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## Editorial

### Social inequity and cancer



“Cancer is a disease of difference not only at the micro or molecular level but also at the macro or societal level.”

Christopher P Wild, *Reducing Social Inequalities in Cancer*, IARC 2019.<sup>1</sup>, page 1

Globally, incidence and mortality from cancer are increasing as a result of improved control of infectious diseases and resulting higher life expectancy.<sup>1</sup> In 2020, the global cancer burden was estimated to be 19.3 million new cases with 9.9 million deaths.<sup>2</sup> Almost half of these cases and close to 60% of deaths occur in Asia, including Asia-Pacific. Within this region, there are marked differences, with Australia having some of the best cancer outcomes in the world, with a mortality-to-incidence ratio of under 0.3, while south-central Asia and Micronesia have outcomes among the worst, with a mortality-to-incidence ratio of almost 0.7.<sup>2</sup>

The patterns of cancer and the measures needed to control cancer differ between countries and for different populations within each country. This is because incidence, mortality, survival, and impact are not shared equally among the population but reflect social inequalities in the distribution of risk factors, access to services for prevention, early detection, and treatment as well as support systems to mitigate the impact of cancer on social outcomes.<sup>1</sup>

There is marked variation in exposure to risk factors for cancer (including cigarette smoking, inactivity, and obesity), access to and uptake of preventative efforts (for example vaccination), screening and diagnostic tests, effective treatments, supportive care, survivorship, and end-of-life care.<sup>1</sup>

Variation exists according to factors such as personal income, education level, and area of residence (between and within countries), but also according to Indigenous background, race, and ethnicity, and for people from lesbian, gay, bisexual, transgender, queer and/or questioning, intersex, asexual (LGBTIQ)+backgrounds.<sup>1</sup>

Access to health workers is an important marker of overall access to services, with the density of health workers per 100,000 population ranging from 170 in high-income countries to less than 30 in low-income countries.<sup>3</sup> This disparity of distribution is reflected in access to almost all essential parts of cancer treatment from screening and diagnostic tests to treatments including radiotherapy and to effective, inexpensive pain relief.

Understanding differences in the social determinants of health is critical to our capacity as health professionals to reduce the impact of these differences on cancer outcomes and experiences. Social determinants of health are the conditions under which people are born, live, learn, work, play, worship, and age.<sup>4</sup> Examples include safe housing, transportation, and neighbourhoods; access to healthy foods and opportunities to exercise; clean air and water; education, work, and income; racism, discrimination, and violence; language and literacy skills.<sup>4</sup> An unsafe environment can expose people to infectious diseases and other carcinogens. Lack of healthy food and opportunities to exercise

predisposes to cancer, as well as chronic diseases such as obesity, heart disease, stroke, and diabetes. Addressing social determinants includes, but is broader than health, and considers aspects such as education, transport, housing, regional planning, and policing.

Social determinants are shaped by factors such as the distribution of wealth, power, and resources at a global, national, and local level. As a result of maldistribution, unfair and avoidable differences in health status occur between individuals, communities, and countries.

Socioeconomic difference is commonly measured through indicators such as individual income, educational attainment, or occupation. In many analyses of social inequalities related to cancer, area of residence is used as a surrogate of socioeconomic (dis)advantage, due to limited access to more nuanced measures such as personal or household income. This inhibits our capacity to accurately measure the impact of social disadvantage.

Economic disadvantage is a primary driver of cancer inequalities. The human development index (HDI) incorporates average life expectancy, education levels, and per capita income. Countries with a higher HDI have significantly better outcomes from cancer than countries with a low HDI.<sup>1</sup> However, even within high HDI countries, a higher socioeconomic position is associated with lower cancer mortality,<sup>1</sup> which is seen in all high-income countries, regardless of health system design.

There are many factors that influence access to good health outcomes. Levesque et al.<sup>5</sup> defined a model of service access that identified five characteristics of health services that impact on access: approachability, acceptability, availability, affordability, and appropriateness. These features might help us understand differences in access by people from different ethnic backgrounds, for Indigenous people, those who have experienced trauma, or who fear discrimination such as those from LGBTIQ+ communities. How we as health providers design our services matters in terms of how they are taken up and experienced by those who need them.

The Levesque model also identifies five characteristics of individuals impacting access: ability to perceive, ability to seek, ability to reach, ability to pay, and ability to engage. These characteristics point to the things we need to understand about people with cancer as they enter the health system if we are to reduce the impact of social determinants of health on cancer outcomes. As health professionals, we rarely have access to data that would help us understand how social disadvantage impacts our patients. For example, do we analyze data on missed appointments to look for the potential of financial hardship to limit accessibility? Do we understand how lower health literacy might impact health awareness, access, use of services, or adherence to health advice?

So how do we begin to address social inequities in cancer at global, national, and local levels? Globally, the intersection between higher cancer burden and HDI is clear and thus is best addressed through support of the UN's Sustainable Development Goals. While goals 10 (reduced

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inequalities) and 3 (good health and well-being) are clearly a focus, relevance is also found in goals related to the elimination of poverty (goal 1); alleviating hunger (goal 2); quality education (goal 4); clean water and sanitation (goal 6); decent work and economic growth (goal 8); sustainable cities and communities (goal 11); and peace, justice, and strong institutions (goal 16). These latter goals speak to the breadth of the social determinants of health.

At a national level, strengthening our capacity to understand inequalities in cancer outcomes beyond area-level disadvantage is key. Advocating for universal health coverage for key cancer diagnostic and treatment procedures will be important. Additionally, an economic safety net above the poverty line will help ensure cancer does not result in intergenerational financial catastrophe.

Finally, at a local service delivery level, it is important for health professionals to understand both the social determinants of health and intersectionality—the ways in which aspects of a person's social identity combine to increase the nature of both advantage and disadvantage. Those experiencing cumulative disadvantage are most at risk of poor outcomes from cancer. We must find ways to identify these patients and establish mechanisms to mitigate the impact of disadvantage. For us, addressing the impact of the social determinants of health on cancer outcomes is a matter of justice and human rights.

While the problem of inequity is well described, there is very little evidence of successful interventions to reduce socioeconomic disadvantage in cancer beyond improvements in screening participation.<sup>6</sup> This is often because our health systems are designed and funded as a one-size-fits-all approach rather than being designed to ensure that those with greater needs receive more of the resources. Promising strategies, reported by Bygrave and colleagues, that improve screening uptake, and reduce inequalities in outcomes between low and high socioeconomic groups, include enhanced reminder letters, screening invitations that are endorsed by the person's general practitioner, text message reminders, organized implementation screening programs, and preformulated implementation intentions specifying the when, where, and how a behavior can be modified.<sup>6</sup>

Perhaps, it is time for us to design health services and programs using an equity lens, with all services evaluated to determine whether they close or widen the equity gap. We can hold each other to account by assessing who uses the services we develop using simple area-level disadvantage derived from address of residence available to us all. As

we engage patients in helping us design services, we must ensure that those we engage are representative of the communities we aim to reach.

### Declaration of competing interest

None declared.

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