



The Social

Determinants of

Health and Cancer



A MEMBERSHIP ORGANISATION
FIGHTING CANCER TOGETHER

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What are the Social Determinants of Health?

Over the past decades, the world has seen drastic improvements in health with life expectancy rising in most countries. However, the differences in health outcomes between the most privileged and most disadvantaged populations persist and are growing. These inequities exist in all countries and regions and are influenced by the social determinants of health, i.e. the circumstances in which people are born, grow up, live, work and age. Social, environmental and economic circumstances negatively affect people's risk of developing poor health and their ability to access health services, thereby resulting in health inequities- avoidable and unfair differences in health status between groups of people or communities.

The inequitable distribution of health and illness follows what is known as the 'social gradient' - the relationship between an individual's socio-economic status and their health status (the lower a person's socio-economic status is, the worse is their health status). The social gradient steepens depending on the extent of differences in health among different groups in society – the steeper the social gradient, the greater the inequity. Health outcomes are influenced by factors such as income, employment and education as well as social norms and attitudes related to gender, sexual orientation, ethnicity, disability and old age. The social gradient applies equally to all countries, both rich and poor.



Addressing the factors that cause ill health and result in health inequities is crucial in order for everyone to attain the highest standard of health, regardless of race, religion, political beliefs, social or economic situation, a right that is enshrined in both the WHO Constitution and the UN Declaration of Human Rights.¹

INEQUITY VS INEQUALITY IN HEALTH

Quick definitions

INEQUALITY refers to the uneven distribution of health or health resources.

INEQUITY refers to unfair, avoidable differences in health care or health outcomes.

The Social Determinants of Health and Cancer

There is a growing body of research on cancer and equity.^{2,3,4} These studies show how the social determinants of health impact the cancer continuum through differential exposure to cancer risk factors, including tobacco; chronic infections; reproductive, occupational and environmental factors; limited knowledge and awareness of cancer; and limited access to and use of cancer services, where these risk factors often lead to poorer outcomes.^{5,6,7,8} In addition, there are huge disparities around the world in the ability of people to access cancer information and prevention services, early detection and screening programmes, cancer medicines and therapy, pain medicines and palliative care.^{9,10,11} For many people, appropriate diagnosis and treatment for cancer occurs too late and frequently not at all.^{12,13,14,15} Poverty, lack of access to information and

services, misinformation and misconceptions, stigma and discrimination are deeply intertwined with the social determinants of health and exert important influences on the way cancer is understood and lived.

It is becoming increasingly clear that understanding and addressing the social determinants of health and their impact on cancer can improve outcomes for at-risk populations particularly for cancers that can be more easily detected and treated such as cervical, breast, colorectal and childhood cancers. The design and implementation of laws and policies that can support access to quality cancer treatment and care can also create an enabling environment for change.¹⁶

¹ Constitution of the WHO (1946) & The Universal Declaration of Human Rights (1948)

² Vaccarella, et al, eds. Reducing social inequalities in cancer: evidence and priorities for research. (IARC Scientific Publications; 168) April 2019.

³ Alcaraz KI, Wiedt TL, Daniels EC, Yabroff KR, Guerra CE, Wender RC. Understanding and addressing social determinants to advance cancer health equity in the United States: A blueprint for practice, research, and policy. *CA Cancer J Clin.* 2019 Oct 29; 2016;34(1):6–13.

⁴ de Souza JA, Hunt B, Asirwa FC, Adebamowo C, Lopes G. Global Health Equity: Cancer Care Outcome Disparities in High-, Middle-, and Low-Income Countries. *J Clin Oncol.* 2016;38(3):474–482.

⁵ McDaniel, J. T., Nuhu, K., Ruiz, J., & Alorbi, G. Social determinants of cancer incidence and mortality around the world: an ecological study. *Global Health Promotion.* 2019; 26(1), 41–49.

⁶ Al-Kaabri R, Gamboa AB, Williams D, Marcesen W. Social inequalities in oral cancer literacy in an adult population in a multicultural deprived area of the UK. *J Public Health (Oxf).* 2016 Sep;38(3):474–482.

⁷ Mitra D, Shaw A, Tjepkema M, Peters P. Social determinants of lung cancer incidence in Canada: A 13-year prospective study. *Health Rep.* 2015 Jun;26(6):12–20.

