https://doi.org/10.1038/s41571-022-00700-7

Barriers in access to oncology drugs — a global crisis

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In the past decade, oncologists worldwide have seen unprecedented advances in drug development and approvals but have also become increasingly cognizant of the rising costs of and increasing inequities in access to these therapies. These trends have resulted in the current problematic situation in which dramatic disparities in outcomes exist among patients with cancer worldwide owing, in part, to the lack of access to drugs that provide clinically meaningful benefits. In this Viewpoint, we have asked six oncologists working in different countries to describe how they perceive this issue in their region and propose potential solutions.

What are the main barriers to drug access for patients with cancer in the region where you work?

Manju Sengar: In India, the major impediments to access to anticancer medicines include the lack of universal health-care (UHC) coverage, inconsistent drug pricing, variations in cost between private and public health-care systems owing to limited regulatory oversight, limited quality monitoring of generic medicines after regulatory approval, frequent drug shortages, and delays in approval of novel drugs with proven efficacy. In contrast with countries with UHC models, which spend on average 10% of their GDP on health care, India spends only 2.1% of its GDP for this purpose, which translates into a health-care system that requires substantial out-of-pocket (OOP) expenditure for the management of patients with cancer[1]. In India, a large number of individuals currently live below the poverty line, a majority of the population seeks care in private health-care systems, and private health insurance coverage is limited. This socioeconomic structure further compromises the affordability of treatment, leading to delays in seeking care and to frequent treatment abandonment[1]. The challenges have become even more relevant owing to the financial impact of the coronavirus disease 2019 (COVID-19) pandemic. In 2018, the Indian government rolled out one of the largest public health insurance systems, Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY), intending to cover 40% of the population and with a family-coverage cost of ₹ 500,000 (US$ 6,300) per year[2]; however, limited buy-in from private health-care systems restricts its reach mainly to patients treated in public hospitals.

Notably, the way drug prices are negotiated is one of the major factors contributing to inequitable access. Pricing remains a concern even after the National Pharmaceutical Pricing Authority set a ceiling price for medicines listed in the National List of Essential Medicines of India[3,4]. Owing to their high cost, novel drugs for which generic versions are not yet available remain out of reach for a majority of the eligible population. A few years ago, the WHO Essential Medicines Cancer Working Group conducted a survey of oncologists worldwide to assess which medicines are considered a high priority and the extent of their availability[5]. A secondary analysis of the responses from those based in India highlighted issues associated with access to essential medicines[6]. Only a minority of Indian oncologists (3%) reported universal access to essential medicines, and the risk of substantial OOP expenditure for each medicine listed ranged between 19% and 58%. This risk and that of catastrophic expenditure (defined as ≥40% of total post-subsistence income) were higher in private health-care systems than in public hospitals[5,6]. The downside of price control is that frequent drug shortages occur because, in many instances, manufacturers are unable to sustain production owing to the rising costs of raw materials and product distribution. This issue largely affects public health-care systems as suggested by the findings of a study evaluating access in New Delhi to medicines commonly used to treat paediatric cancers and considered essential; in this study, 43% and 70% of these medicines were available in pharmacies from public and private hospitals, respectively[7]. In addition, price control leads to several novel drugs 'exiting' the country owing to limited financial gains for the manufacturer. Finally, owing to price control orders, investment in drug development focused on locally prevalent cancers is low because of a perception of poor financial returns. The time taken to bring a novel and effective therapeutic agent to market in India is remarkably long owing to its perception as a poor business market and low affordability coupled with a challenging regulatory situation[8].

Quality is another aspect that needs attention in an assessment of access to drugs. The regulatory approval of generic drugs is based on bioavailability data, without a requirement for clinical efficacy data. Indeed, generics do not undergo stringent, regularly scheduled quality-control monitoring. The risk of procuring low-quality drugs is greater in public health-care systems, in which the procurement process mandates the selection of generic drugs with the lowest price.

Mastura Md Yusof: In Malaysia, despite progressing towards achieving UHC coverage through a mixed public–private health-care delivery system, cancer survival rates remain below the average rate for middle-income countries[9]. Earlier cancer diagnosis to enable more efficient treatment, improved patient outcomes and reduced health-care costs are not yet fully achieved.

Taking breast cancer as an example, approximately 63.7% of Malaysian women with breast cancer present with stage III–IV breast disease[9], which contributes in part to poor overall survival outcomes[10]. The ASEAN Costs in Oncology (ACTION) study, conducted in 2015 to assess the economic burden of cancer in Southeast Asia, found that cancer stage accounted for 80–98% of the risk of catastrophic expenditure (defined as

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an OOP medical expenditure exceeding 30% of annual household income) across six East Asian countries with comparable data available. Late-stage presentation was found to be one of three factors that increases the risk of adverse economic outcomes and death in Malaysia[11].

