

as using the combination of serum creatinine and cystatin C ( $eGFR_{Cr-cystatin\ C}$ ), which has a race coefficient (multiplication factor of 1.08). Omission of the race coefficient would have a smaller effect on  $eGFR_{Cr}$  than on  $eGFR_{Cr}$ . Emerging evidence shows acceptable accuracy of both  $eGFR_{cystatin\ C}$  and  $eGFR_{Cr-cystatin\ C}$  in patients with solid tumours.<sup>9</sup> If greater accuracy is required, measured creatinine clearance or mGFR using exogenous filtration markers, if available, is indicated. However, even mGFR is not without error. The consistency of estimated and measured values, limitations of each value, and patients' clinical characteristics, must be considered for clinical decision making.<sup>10</sup> More frequent use of confirmatory tests for GFR evaluation will increase effort and cost, but it will promote appropriate decisions and prevent disparities in cancer treatment.

ASL was the principal investigator for CKD-EPI, the group that developed the  $eGFR_{Cr}$ ,  $eGFR_{cystatin\ C}$  and  $eGFR_{Cr-cystatin\ C}$  equations, and also reports grants and contracts to his institution from the National Kidney Foundation and National Institutes of Health, and personal fees from AstraZeneca for data and safety monitoring board participation for dapagliflozin studies. NRP is a member of the National Kidney Foundation–American Society of Nephrology task force on reassessing the inclusion of race in diagnosing kidney diseases.

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## Global cancer control: choosing the road less travelled

As a practising clinician in Kenya, a lower-middle-income country, what does global cancer control mean to me and the patients whom I serve? What is the context for engagement with efforts that are led by high-income countries (HICs) to improve local care for patients? The two Series papers<sup>1,2</sup> on global cancer control networks in *The Lancet Oncology* provide a sense of how HICs could meaningfully engage in mitigating the global cancer burden. These Series papers acknowledge the need for bidirectional learning. True learning can occur only in a setting of humility and with a nuanced approach to knowledge sharing that appreciates that disparities are complex, intersectional, and frequently transcend geography.<sup>3,4</sup> The COVID-19 pandemic has exposed the fragilities in all countries' health systems and the underlying inequities, giving health-care workers opportunities to reflect on the shortcomings in their health-care systems and collectively regroup.

One of the benefits of the pandemic is that it has helped to enhance sharing and to democratise access to learning resources. Clinicians who might not be able to afford to attend conferences in distant countries can now share knowledge at a single click on the internet. There has also been an upsurge of virtual platforms and groups, such as Whatsapp; all of which help people to exchange knowledge and health-care strategies. These platforms have now been leveraged to include virtual tumour boards and knowledge sharing, such as the African Cancer Research and Control Extension for Community Healthcare Outcomes, bringing together regional and international faculty addressing cancer control, and several research and educational series that are coordinated by the African Organization for Research and Training in Cancer.

Regional engagements have also grown; for example, the weekly continuing medical education events by the Kenya Society of Hematology and



Theatre staff members/Aga Khan University

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Oncology now host over 400 oncology health workers from east Africa. These events create the opportunity for essential dialogues that should be maintained beyond the pandemic. Technological improvements, such as mobile phone services, have facilitated patient navigation and cancer screening and are used to enhance retention of patients with cancer in care. Excellent examples from low-income and middle-income countries (LMICs), such as Malaysia, have shown that they were able to use technology to maintain cancer screening services, even during the pandemic.

The pandemic has, however, had considerable negative effects on the provision of cancer care in LMICs. Due to lockdowns and travel restrictions, many patients in east Africa were not able to get essential medicines, such as tamoxifen for breast cancer. Because of the cost of imports and subsequent mark-ups on these essential medicines, patients who could afford it were sometimes paying up to ten times the price for their drugs. Additionally, in many parts of the world, the oncology workforce has been reassigned to other roles and responsibilities. Any future strategies around global oncology should consider these concerns and how best to mitigate them.

A few key steps are, however, needed to ensure that we are not simply trying to address concerns that might not exist. Translocating a strategy from HICs directly to LMICs without considering sociocultural contexts is frequently met with failure. This approach could, for example, explain the high rates of vaccine hesitancy for human papillomavirus vaccines in some countries.<sup>5</sup> The global oncology community does well when we develop a global appreciation and acknowledgment for local solutions to complex systemic problems. For example, Choosing Wisely Africa was a continental collaboration to define and prevent harmful practices in oncology that was sensitive to local contexts of oncology care delivery.<sup>6</sup>

System strengthening is also crucial. It is time to go beyond fragmented individual efforts by different in-country HIC groups and institutions and put real emphasis towards collaborative, robust efforts in this direction. Colleagues who are trained in HICs frequently return to their homes in Africa to find little infrastructural support for their skill sets. Excellent patient selection and perioperative management are

among the strongest determinants of clinical outcomes for cancer surgery; yet, LMICs often face a paucity of staff and centres that offer high-quality perioperative care. The African Surgical Outcomes Study, for example, showed that patients in sub-Saharan Africa are more likely than patients in other regions to die from elective surgery,<sup>7</sup> underscoring the need to develop perioperative and surgical nursing, monitoring devices, safe anaesthesia, and other support services. Similarly, in medical oncology, many primary health-care workers in LMICs might not recognise febrile neutropenia and other chemotherapy-related complications. These system weaknesses contribute to poor outcomes for patients.