⁸ Tsu, V. Carot. L. Making the Case for Cervical Cancer Prevention: What About Equity? (November 2008) *Reproductive Health Matters*, Vol. 16, No. 32, pp. 104–112, November 2008.

⁹ WHO, 2020. WHO report on cancer: setting priorities, investing wisely and providing care for all. Geneva: World Health Organization;

¹⁰ Vaccarella, J. Lortet-Tieulent, R. Saracchi, D.I. Conway, K. Straif, C.P. Wild, eds. Reducing social inequalities in cancer: evidence and priorities for research. (IARC Scientific Publications; 168) April 2019

¹¹ Gelband, H, Sankaranarayanan, R, Gauvreau, C, et al. Costs, affordability, and feasibility of an essential package of cancer control interventions in low-income and middle-income countries: key messages from Disease Control Priorities, 3rd edition. *Lancet.* 2016; 387: 2133–44

¹² Erdmann F, Psychtong M, Mogensen H, Schmiegelow K, Zeeb H. Social Inequalities Along the Childhood Cancer Continuum: An Overview of Evidence and a Conceptual Framework to Identify Underlying Mechanisms and Pathways. *Front Public Health.* 2019 Apr 18;7:84.

¹³ Brown, C., Hambleton, I., Hercules, S, et al. Social determinants of breast cancer in the Caribbean: a systematic review. *International Journal for Equity in Health.* 2017 16:60.

¹⁴ Davoudi Monfared E, Mohseny M, Amanpour F, Mosavi J, et al., Relationship of Social Determinants of Health with the Three-year Survival Rate of Breast Cancer. *Asian Pac J Cancer Prev.* 2017;18(4):1121–1126.

¹⁵ Williams-Brennan L, Gastaldo D, Cole DC, Paszat L. Social determinants of health associated with cervical cancer screening among women living in developing countries: a scoping review. *Arch Gynecol Obstet.* 2012 Dec;286(6):1487–505.

¹⁶ Alcaraz KI, Wiedt TL, Daniels EC, Yabroff KR, Guerra CE, Wender RC. Understanding and addressing social determinants to advance cancer health equity in the United States: A blueprint for practice, research, and policy. *CA Cancer J Clin.* 2019 Oct 29; 2016;34(1):6–13.

¹⁷ Guillaume E, Dejardin O, Bouvier V, De Mil R, Berchi C, Porret C, Christophe V, Notari A, Delattre Massy H, De Seze C, Peng J, Guittet L, Launoy G. Patient navigation to reduce social inequalities in colorectal cancer screening participation: A cluster randomized controlled trial. *Prev Med.* 2017. Oct;103:76–83.

¹⁸ Wagner, C., Antillon, F., Unwinkindi, F., Van Thuan, T., et al. Establishing Cancer Treatment Programs in Resource-Limited Settings: Lessons Learned from Guatemala, Rwanda, and Vietnam. *Journal of Global Oncology.* June 2018.



COVID-19 has exacerbated inequities

Underlying and systemic causes of inequity have left people around the world especially vulnerable to the impact of the COVID-19 pandemic. People in precarious working situations, with low wages and limited access to health facilities, have been disproportionately exposed to coronavirus infection with frequently worse outcomes for COVID-19 and for other health conditions. The COVID-19 pandemic and its repercussions in deepening health inequities has created an even greater need for action.

Inequitable vaccine production and distribution compounds the challenges that low and middle-income countries face in accessing and delivering COVID-19 vaccines and requires a concerted global response to support the COVAX facility to ensure people worldwide have equitable access to COVID-19 vaccines. Within countries, even where a national roll-out is being undertaken, attention must be paid to reaching individuals and communities that are particularly at risk of severe COVID-19 illness and death, and who may have greater barriers to health care and vaccine access.





Addressing inequity: an advocacy imperative for UICC

For World Cancer Day 2020, UICC commissioned a global survey across 20 countries to better understand the public's experiences, views, and behaviours around cancer. Conducted by Ipsos, the survey revealed that that irrespective of where people live in the world, those surveyed with a lower education and those on lower incomes appear less aware of the main risk factors associated with cancer and appear less likely to proactively take the steps needed to reduce their cancer risk than those from a high-income household or with a university education.¹⁹

The UICC has also conducted a desk review and stakeholder interviews to map out research studies and initiatives that address the social determinants of health (SDOH) and cancer, in order to identify gaps in the current knowledge base and to understand the key social determinants that impact cancer treatment and care. Key informant interviews were conducted with more than

30 individuals representing academia, civil society, global health policy, national cancer control institutes and local programme implementers, to elicit their views and perspectives on the key social determinants of health that affect access to cancer services in their settings.