Without good UHC coverage, the provision of high-quality and affordable cancer care for the whole population remains challenging. In addition to the number of oncology specialists being low, the distribution of oncology facilities and specialists within the country is also imbalanced. Nevertheless, the fact that a centre delivers a high volume of care does not necessarily equate to provision of high-quality care. A modelling study revealed that 50% of breast cancer-related deaths would be avoidable if all Malaysian patients with this cancer type had access to care in leading national cancer centres. Moreover, 50% of this mortality excess was attributed to a lack of access to optimum treatment and the other 50% to late presentation at first diagnosis[12].

Malaysia spent only 4.3% of its GDP on health care in 2019 (ref.[13]) and the allocation for cancer care will change after the COVID-19 pandemic. The impact of this pandemic on the country's health-care system has resulted in increased costs and disrupted or delayed cancer screening as well as an urgent need to clear a huge backlog of surgical and medical procedures.

Undoubtedly, disparities in cancer outcomes exist between affluent individuals and those of a lower socioeconomic status or without health insurance. This gap will widen as cancer care becomes more challenging and expensive. Malaysia's Ministry of Health provides subsidized treatment to approximately 65% of the population, which includes civil servants and individuals without health insurance, while private health care is delivered via for-profit medical facilities and is funded by a combination of OOP payments, private health insurance and employer-sponsored health insurance[14].

The National Health and Morbidity Survey (NHMS) of Malaysian adults in 2019 reported that only 22% of Malaysians have personal health insurance and 45.5% (including about 71% of the poorest 20%) do not have any means of supplementary financial coverage for medical treatment other than the existing tax-funded health-care coverage provided by the government[15].

The use of novel drugs is severely limited in public hospitals and the waiting times to receive treatments, if approved, can be months. Although more affluent or health-insured patients are able to access innovative therapies at private centres, chaos and the threat of unaffordability still loom ahead for them if the prices of anticancer medicines keep rising. Furthermore, some archaic health insurance policies provide low payouts or coverage and might entirely refuse to reimburse outpatient oral formulations.

Many patients experience hardships in life and/or have poor health literacy that make it difficult for them to obtain and understand information on available care and to navigate health-care services in a way that enables sound decision-making and access to care. The NHMS from 2019 identified 35.1% of Malaysian adults as having a low level of health literacy, 28% in terms of managing medical issues and 32.3% in terms of disease prevention[15]. The increasing number of cancer diagnoses and the effect of the COVID-19 pandemic in exacerbating delayed presentation, detection and diagnosis further exert tremendous physical, emotional and financial strain on individuals, communities and the national health-care system. Late presentation necessitates more complex care by a multidisciplinary team, yet coordination of care can be non-existent or fractured owing to a lack of speciality services, human resources and/or an efficient patient navigation system.

Fidel Rubagumya: In Rwanda, as well as in East Africa and globally, the main barrier to drug access for patients with cancer is the high cost of these drugs[16]. However, the key difference between low-income and middle-income countries (LMICs) and high-income countries (HICs) is affordability[17]. Patients in LMICs struggle to afford well-established cytotoxic drugs, some of which have a substantial magnitude of clinical benefit (for example, cisplatin). By contrast, financial difficulties for those in HICs tend to be restricted to the newest targeted therapies or immunotherapies. Therefore, the high level of poverty in Rwanda — and other LMICs — exacerbates the lack of access to these drugs and leads to economic catastrophe.

As of 2018–2019, 41% of the population of countries in sub-Saharan Africa lived below the national poverty line[18]. This percentage translates into more than 500 million people who cannot afford cancer care, including anticancer drugs. Therefore, a large proportion of individuals who develop cancer will either rely on support from their government, sell their possessions to afford cancer treatment or, in most cases, die without treatment.

The unaffordability of cancer drugs cannot be considered in isolation; the complexity of cancer care compounds it. Let us consider

stage III breast cancer as an example: after the cost of diagnostics, treatment will consist of surgery, radiotherapy and chemotherapy, with the latter two taking up to 12 weeks in total. The direct cost of the whole treatment package and other supportive care is unattainable for many Rwandans and Africans. Additionally, given the scarcity of cancer centres in Rwanda and many African countries, patients often have to travel long distances for treatment, thus also incurring transport and accommodation expenses.

Owing to the increasing cancer burden in Rwanda and Africa and the high cost of care, government agencies are reluctant to cover cancer treatment through national health insurance schemes. The lack of UHC coverage for cancer care in most African countries exacerbates the situation as patients usually incur OOP expenses and eventually have to sell possessions to afford care, including anticancer drugs. In Rwanda, the community-based health insurance scheme is a form of UHC that covers >90% of the population and involves patient co-payments of ~10% of the medical bill[19]. This scheme enables access to some oncology treatments, including surgery and radiotherapy but not chemotherapy.

Piotr Rutkowski: In Poland, expenditure on health care is among the lowest in the EU (<6% of the GDP), and expenditure on cancer care accounts for <7% of the overall health-care budget (versus an average of 8% in the other EU countries). About 1 million individuals in the current population of Poland have been diagnosed with and/or cured of cancer. Around 100,000 Polish citizens die from cancer every year, and this number has been predicted to increase by 28% in the next 10 years[20]. Most patients with cancer in Poland are treated at large regional comprehensive cancer centres. In Poland, health insurance is obligatory and public only, and therefore a drug reimbursement system is legitimated constitutionally to provide equitable access to health-care services for all citizens. Anticancer medicines are reimbursed after formal procedures, including mandatory assessment by a health technology agency[21]. All well-established systemic therapies are fully available and reimbursed in Poland for the whole range of registered cancer indications.

