parachutism, in which research in LMICs 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 LMICs contribute much lower carbon emissions per capita than HICs.⁷⁵ In spite of this, the vast majority of resources for cancer care and research are still concentrated in HICs.

In South Africa, prior to 1994, under apartheid laws, specialized oncology services such as radiotherapy were mainly made available in previously “whites only” state hospitals. These hospitals were situated in areas which were previously “whites only” under the apartheid Group Areas Act. Although almost three decades has passed since the abolition of the Group Areas Act, the historical legacy of race groups being concentrated in certain areas still exists. Specialized state oncology services are still predominantly concentrated in the same hospitals and areas which they were prior to 1994, which are situated far away from many still poor black South Africans. The ramifications of this are many. In addition to them needing to incur far more financial toxicity to access treatment (e.g. costs of transportation and accommodation), there are also delays in initial diagnosis due to a more difficult path to access healthcare. The correlation of stage of breast cancer diagnosis and distance from health services was shown in a 2014 study from South Africa.⁷⁶ This is a contributing factor to, in general, impoverished patients in South Africa often being diagnosed with more advanced stages of cancer, and hence having 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 (NCG) 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 NCG has several innovative initiatives like resource-stratified treatment guidelines (linked

to the AB-PMJAY scheme for reimbursement), online expert opinions, virtual tumor boards, and group negotiations for cancer drugs amongst others—all of which are aimed at reducing inequities in cancer care.^{8,77} Additionally, organizations like the WHO and ASCO have begun to strengthen partnerships aimed at using institutional power to promote cancer care equity in places that need it the most.⁷⁸

Conclusion

In 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 local themes with 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 may be used to promote equity in cancer care.

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	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 since 1941^{18,20} - The 2022 Cancer Moonshot in the US has galvanized efforts to reduce financial toxicity among cancer survivors
Ideas	Ideas can be understood of as “knowledge or beliefs about what is (e.g., research knowledge), views about what ought to be (e.g., values), or combinations of the two ¹¹	<ul style="list-style-type: none"> - 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	The formal and informal rules, norms, precedents, and organizational factors that structure political behavior; ¹¹ i.e. 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 US and globally^{4,6,63-65}- International global health collaborations, led by in-country leaders and community health workers and co-financed by the Rwandan Government, have increased access to cancer care even for those most socioeconomically disadvantaged⁶⁷
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