The review found that, despite increased attention on the impact of social determinants on health outcomes and health equity in the last decade, studies have overwhelmingly been focused on Europe and North America, with far less research on the impact of social inequalities on cancer outcomes in other regions. In terms of topics addressed, studies tend to focus on differential outcomes in breast cancer predominantly, followed by paediatric and cervical cancers.



The literature review and key informant interviews identified several cross cutting social determinants that need to be addressed in national cancer control planning efforts. These include the following:

Gender norms and discrimination

Around the world, women and girls are impacted by gender norms and economic and cultural factors that hinder their access to prevention, early detection and timely treatment – all of which are critical to surviving cancer and leading healthy, productive lives. Women may have to seek permission to access health facilities and frequently experience stigma and social isolation related to cancer. For breast and cervical cancers, misconceptions may lead to women being blamed for their cancer diagnosis. Fear of stigma and discrimination following a potential cancer diagnosis has also been found to be a barrier to accessing cancer screening.²⁰ Gender norms can also affect men's health-seeking behaviour. Men may underutilise health services, including for cancer screening, and social norms surrounding masculinity may make them less willing to discuss health concerns.²¹

Low socio-economic status

Low socio-economic status can impact access to cancer services (including prevention and screening), timely diagnosis and receiving quality care, both for individuals and populations between countries and within countries. Low socio-economic status has been found to affect treatment adherence for several cancers including ovarian, breast and childhood cancers.^{22 23} ²⁴ Factors that put low-income individuals particularly at risk of underutilising cancer services include the costs of cancer care, not having health insurance, employment conditions that make it difficult for patients or their caregivers to take time off work, limited or no public transportation and a lack of accommodation facilities in or near treatment centres. A multi-country study in Asia found that participants in the low-income category within each country were more than 5 times more likely to experience financial catastrophe than participants from high-income backgrounds. Across the countries, patients diagnosed with advanced stages of cancer and socioeconomically disadvantaged cancer patients were more likely to experience financial catastrophe or die within 12 months of their cancer diagnosis.²⁵ This includes low-income patients, those with primary education only, and those with no health insurance. Due to the often very high costs of cancer treatment, when cancer care is predominantly financed from out-of-pocket payments, this can push households below the poverty line.

²⁰ Nyblade, L., Stockton, M., Travasso, S. et al. A qualitative exploration of cervical and breast cancer stigma in Karnataka, India. *BMC Women's Health* 17, 58 (2017). <https://doi.org/10.1186/s12905-017-0407-x>

²¹ Davis JL, Buchanan KL, Katz RV, Green BL. Gender differences in cancer screening beliefs, behaviors, and willingness to participate: implications for health promotion. *Am J Mens Health*. 2012;6(3):211-217. doi:10.1177/1557988311425853

²² Hodeib M, Chang J, Liu F, Ziogas A, Dilley S, Randall LM, Anton-Culver H, Bristow RE. Socioeconomic status as a predictor of adherence to treatment guidelines for early-stage ovarian cancer. *Gynecol Oncol*. 2015 Jul;138(1):121-7. doi: 10.1016/j.ygyno.2015.04.011. Epub 2015 Apr 22. PMID: 25913132; PMCID: PMC5145799.

²³ Roberts, Megan & Wheeler, Stephanie & Reeder-Hayes, Katherine. (2015). Racial/Ethnic and Socioeconomic Disparities in Endocrine Therapy Adherence in Breast Cancer: A Systematic Review. *American journal of public health*. 105. e1-e12. 10.2105/AJPH.2014.302490.