In Poland, novel anticancer drugs are covered within a specific framework referred to as drug programmes, which are initiated by pharmaceutical companies. This legal framework regulates the delivery of treatment according to specific rules and in designated centres, according to a mandate from the National Health Fund. Drug programmes have a key role in patient access to free-of-charge contemporary expensive systemic therapies for cancer. A downside of drug programmes is that not all such drugs are reimbursed and patients must meet strict criteria included in the programme description to be eligible for treatment[22].

This framework is unique because it enables reimbursement of expensive novel therapies for cancer treatment under programmes that are time-limited (they are reassessed every 2 years) and involve lengthy bureaucratic procedures[21]. The final decision to reimburse a drug within the programme is based on the recommendation of the Polish Agency for Health Technology Assessment (HTA) and Tariff System, price negotiations between the drug manufacturer and the Economic Commission of the Ministry of Health, and the Ministry of Health. As a result, the average time between market authorization and patient access was one of the longest across the EU[23], although it has decreased substantially in the past 2 years. The final financial decision is usually based on confidential discounts, which serve a double purpose: they diminish cost to the payer and are a countermeasure against external reference pricing (ERP). Moreover, the only requirement for patients is complete adherence to a drug programme, which tend to have strict inclusion and exclusion criteria[24], including timely participation in follow-up examinations.

Other limitations include organizational issues related to poor coordination of the diagnostic–therapeutic process for individual patients with cancer and insufficient deployment of molecularly based diagnostic procedures, which can limit access to novel targeted therapies. Finally, an additional situation worth mentioning is the unexpected increase in the number of new patients with cancer in Poland owing to the arrival of war refugees from Ukraine. These individuals are currently authorized to receive the same health care as the citizens of Poland, but their presence might increase the waiting lists for starting therapies owing to the limited availability of medical staff and health expenditure on cancer medicines.

Carlos Barrios: In Brazil and across all of Latin America, a number of different barriers have been identified that hamper access to optimal care; other LMICs have reported similar obstacles[25,26]. Most countries in the region spend a very small proportion of their GDP on health care. Brazil reports a global health expenditure of 9% of its GDP, although, of note, only 4% is strictly provided by government expenditure (to cover 75% of the population under the public health-care system) and the other 5% represents investments from the 25% of Brazilians with private health insurance[25]. Unequitable or non-existent access to new medicines is one of the main reasons underlying the profound and increasing worldwide discrepancies that currently compromise the outcomes of patients with cancer. Optimal cancer care is also seriously affected by disparities in access to new technologies and in the quality of delivered services. Patients living in LMICs do not have access to more than half of the drugs listed on the WHO Essential Medicines List (EML)[5].

The high cost of new medications is certainly the major feature limiting access to optimal care, which in turn contributes to the considerable discrepancies observed in the outcomes of patients with cancer worldwide. In many countries, and more frequently in LMICs, access to some drugs in the EML is associated with catastrophic expenditure[5]. Although we should acknowledge that drug development is a risky pursuit with increasing multifactorial associated costs, the current non-transparent drug-pricing practices need a global and more detailed institutional discussion[27].

In Latin America, access to optimal cancer care is a multidimensional and complex situation. The existence of fragmented health-care systems with incomplete coverage of the population and deficient health-care infrastructures is probably a good starting point to explain care disparities. Unequal geographical distribution of health-care units and workforce are major contributors to the problem, leading to delays in diagnosis, late-stage presentations and poor outcomes.

In many countries, the lack of specific National Cancer Control Programmes results in a reactive and unplanned approach to health-care provision, ultimately leading to suboptimal resource utilization and higher expenditure[25]. Importantly, the lack of epidemiological data, such as information on the number of cancer diagnoses and stage at presentation, resource utilization data and economic evaluations of resource allocation hinder a more rational approach to financial planning.

Advances in the development of targeted therapies imply the delivery of treatment to appropriately identified populations. Therefore, this evolving personalized approach to optimal cancer care requires the development of particular and challenging diagnostic

capabilities. The lack of molecular pathology laboratories with well-established quality assurance programmes is an unmet need that compromises access to new therapies in LMICs.

Non-transparent, complex and slow regulatory processes are another major hurdle compromising access to new drugs. In addition, incomprehensibly long approval times for clinical trials add to a bureaucratic burden that should be addressed with a well-intentioned reform of the regulatory infrastructure[28].

The COVID-19 pandemic is an important added challenge. Although the pandemic is placing substantial strain on all health-care systems globally, it has deeply affected the most fragile infrastructures in LMICs. Long-lasting consequences should be expected as the resources drained to manage the pandemic will certainly compromise the much-needed investment in cancer care. Furthermore, we should expect an increase in the proportion of cancers diagnosed at more advanced stages in the next few years owing to a decrease in screening procedures during the pandemic. This shift will increase expenses and add further pressure on already strained health-care systems.