Potential solutions to these deficits include models that strengthen and build the infrastructure and personnel capacity of multidisciplinary units. Yet, due to low numbers of health-care workers, strong efforts are required to engage, enrol, and retain health workers in LMICs. These efforts need to address developing resources and appropriate remuneration to mitigate migration to HICs. Models that can help to strengthen multidisciplinary units might also involve actively engaging health workers across the African diaspora to address some of the existing gaps. Virtual tumour boards, remote radiotherapy planning, and shared educational platforms for oncology faculty and trainees through the African Organization for Research and Training in Cancer and other pathways have the potential to directly improve care for patients in LMICs. Providing in-service training to LMIC health workers across all disciplines and building teams are other ways to bolster this care. Various colleges, such as the West African College of Surgeons and College of Surgeons of East, Central and Southern Africa, have increased in-country training and retention of their workforce. The number of oncology training programmes in sub-Saharan Africa has also increased. Going forwards, collaborators from HICs should consider how best to support these emerging models of learning and training, since they are not likely to succeed without genuine commitment and continued investment from local policy makers and international collaborators.

The Series papers suggest building allyships in academic research and collaboration, but how can research in LMICs and clinical trials run by practitioners

in LMICs be enhanced?<sup>8</sup> Oncology health workers in LMICs have high patients-to-clinician ratios. The high patient volumes and the focus on service provision, with performance evaluations and remuneration in many institutions frequently tied to patient numbers, mean that there is a scarcity of time to do research. With a scarcity of protected time, even the most enthusiastic of colleagues say that they are challenged to persevere with research. Moreover, academic institutions in many LMICs are underfunded: for example, institutions in sub-Saharan Africa, receive less than 1% of the gross domestic product of their countries to fund health research. Funders continue to strongly favour researchers from HICs and align the global research agenda accordingly. Although many funding models have a local capacity-building arm, in practice, this arm might confer one or two skills, but fail to build-in longevity or sustainability of these models beyond that grant cycle. The answers might perhaps be in disruptive models to traditional approaches of funding, academic progression and compensation, and research.<sup>9</sup> Funding mechanisms might need redefining to support investigators from LMICs.

Representation in the workforce also matters, whether it is at a policy, research, or systems level. The unique role that women have in global oncology and health systems should be acknowledged, where most of the work is delivered by women, but women are not adequately represented in health leadership.<sup>10</sup> In sub-Saharan Africa, female surgeons are less than 5% of the existing surgical workforce, and only one unit in South Africa has a female chair of surgery. Although this balance is slowly changing, increased efforts are needed to expand the workforce and increase diversity in global health leadership.

How would we define success in these global cancer control endeavours and collaborations? One of the key considerations would be to reflect on how these strategies directly affect care in specific regions, either at the individual or system level. Another consideration is to look beyond publication in a high-impact journal, which many people in both LMICs and HICs might not be able to access, to enhanced engagement of regional participants in the cancer control continuum (eg, policy makers, health-care workers, care providers, and patient advocates). More

cohesive, locally relevant guidelines and strategies for patient management might be more meaningful and effective than traditional journal papers. Our metrics for success should consider global, legal, and moral determinants of health that also factor in value-based outcomes, which reflect both the quality and cost-effectiveness of these interventions. As the oncology community moves towards increasing shared decision making and patient-reported outcomes, the community should ensure that patients from LMICs can also find a global voice.

Global oncology provides an opportunity to harness our collective knowledge and innovate for the collective good, and these two Series papers provide an initial plan for engagement, from the perspective of HICs. As this dialogue continues, it will be crucial for *The Lancet Oncology* and other journals to invite perspectives from LMICs and locally driven research initiatives in LMICs, so that providers of cancer care in these regions can reflect and report on how we are working to develop solutions for cancer care within LMICs. In summary, global oncology is an entity that is in evolution and needs to be iterated, tested, stretched, and developed together. I hope that through these efforts, patients in all regions (including LMICs) can begin to benefit from the ethos of global oncology.

I declare no competing interests.

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