²⁴ Gupta S, Wilejto M, Pole JD, Guttman A, Sung L. Low socioeconomic status is associated with worse survival in children with cancer: a systematic review. *PLoS One*. 2014;9(2):e89482. Published 2014 Feb 26. doi:10.1371/journal.pone.0089482

²⁵ The ACTION Study Group. Catastrophic health expenditure and 12-month mortality associated with cancer in Southeast Asia: results from a longitudinal study in eight countries. *BMC Med* 13, 190 (2015). <https://doi.org/10.1186/s12916-015-0433-1>

Structural and societal barriers for indigenous and minority populations

The majority of research on indigenous and minority populations has been undertaken in high-income countries (HICS), particularly Canada, USA and Australia, given concerns over the higher cancer mortality in these groups.²⁶ Indigenous populations are historically underserved by health and other services, and there are several interconnecting factors that have made cancer a leading cause of illness and death among indigenous people. These include significant disparities in relation to risk factor prevalence (particularly tobacco and alcohol use), cancer incidence, stage at diagnosis, quality of care received and disease outcomes.²⁷ Limited research has been published about the factors affecting cancer outcomes among indigenous people in low-and-middle-income countries (LMICs). However, most national NGOs interviewed noted how disparities in cancer outcomes are even more stark for indigenous and minority communities in their countries than the non-indigenous population, and that there is a lack of funding to be able to access these communities in order to provide adequate outreach, education and service provision.

Limited access to health promotion, early diagnosis, treatment and care among rural populations

Key informants from both HICs and LMICs across sectors noted that rural populations (those residing outside metropolitan areas) face several barriers that have an impact on health outcomes. These include the long distances often required to travel to primary care facilities and specialised clinics, a lack of screening and prevention programmes available in these areas, the impact of distance on chronic patients who need multiple treatments or have co-morbidities, and the financial impact of additional time away from jobs to access treatment in urban areas. Studies have found that patients living in rural areas are often diagnosed at later stages; are less likely to receive standard-of-care treatment, follow-up or supportive services; and have worse health outcomes during survivorship than nonrural patients. They are also less likely to be recruited into clinical trials.²⁸ Indigenous populations, older populations and populations with greater levels of social disadvantage also more frequently live in rural areas, thereby interacting with other key social determinants of health.

²⁶ Institute of Medicine (US) Committee on Cancer Research Among Minorities and the Medically Underserved; Haynes MA, Smedley BD, editors. *The Unequal Burden of Cancer: An Assessment of NIH Research and Programs for Ethnic Minorities and the Medically Underserved*. Washington (DC): National Academies Press (US); 1999. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK1796/> doi: 10.17226/6377

²⁷ Garvey G, Cunningham J. Social inequalities and cancer in Indigenous populations. In: Vaccarella S, Lortet-Tieulent J, Saracci R, et al., editors. *Reducing social inequalities in cancer: evidence and priorities for research*. Lyon (FR): International Agency for Research on Cancer; 2019. (IARC Scientific Publications, No. 168.) Focus 5.

²⁸ Laura A. Levit, Leslie Byatt, Alan P. Lyss, Electra D. Paskett, Kathryn Levit, Kelsey Kirkwood, Caroline Schenkel, and Richard L. Schilsky. Closing the Rural Cancer Care Gap: Three Institutional Approaches. *JCO Oncology Practice* 2020 16:7, 422-430





Lack of attention to older adults

Cancer is more prevalent in older adults, with cases amongst the over-65s accounting for over 50% of the global cancer burden.²⁹ Many cancers in older people are diagnosed at a later stage, as early cancer symptoms can be mistaken for everyday pain or minor illnesses associated with old age. As a result, cancer treatment often starts late, which increases the likelihood of side effects and reduces the chances of a successful treatment outcome. When combined with the unique challenges of managing cancer in older people, such as the management of co-morbidities and attention to overall levels of social support, health and wellbeing, the topic of ageing and cancer requires far greater attention within cancer control policy and planning. However, current evidence suggests there are limited programmes and services in place to respond to the needs of older adults.³⁰ Also, while more older people are diagnosed with cancer than younger people, older patients are vastly underrepresented in the research that sets the standards for cancer treatments. Cancer therapeutics are based on clinical trials conducted in younger, healthier patients and effective strategies to improve clinical trial participation of older adults with cancer remain sparse.³¹

Structural and societal barriers among refugees and internally displaced populations

Cancer patients in conflict and post-conflict settings experience a particular set of barriers that influence cancer outcomes, including a collapsed or fragile health system, psychosocial and emotional distress, limited financial resources, language and cultural barriers in the host country, among others. Refugees and internally displaced populations in LMICs face additional barriers, given the limited availability of outreach and treatment services and lack of funding to provide additional specialised staff to serve these at-risk populations. Cancer is frequently neglected in the policy response to humanitarian crises and research on access to cancer treatment and care for these populations is limited. Weak health surveillance systems in conflict-affected countries mean that the true burden of cancer in refugees and displaced populations is not captured. However, several studies have shown that the majority of patients in war-affected settings present with advanced stage cancer and, for many of them, appropriate care is not available, particularly as affected regions become inaccessible, hospitals and health centres are damaged or destroyed, and health workers are killed, injured or displaced.³²