In summary, when discussing access to optimal cancer care in Latin America, we must be cognizant of the many different stakeholders with vested interests in the problem. In my view, the most important barrier is that most players are either comfortable with the current situation or have not been competent enough to take real action. Lack of effective leadership is probably a major need and the main barrier to overcome[29].

Gilberto de Lima Lopes: In the USA and other HICs, access to cancer medicines seems easier than in LMICs but is not without barriers and challenges. Although the lack of health insurance coverage has decreased since the enactment of the Affordable Care Act (colloquially known as Obama Care) in 2010, 31.6 million people (9.7% of the population) were uninsured in 2020 — a number roughly equivalent to the population of Peru or Malaysia[30]. Cancer care is expensive, however, and even patients who have insurance coverage often suffer from financial toxicity, which is defined as the harmful effects of these high costs (especially OOP payments, in the form of co-payments, deductibles and co-insurance) on an individual's quality of life (QOL). Given that nearly 40% of the population receives health insurance as part of their employment benefits, medical issues are responsible for two-thirds of personal bankruptcies in the USA[31].

The economic consequences of cancer treatment on patients and their caregivers substantially influence access to care in the USA. Patients without insurance coverage are less likely to seek care at early stages of their disease and, when they are able to do so, might not be able to afford certain treatments that are too expensive. Even for insured patients, plans that require substantial co-payments decrease access to timely and comprehensive cancer care and provide inadequate financial protection from medical expenditures. When an individual with cancer undergoes treatment, they face an increasing burden of direct medical and surgical costs concurrent with income constraints as well as indirect costs to them and their caregivers. Patients usually cope by borrowing money, using their savings or selling assets, resulting in increased stress and reduced QOL[32].

The cost of new oncology medications is higher in the USA than in other HICs. A study with results published in 2021 (ref.[33]) revealed that, for a panel of 65 anticancer drugs, the median monthly costs per patient were US$ 14,580 in the USA, US$ 5,888 in Germany, US$ 6,593 in Switzerland and US$ 6,867 in England. This imbalance reflects the inability of the biggest payer in the USA, the Center for Medicare and Medicaid Services, to negotiate prices, in sharp contrast with several different schemes active in European countries and other HICs.

The example of osimertinib, a drug with proven activity approved for the treatment of *EGFR*-mutated non-small-cell lung cancer, is illustrative. Osimertinib provides meaningful improvements in progression-free survival and overall survival with fewer adverse events than earlier-generation EGFR tyrosine kinase inhibitors and cytotoxic agents. However, with an average wholesale price of US$ 18,000 for a month of treatment, osimertinib is not cost effective, and co-payments are prohibitive for many patients who do not have adequate insurance coverage[34]. Finally, non-cost barriers, such as the need for prior authorization, are worth mentioning. Through this process, health insurance companies review which proposed medical treatments are deemed necessary and standard, often resulting in substantial delays in the delivery of appropriate treatment.

What solutions would you prioritize to help your patients and colleagues to overcome these barriers, and why?

MMY: This is a watershed moment for the oncology community, health-care policy-makers, government administrators, pharmaceutical industry and patients to collaborate and align towards some measures to overcome the primary issues related to cancer care in Malaysia: late presentation, poor health literacy, variable quality of care and barriers to access, including affordability. To increase access, reduce costs and improve health-care quality, transparent health-care policies to reimburse only medicines that fulfil criteria for proven high cost-effectiveness and QOL improvement should be implemented.

We can achieve enhanced health literacy and subsequently decrease the burden of late presentations by improving cancer awareness, promoting avoidance of cancer-risk behaviours, and facilitating screening and early detection in the population within the reach of primary-care clinicians. When cancers are detected early, the ready availability and cost-effectiveness of treatments are directly correlated with favourable survival outcomes. In anticipation of the disruption in cancer care delivery after the COVID-19 pandemic, multidisciplinary oncology teams, public-health physicians, patient advocacy groups and policy-makers could initiate collaborative efforts to develop a contingency plan for maintaining access to cancer care in the long term.

We must establish an efficient referral process, and regular multidisciplinary team clinics or remote discussions between primary-care teams and oncologists must be developed to improve communication, coordination and provision of a value-based plan that adheres to evidence-based guidelines. Frameworks such as the ESMO Magnitude of Clinical Benefit Scale, US National Comprehensive Cancer Network (NCCN) Guidelines and ASCO Value Framework can be used as guidance to evaluate the benefit of anticancer therapies and inform resource allocation.

We must promote an intelligent dialogue and consideration of costs in care decisions for individual patients, and also when setting priorities and triaging cancer needs at the population level. As responsible clinicians, we should allocate time and be empathetic but realistic when conveying prognoses, treatment options and their potential benefits and toxicities, and palliative care considerations to patients and their caregivers. When appraising clinical trial results, we must have a sound comprehension of the limitations of research data or evidentiary support for the described benefits to reduce the use of treatments with little or no value.

Initiatives to strengthen research capacity and infrastructure with trained and experienced researchers should be expanded, and

global scientific collaboration should be pursued. These efforts will improve access to novel treatments for patients in Malaysia. Increased clinical trial participation in both public and private health-care centres could reduce cancer-specific mortality in addition to improving the quality of clinical care and drug access. Negotiations and dialogue between health-care providers and the pharmaceutical industry must be maintained to increase access to drugs at an affordable price. Support from health insurance providers is also needed to ensure a financial benefit margin while incentivizing the substitution of some anticancer drugs for cheaper generic versions. We must lobby the government through a joint effort between the oncology community and cancer advocacy groups to ensure that more Malaysians have sufficient protection for health expenditure on cancer care and that adequate financing is available and durable. The initiation and optimization of financing schemes via public–private partnership would provide further support for efficient care. We must show the enormous influence of access and affordability on the outcomes of patients with cancer in Malaysia and the urgency of having a system that delivers equitable care and is thoroughly sustainable.

FR: Access to quality cancer medicines should be a global priority for all stakeholders, including governments. Given that many countries, including Rwanda, face challenges in ensuring equitable access to essential medicines[35], my first suggestion would be to include anticancer drugs on national EMLs (NEMLs). NEMLs comprise priority medicines for which access should be guaranteed[35] and are modelled from the WHO EML[36]. A study found that most LMICs with NEMLs listed <50% of WHO-recommended anticancer medicines[37]. Other studies have demonstrated that 32% of drugs on NEMLs are not fully covered and 5% are not available, hence questioning the role of the WHO EML[35]. A regularly updated cancer EML would be a starting point to advocate for their availability. Ministries of health of LMICs should generate and update their NEMLs, and ensure that drugs on the lists are available, affordable and accessible to their citizens, and ultimately covered by national public health-care insurance schemes.

The second solution that I propose is transparency in oncology drug-pricing processes. Wide variation exists in the costs of cancer drugs across different countries and regions[38]; for example, one drug can cost 700 times more in one country than in another[39]. Generic drugs are cheaper than proprietary drugs. Prices are also lower for drugs obtained from public hospitals and pharmacies compared with private ones. Strategies are therefore needed to address price variations of anticancer drugs in the African market. Regulations applied in some HICs to achieve this purpose include ERP, internal reference pricing and managed-entry agreements[38]. However, these models are not perfect as they are prone to manipulation and a further lack of transparency. For example, on the basis of ERP regulations, the price of a hypothetical drug X in country A is based on the price of the same drug in a HIC, country B, and thus, drug X will not be affordable in country A if it is an LMIC. The major limitation of ERP is that marketing authorization holders launch their products first in countries that can bear high pricing levels and, thus, are not necessarily conducive to reducing the benchmark price[38]. The lack of price transparency is not only a problem at the manufacturers' level. Indeed, the flow and distribution of money across drug supply chains are typically confidential, making it difficult to determine how payments are decided, and thus, the final burden tends to be on the paying patient. Several efforts to promote price transparency could be replicated in Africa if income levels are considered; having an online database of official prices of publicly reimbursed drugs is one such initiative[40].

The third solution I propose is a pooled drug-procurement system to increase fairness and transparency[40]. Rwanda could initiate such a system in collaboration with other East African countries.

The final solution that I propose is to address the indirect cost of cancer care, which can lead to further financial burden for patients. For example, authorities in Rwanda and sub-Saharan Africa must promote access to dedicated cancer centres by building and equipping new hospitals, especially in secondary and tertiary cities. This measure will curb transportation and accommodation expenses for patients with cancer during treatment.

GdLL: Potential solutions require the collaboration of all stakeholders involved in access to oncology treatments and come with caveats and tradeoffs. The availability of new cancer medications is usually not an issue in the USA but is starting to be so for 'fast follower' drugs. These are new, patent-protected medications targeting validated cancer vulnerabilities, with shorter development times and clinically tested in less costly trials usually performed in China and other countries, generally LMICs. Although these new agents have clinical outcomes deemed very similar to those of more expensive approved options, which might increase market competition and decrease prices, to date the US FDA has not approved any of them; doing so might help to reduce cost pressures on cancer medicines in the near future.

Another solution would involve allowing the Center for Medicare and Medicaid Services to negotiate prices, which might also decrease the monopsony power that pharmaceutical companies have in specific indications. Such a plan has been included in the provisions of the Inflation Reduction Act in the USA[41]. However, experts with industry and academic affiliations have argued that this measure might limit innovation. The nonpartisan Congressional Budget Office estimated that this law would result in the approval of 15 fewer drugs over a three-decade period. Although this figure might seem substantial, >1,000 drugs will probably be marketed during this time[42].