²⁹ International Agency for Research on Cancer (2018) GLOBOCAN 2018, Estimated number of new cancer cases 2018, all cancers, both sexes, ages 65+ http://gco.iarc.fr/today/online-analysis-pie?v=2018&mode=cancer&mode_

³⁰ E. Soto-Perez-de-Celis, et al. (2017) Global geriatric oncology: Achievements and challenges. *Journal of Geriatric Oncology*, 8: 374-386

³¹ Sedrak, MS, Freedman, RA, Cohen, HJ, Muss, HB, Jatoi, A, Klepin, HD, Wildes, TM, Le-Rademacher, JG, Kimmick, GG, Tew, WP, George, K, Padam, S, Liu, J, Wong, AR, Lynch, A, Djulbegovic, B, Mohile, SG, Dale, W; the Cancer and Aging Research Group (CARG). Older adult participation in cancer clinical trials: A systematic review of barriers and interventions. *CA Cancer J Clin*. 2021; 71: 78-92. <https://doi.org/10.3322/caac.21638>

³² Mired, D., Johnson, S. & Tamamyan, G. Cancer disparities in war-torn and post-war regions. *Nat Rev Cancer* 20, 359–360 (2020). <https://doi.org/10.1038/s41568-020-0274-x>

Responding to the Social Determinants of Health

Understanding the ways in which the social determinants of health influence cancer risk factors, the reach and effectiveness of health promotion (including cancer prevention programmes), the provision of quality and timely early detection, treatment and supportive care, is essential to reducing the huge disparities in cancer that can be observed around the world today. A fundamental step in addressing the social determinants is through cancer surveillance. The collection and use of data by population-based cancer registries is important to inform policymaking and track the national cancer burden over time, understanding where there are disparities in the cancer burden among populations and monitoring these, including the success or failure of programmes to reduce incidence, decrease mortality and improve survival.

In addition, a key strategic tool for countries in their national cancer response is the development and implementation of a national cancer control plan (NCCP). This sets out the cancer burden in a country, the priority actions and interventions that will reduce the burden and the resources required for the plan's implementation. Attention to equity must be included in NCCPs through an analysis of underserved and vulnerable populations and strategies to address the needs of these populations comprehensively through cancer control programmes and services must be identified. A starting point for this is by adopting a community-based, participatory approach that seeks to understand and address the barriers facing different populations and engaging community representatives to ensure feasibility, acceptance and uptake of key interventions.

As discussed in this brief, the social determinants of health cut across population groups and there are common themes and opportunities that can be addressed within the global push to achieve Universal Health Coverage (UHC). Central to UHC is the recognition that “the enjoyment of the highest attainable standard of [physical and mental] health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition”³³. The focus on the right to health is driving calls for governments and other stakeholders to ensure that UHC planning and implementation prioritise the needs of the poor, underserved and most vulnerable first, in order to address longstanding barriers to accessing essential health services.

Recognising this, the objectives of UHC are to ensure:

- 1. Equitable access** – access to a service should be determined by need, regardless of a person's ability to pay.
- 2. Quality care** – services available should promote or improve the health of those using them.
- 3. Financial risk protection** – providing mechanisms to protect against financial risks so that people using health services are not pushed into poverty.

These objectives are key to promoting more equitable cancer outcomes and UICC will continue to work with and support its members around the world to address the social determinants of health, to reduce disparities in cancer care and achieve the vision of 'Health for All'.



FURTHER READING:

Addressing cancer within Universal Health Coverage: UICC and Cancer Council Australia.