PR: Polish drug reimbursement lists from 2018 are being amended to increase the availability of contemporary drug therapies or new indications. Drugs on these reimbursement lists bring the anticancer therapies available in Poland to the European level of available therapies, in particular for breast, kidney, lung, colorectal, prostate, and head and neck cancers, melanoma and other skin cancers, and haematological malignancies. The National Oncological Strategy mandates that, by the end of 2030, 90% of all anticancer therapies registered in the EU should become fully available in Poland[20]. According to an estimation from 2021, the level of all fully reimbursed novel oncology therapies in Poland has increased from ~40% to >60%. The National Health Fund currently finances >100 authorized new agents under drug programmes. Therefore, the percentage of expenditure on cancer care in Poland needs to be aligned at least with the average for the EU.

Moreover, the process for submitting and implementing drug programmes should be simplified and become more flexible for patients and treating physicians. The negotiation processes between drug manufacturers and the payer and/or Ministry of Health should be reduced in duration and include a new expanding range of available mechanisms to reduce public health-care costs (including but not restricted to risk-sharing or payback)[43,44].

Glossary

Community-based health insurance
Voluntary pooling of funds to offset the cost of health care.

External reference pricing
(ERP). Practice of informing price negotiations in a given country by calculating a benchmark or reference price based on publicly available pricing data from one or more other countries.

Internal reference pricing
Consumers' price expectation developed from past purchases of the same product.

Managed-entry agreements
Arrangements between for-profit firms and health-care payers that enable coverage of new medicines while managing uncertainty around their financial performance.

National Cancer Control Programmes
Set of guidelines and policies stating the approach to cancer management in a specific country.

Out-of-pocket (OOP) expenditure
Medical care expenses that are not reimbursed by health insurance, which can include deductibles, co-insurance and co-payments for covered services, and all costs for services that are not covered.

Payback
Financing model that involves the payback of a reimbursed amount if the actual reimbursement expenses exceed a fixed annual budget.

Pooled drug-procurement system
Collective negotiation of drug prices as a unit, hence asserting collective bargaining power to buy drugs at the lowest prices.

Risk-sharing
Financing model in which payment is for health benefits, and thus the payer is reimbursed for new medical technologies when the expected effects are not sufficient.

WHO Essential Medicines
The WHO Essential Medicines List (EML) committee identifies drugs after a thorough review of their benefits, toxicities and affordability[47]. The WHO EML is intended as a guide for WHO member states to create their national EML (NEML), which is usually considered the first step towards making these drugs available, accessible and affordable[36]. A total of 137 countries have NEMLs; however, the factors that influence the creation of NEMLs remain poorly documented and evidence of their implementation is limited. Antiviral drugs against HIV and hepatitis viruses are examples supporting the belief that, once medicines are listed as essential, they become more accessible and affordable[48].

Additional approaches for drug financing in orphan indications include individual rescue access and the so-called Drug Fund, which are only available in Poland[42].

The implementation of a National Oncological Network in Poland would improve the selection of dedicated cancer centres for the delivery of innovative therapies and fast accurate molecular diagnosis of some cancer-related alterations. Finally, the next step to improve access to new therapies in Poland would be an increase in the number of clinical trials of new drugs, which is improving substantially with better legislation for sponsor-led trials and extra funding for academic trials.

Melanoma is a promising example of improved access to new drugs for patients in Poland, where a drug programme (with quite flexible eligibility criteria and follow-up examinations of the patients) has finally made all drugs associated with substantial clinical benefit (according to the criteria defined by the US NCCN Guidelines and ESMO, with one high score being sufficient) fully available (Supplementary Table 1). Among the countries in Central and Eastern Europe, Poland probably has the best access conditions for patients with melanoma[45], although the waiting time for the reimbursement of some of these drugs is one of the longest and the eligibility criteria in other indications lack flexibility.

MS: Several parallel initiatives involving various stakeholders, including policy-makers, regulators, administrators, pharmaceutical companies, health-care professionals and patients, are required to drive a multi-pronged approach to improve access to cancer medicines. Other than increasing the allocation of proportionate funds to achieve UHC, careful consideration is needed towards including oncology drugs associated with substantial clinical benefit in a NEML, given the competing needs that exist within the health-care system. This prioritization requires formal HTA of all the cancer medicines across different indications and disseminating this information to all the relevant partners, especially patients.

Drug pricing needs an urgent reform beyond price control. The pricing of a novel cancer medicine in India — and LMICs in general — should be based on the country-specific increments in the cost-effectiveness ratio and purchasing power parity relative to benchmark countries — typically HICs. Given market competition, increased availability of generic drugs would drive costs down; however, the processes and parameters for initial approval would need reforms to ensure the availability of high-quality generics at the best possible prices. Establishing robust mechanisms for continuous quality monitoring of generic drugs (in terms of manufacturing, storage and distribution systems) within the regulatory framework should be a priority. The drugs prioritized based on HTA and quality parameters should then be procured through a pooled procurement system to collectively negotiate and further drive down their costs, irrespective of the volume and location of cancer centres. The establishment of a central government department to pool the total requirement for a drug, negotiate its price on behalf of all public and private hospitals, fix a single price for the entire country, monitor the supply chain and prevent drug shortages would ensure a transparent and accountable procurement system. The National Cancer Grid of India, which comprises centres in which about two-thirds of patients with cancer in India are treated, has piloted an initiative of pooled drug procurement and the feasibility of HTA to guide oncology benefit packages[46]. For a total of 40 drugs, pooled procurement enabled savings of ~₹ 337 million. Such a programme could be further scaled up for the entire country. The expansion of AB-PMJAY to include all private and public health-care centres and the development of innovative ways to develop affordable health insurance packages to expand beyond the AP-PMJAY, both in terms of indications and population covered, would fulfil the dream of universal access to affordable quality cancer care in India.