³³ World Health Organization. Constitution of the World Health Organization. Geneva, 2006 https://www.who.int/governance/eb/who_constitution_en.pdf [Accessed 10.03.2021]
population=income&population=900&populations=900&key=total&sex=0&cancer=39&type=0&statistic=5&prevalence=0&population_group=0&ages_group%5B%5D=13&ages_group%5B%5D=17&nb_items=7&group_cancer=1&include_nmsc=1&include_nmsc_other=1&half_pie=0&donut=0&population_group_globocan_id=(accessed 15 March 2021)



Actions taking place around the world to improve equity and close the gap in cancer care

Distance, lack of transportation and accommodation

Distance from health facilities, lack of affordable transportation and accommodation in many regions of the world are important barriers to timely cancer diagnosis and treatment. Lack of or high cost of transportation and accommodation disproportionately affect the most vulnerable groups of society, including cancer patients, living in remote areas who need to travel long distances to receive treatment and need to stay close to the hospital during their ambulatory treatments sometimes for a prolonged period of time.

To address the issue of travel that can negatively influence the stage at which a cancer is diagnosed as well as treatment, outcomes and quality of life for people living with cancer in Morocco, the **Lalla Salma Foundation** created a network of temporary shelter spaces across the

country. These are called 'Houses of Life' and provide accommodation for patients and their families traveling long distances for their cancer treatment and to decrease the treatment abandonment rate among patients.

Each shelter space offers annually between 6,000 and 12,000 overnight stays for patients and their families which allows them to continue treatment without having to travel back and forth between the hospital and their homes. **The Houses of Life** offer catering and entertainment services as well as support from a multidisciplinary team of health professionals, psychologists, social workers and volunteers. A separate house was created for children undergoing paediatric cancer treatment.

Self-sampling as a tool to improve early diagnosis by increasing access to screening services, using examples for cervical and colorectal cancers

Screening for the early detection of cancer is defined as the testing of a target population to identify individuals who have cancer or pre-cancer, but who have not yet started to show symptoms. Given that screening measures aim to identify cancers early, thereby reducing the costs of treatment and care as compared to late-stage diagnosis as well as improving survival rates, it is considered cost-effective in reducing cancer mortality in a country. A single cervical cancer screening between the ages of 30 and 40 can reduce a woman's lifetime risk of cervical cancer by 25% to 36%³⁴. However, access to screening services in resources limited settings is not always a given and there are multiple barriers to accessing them. These include fear and embarrassment in relation to visiting screening services, lack of awareness and geographical isolation.

One tool which could be used to address these issues, as well as facilitate logistics for cancer screening is the use of self-sampling. Program ROSE in Malaysia is an initiative to improve uptake of screening for cervical cancer that utilises self-sampling to avoid the need for a pelvic examination by a healthcare professional. A woman receives a kit to take her own swab and the sample is then tested for HPV in a laboratory. Prompt and secure delivery of results is then sent to the patient's mobile phone (all within 3 weeks). Upon a positive test result, the patient is requested to contact

the Program ROSE team for follow-up care. The program has already received excellent feedback from participants, demonstrating the feasibility of this approach. Out of the women who screened positive, 89% engaged in follow-up care and 97% would recommend the process to their friends.

Self-sampling may also increase the uptake of screening, as a recent meta-analysis found that mailing self-sampling kits was more effective in reaching women for screening, compared to sending screening invitations for facility-based sampling.³⁵

Furthermore, the percentage of native American/Alaskan native groups who are up to date with colorectal cancer (CRC) screening is much lower than non-native American/Alaskan native groups in the United States.³⁶ The current recommendations for CRC screening are to include stool-based tests and direct visualisation tests (colonoscopy, flexible sigmoidoscopy, or virtual colonoscopy).³⁷ However, in those health care settings where access to direct visualisation tests is scarce, a study showed that the direct mailing of faecal immunochemical test (FIT) kits could be a useful, population-based screening strategy to improve colorectal cancer screening among this population.³⁸ Implementing and scaling up innovations like this is a key step in bridging the cancer divide and ensuring equitable access to health services.

³⁴ Goldie SJ, Gaffkin L, Goldhaber-Fiebert JD, et al. (2005). Cost-effectiveness of cervical-cancer screening in five developing countries. *N Engl J Med* 353, 2158-68.

³⁵ Arbyn M, et al. Detecting cervical precancer and reaching underscreened women by using HPV testing on self samples: updated meta-analyses. *BMJ*. 2018 Dec; 363: k4823.

³⁶ https://www.cdc.gov/pcd/issues/2020/20_0049.htm

³⁷ <https://jamanetwork.com/journals/jama/fullarticle/2529486>

³⁸ Effectiveness of Interventions to Increase Colorectal Cancer Screening Among American Indians and Alaska Natives ([medscape.org](https://www.medscape.com))

Telemedicine to increase access to pathology services in resource limited settings

Cancers that are detected early are generally easier to treat, resulting in better outcomes for the person living with cancer as well as a reduction in the cost of treatment with substantial savings to the health system.