CB: A clear diagnosis of the different barriers to drug access is essential but asking ourselves what we can do about them is much more important (Fig. 1). This question must be answered both from an individual and a collective perspective.

Clearly, context-dependent solutions are essential, as what is effective in one region does not, necessarily, apply to other settings[28, 29]. UHC programmes with specific and well-designed National Cancer Control Programmes are certainly a decisive starting point. To support rational strategies, the generation of pertinent information on cancer epidemiology and health-care system performance outcomes is crucial.

Discussion, reform and modernization of regulatory legislation are mandatory to accommodate the current needs for drug and clinical trial approvals. Implementation of well-defined, up-to-date and transparent HTA mechanisms with clear guidelines adjusted to particular national needs is required.

National quality assurance programmes, for both health-care performance and diagnostic processes, are needed. Regional high-volume molecular pathology laboratories to centralize assays and provide qualified diagnoses can provide an effective strategy to guarantee appropriate patient selection for targeted therapy with clear effects on outcomes. This approach would enable better use of limited staff and infrastructure resources.

Promoting participation in clinical trials is essential. The same discrepancies seen in global drug access are observed in access to clinical trials. Even though it is not a definitive solution to the problem, access to clinical trials presents an alternative to enable optimal care independent of health-care system restrictions. Therefore, optimizing regulatory processes, establishing dedicated cancer centres, training professionals and increasing the availability of clinical trials are vital. Pharmaceutical companies have substantially facilitated the globalization of qualified performance in clinical research but could achieve much more. Furthermore, with time and experience, the development of resultant academic research initiatives will bring secondary gains to resource-limited scenarios in LMICs[28].

Improved financing and resource allocation are certainly a priority to address access issues[25]. Indeed, when allocating limited resources, the main objective should be the reduction of inequities. Governments should expand the scope of their current interactions with industry stakeholders to generate new models for improving access. Commercial interests should be adapted to the needs of patients with cancer globally. At present, the commercial focus of pharmaceutical companies in terms of sales of new drugs is concentrated on the USA, Western Europe and a few other HICs, accounting for no more than 10% of the world population[28].

Ultimately, the many different stakeholders need to come together: national authorities, international agencies, oncology professionals, health-care institutions, the pharmaceutical industry, health insurance providers, civil society and patient organizations. Definitive solutions will only arise from a clear understanding of the different interests of each player and a rational negotiation that should contemplate the prioritization of objectives. In that sense, the outcomes of patients with cancer should be seen as the most important goal.