There is a critical shortage of pathology services in Africa, however, due to a lack of pathologists and inadequate infrastructure, which severely affects services available for early detection. In fact, it is estimated that there are more than 500,000 people per pathologist in much of the continent, with this ratio exceeding 5 million to 1 in some countries.³⁹

Telepathology can, in some cases, address this issue by enabling pathologists in resource-limited settings to receive training support, have a voice in the global medical community, to exchange ideas and share questions for patient care and receive answers in real-time. These gains translate to patients receiving timely, expert diagnostic care that can make a difference in their outcomes.⁴⁰

One such example is the deployment of telepathology services in the Butaro Cancer Center of Excellence (BCCOE), which was established at the Butaro District Hospital in rural Rwanda in partnership with the Rwanda Ministry of Health, Partners in Health (PIH) and the Dana-Farber Brigham and Women's Cancer Center. Pathology services for patients were developed and provided through training and support by clinicians and nursing staff from the Dana-Farber Cancer Institute along with digital telepathology services adapted to the setting i.e. taking into account low internet bandwidth and inconsistent connectivity. This is one solution to ensure access to services, while more long-term sustainable capacity building for the health workforce and infrastructure is planned/ put in place.⁴¹

³⁹ Frontiers | Telepathology in Low Resource African Settings | Public Health (frontiersin.org)

⁴⁰ Bringing Telepathology to Africa with the ASCP and Motic - Motic Digital Pathology

⁴¹ Implementation and Validation of Telepathology Triage at Cancer Referral Center in Rural Rwanda - PubMed (nih.gov)



Fever clinics to address rational use of antimicrobials and antimicrobial resistance

Antimicrobial resistance (AMR) or drug resistance, including antibiotic resistance, is a growing public health issue and needs urgent attention in countries around the world. An estimated 750,000 people die annually from drug-resistant infections and by 2050 this number could reach ten million and cost more than USD 100 trillion without collective action. AMR also causes a huge strain on health system.⁴²

One barrier to addressing AMR is the lack of access to rapid diagnostics tests. There is a need to expand access to rapid diagnostic tests (RDTs) like those already in place for malaria to address AMR in resource-limited settings. One such example are fever clinics to diagnose malaria in several countries including Malawi and India. Mobile fever clinics are able to reach remote areas and test for malaria. Furthermore, with RDT's for malaria readily available, the health providers are able to diagnose and treat fevers appropriately, thereby reducing unnecessary antibiotic prescribing, particularly in areas where access to laboratory diagnostics is limited.^{43 44}

Tobacco consumption and health inequity

Disparities in tobacco use remains an important issue that has led to increased inequity in different groups defined by ethnicity and/or socioeconomic status.

In the United States, the tobacco industry has targeted the African-American community with marketing campaign on menthol-flavoured cigarettes. The goal was to increase the sale of cigarettes to hook a specific community with a more addictive product. The consequence is that the quit rate of African Americans is lower than that of White or Hispanic smokers. In addition, low-income households have been shown to have a higher prevalence of tobacco consumption than those living in high-income housing. Work from multiple associations together with governmental agencies helped to ban menthol cigarettes in the US in 2021.

An additional example comes from the Aboriginal and Torres Strait Islander population in Australia where tobacco accounts for a 23% discrepancy in the health burden between aboriginal and non-aboriginal populations. The "Tackling Indigenous Smoking" programme was developed to decrease disparities and is ongoing. Intermediary results published in July 2018 have shown that community engagement has increased especially with young people, acceptance of non-smoking areas in public places has improved and appropriate quitting support groups have been developed with higher use of Quitline in both urban and rural areas.

⁴² Antimicrobial resistance (AMR) and its impact on cancer care (uicc.org)

⁴³ Not all fevers are malaria: a mixed methods study of non-malarial fever management in rural southern Malawi - PubMed (nih.gov)

⁴⁴ Malaria: Fever clinics in UP to check spread of diseases during monsoon, Health News, ET HealthWorld (indiatimes.com)



Cancer control planning for indigenous populations

There are **some half-billion Indigenous Peoples in over 90 countries**. While they do not form a homogenous group with shared values, traditions and worldview, they share a history of colonisation and oppression and continue to face discrimination and stigma. **While they represent 6% of the world population, indigenous peoples account for 15% of the extreme poor.**

In general, **indigenous peoples face worse health and poorer outcomes, including for cancer**. For example, cancer death rates are 30% higher for Aboriginal people than other Australians, and in some remote parts of Australia, up to 65 % higher.

In order to close this gap and address the disparity in cancer outcomes seen between Aboriginal and non Aboriginal people in Australia, the **South Australian Aboriginal Cancer Control Plan 2016-2021** integrated evidence showing that cancer care delivery can be improved to meet the needs of Aboriginal people. The plan sets out nine priority areas to reduce mortality due to preventable cancers, enhance early diagnosis and improve access to culturally sensitive cancer care. The plan was developed by a multi-stakeholder partnership and with active participation and meaningful contributions of the Aboriginal community, including Aboriginal people living with cancer, their caregivers and family members.

Closing the gap in cervical cancer screening

COVID-19 has severely affected cancer screening programmes globally. Unfortunately, cervical cancer screening programmes have been severely interrupted, and many countries have not put in place effective surveillance programmes to track screening efforts. However, the health authorities in Bangladesh have customised the information system developed for pandemic surveillance to collect cancer screening data in the country. The electronic system put in place by the government of Bangladesh using freely available software was able to report on the impact of the COVID-19 pandemic on cancer screening on a monthly basis. The aggregate number of women screened in 2020 was 14.1% less than in 2019. During the peak of the outbreak, the monthly rate of screening was only 5.1% that of the previous year. The rate recovered rapidly as the programme intensified screening in the hard-to-reach regions less affected by the pandemic and expanded the outreach services. Having an information system to monitor cervical cancer screening is critical to ensuring high coverage of cervical cancer screening and making progress towards the WHO targets on the elimination of cervical cancer.

The paper is available [here](#).

Recognising and responding to the social determinants of health: planning care around the needs of older adults with cancer

Older adults, who represent the majority of cancer patients globally, are a very diverse group, in particular due to the fact that a person's chronological age can vary substantially from their biological age. This means that the diagnosis and treatment of cancer in older adults can vary substantially between individuals. Many of these differences can be linked to the impacts of social determinants of health over the course of a person's life, as these will shape to which risks individuals are exposed, as well as their ability to access treatment and care.

Responding to the needs of older adults can therefore be complex. One of the key tools oncologists have at their disposal are geriatric assessments. These assessments look at a person holistically to understand their physiological situation (such as frailty or whether they have any other conditions) and socially (such as what kind of support network they have) to help inform the most effective and appropriate course of care.

The Arturo Lopez Perez Foundation (**FALP**) in Chile responded in 2018 to the challenge of a high volume of older adults with cancer by creating the oncogeriatric unit to provide a comprehensive geriatric assessment of older adults with cancer. This allowed oncology teams to personalise a patient's treatment more effectively, taking into account factors such as comorbidity burden and prevalence of geriatric syndromes. Patients undergo an oncogeriatric assessment that includes: the patient's history, estimation of functionality, nutritional evaluation, cognitive evaluation, sarcopenia⁴⁵ evaluation, investigation of main geriatric syndromes, chemotherapy toxicity estimates and mortality estimates. From this assessment,

recommendations are made which consider the health condition of each patient and which help to shape conversations with patients around their treatment goals and plans.

Since the implementation of geriatric assessments, the quality of information that multidisciplinary teams have to develop and refine treatment plans has improved significantly. Recognising the opportunity for substantially improving care, FALP is developing evaluation and management protocols with other national health centres in order to support the standardisation of patient care and address some of the inequities in geriatric cancer care currently. As FALP is the largest oncogeriatric centre in Chile to date, the team is working with other geriatricians nationwide to replicate the care model and build capacities in all cancer centres. This in turn will create a greater need for geriatric specialists, but in the long run aims to decrease in the adverse effects associated with treatment toxicities and untreated geriatric syndromes and will reduce costs and demands on the health system associated with the side-effects of cancer treatment in older adults. Recognising this challenge, oncology teams are working with the Chilean Geriatric Society to develop oncogeriatric training programmes in the country and share expertise and lessons learned in service development at national meetings.

⁴⁵ Sarcopenia is the progressive and generalised loss of skeletal muscle mass and strength and is closely correlated with physical disability and poor quality of life.



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