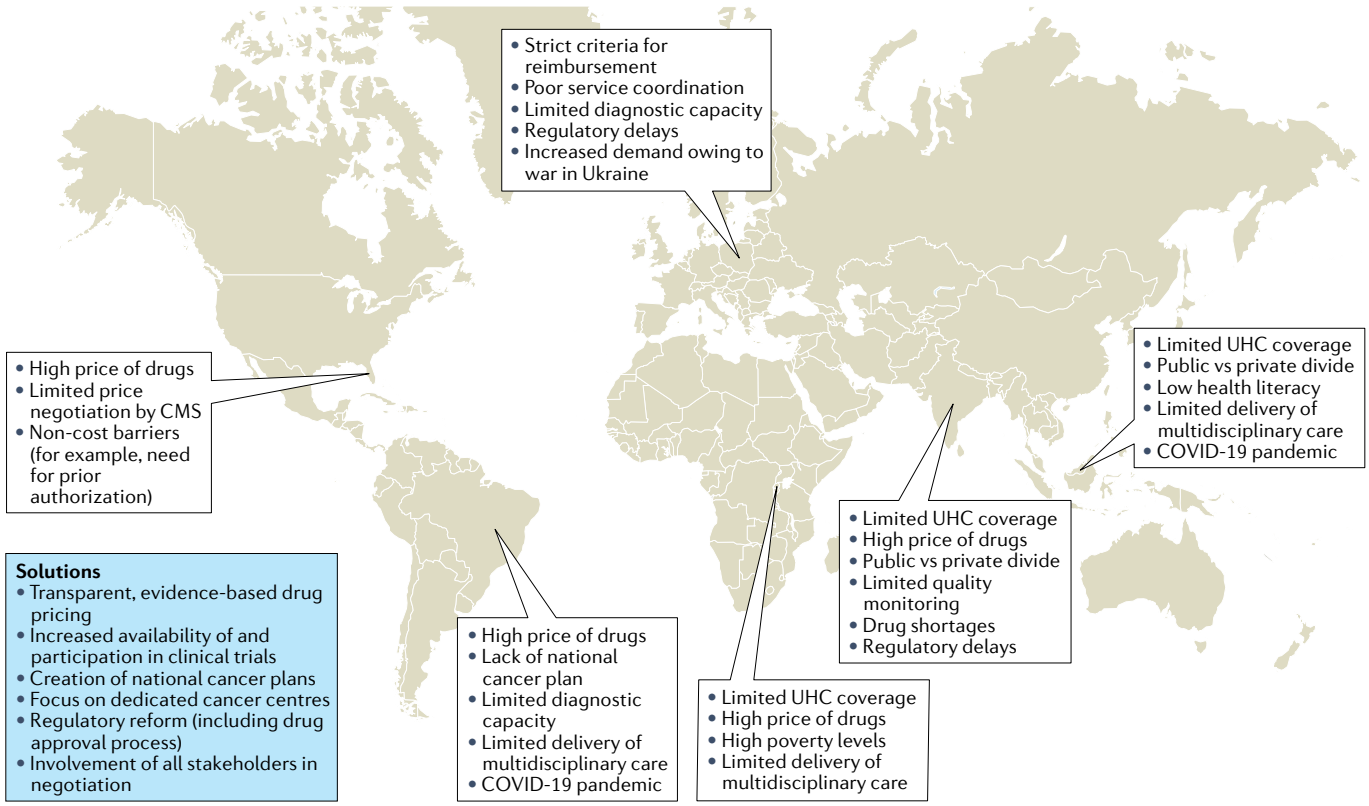

Fig. 1 | Local barriers and global solutions to access to cancer care. Six oncologists based in diverse geographical locations highlight the barriers that prevent access to appropriate cancer care in their region and propose solutions for this problem. Importantly, a high degree of concordance exists in the proposed solutions, although these will need to be adapted to each context and require a strong commitment from local stakeholders. CMS, Center for Medicare and Medicaid Services; COVID-19, coronavirus disease 2019; vs, versus; UHC, universal health care.

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Accepted: 5 October 2022

Published online: 15 November 2022

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Acknowledgements

P.R. thanks H. Kosela-Paterczyk (Maria Sklodowska-Curie National Research Institute of Oncology, Warsaw, Poland) for her critical review of his contribution to this manuscript.

Competing interests

C.B. works in an institution that receives financial support from Abbvie, Amgen, AstraZeneca, Aveo Oncology, Bristol Myers Squibb, Celgene, Checkpoint Therapeutics, Daiichi, Docs, Exelixis, GSK, Henlius, ICON, IQVIA, Janssen, Labcorp, Lilly, Medpace, Merck Serono, Merck Sharp & Dohme,

Myovant, Nektar, Novartis, Novocure, Nuvisan, OBI Pharma, Parexel, Pfizer, Pharmamar, Polyphor, Pharmaceutical Product Development, PSI, Regeneron, Roche, Sankyo, Sanofi, Seagen, Shanghai, Syneos Health, Takeda and TRIO; has received honoraria for advisory and/or consulting roles from AstraZeneca, Boehringer–Ingelheim, Bayer, Eisai, GSK, Lilly, Novartis, Pfizer, Roche–Genentech, Sanofi and Zodiac; and owns stock in MEDSir and Tummi. G.dL.L. works in an institution that receives or has received research funding from Abbvie, Adaptimmune, AstraZeneca, Bavarian Nordic, Blueprint Medicines, Bristol Myers Squibb, EMD Serono, G1 Therapeutics, GSK, Janssen, Lilly, Merck Sharp & Dohme, Novartis, Pfizer, Roche–Genentech and Tesaro; receives research funding from AstraZeneca, E.R. Squibb & Sons, Lucense and Xilis; has received honoraria for advisory and other roles from AstraZeneca, Blueprint Medicines, Boehringer–Ingelheim, Blueprint Medicines, Janssen, Merck and Pfizer; and owns stock in Lucence Diagnostics and Xilis. M.M.Y. has received honoraria for lectures, advisory roles and/or travel from Amgen, Astella, AstraZeneca, Bayer, Boehringer–Ingelheim, Celgene, DKSH, Eisai, Eli Lilly, Janssen, Merck Sharp & Dohme, Pfizer, Roche, Sanofi and Zuellig Pharma. P.R. has received honoraria for lectures and/or advisory roles from AstraZeneca, Blueprint Medicines, Bristol Myers Squibb, Merck, Merck Sharp & Dohme, Novartis, Philogen, Pierre Fabre and Sanofi, all outside the scope of this manuscript. F.R. and M.S. declare no competing interests.

Additional information

Supplementary information The online version contains supplementary material available at https://doi.org/10.1038/s41571-022-00700-7.

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ASCO Value Framework: https://www.asco.org/news-initiatives/current-initiatives/cancer-care-initiatives/value-cancer-care

ESMO Magnitude of Clinical Benefit Scale: https://www.esmo.org/guidelines/esmo-mcbs

National Cancer Grid of India: https://tmc.gov.in/ncg/

US National Comprehensive Cancer Network Guidelines: https://www.nccn.org/guidelines/category_1