



# Dispelling the myths of providing dialysis in low- and middle-income countries

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Public policy for kidney replacement therapy eludes most low- and middle-income countries owing to the seemingly low number of cases and high cost. Countries such as Thailand have shown that public health authorities can effectively provide treatment and elevate health care for populations by overcoming some common challenges.

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Kidney failure is a life-threatening condition and its treatment can be catastrophically expensive for affected households. Although effective kidney replacement therapy (KRT) in the form of kidney transplantation, peritoneal dialysis or haemodialysis is available, coverage remains inadequate, particularly in low- and middle-income countries (LMICs). The global agenda for universal health coverage (UHC) promises access to essential health-care services without financial hardship but the staggering costs of treating kidney failure have meant that public health insurers have often shied away from covering KRT despite the fact that affected households are driven into poverty because of the high out-of-pocket costs associated with KRT<sup>1</sup>. This Comment addresses the challenge above by dispelling five ‘myths’ related to treatment provision for patients with kidney failure and presenting the ‘realities’ observed in LMICs that have successfully implemented public policies for KRT.

The first myth — kidney failure is not a high health priority in LMICs given the relatively low number of affected patients. The reality — the number of cases does not reflect the need and demand for kidney failure care. Fewer patients receive dialysis in LMICs than in high-income countries (HICs) — 1,064 patients per million in HICs in contrast to 20–273 patients per million in LMICs<sup>2</sup>. However, these numbers do not capture all cases, given that the disease is often underdiagnosed and patient mortality is high in LMICs. In Thailand, after treatment for kidney failure was included in the Universal Coverage Scheme (UCS) in 2008, the incidence and prevalence of dialysis more than tripled by 2015 (REF.<sup>3</sup>). This marked increase suggests that the incidence and prevalence of the disease were previously underreported and highlights a substantial unmet need for kidney failure care. This increase in demand following inclusion of KRT in insurance packages was also observed in Rwanda, which is indicative of

an under-recognized need for dialysis in LMICs with constrained health systems.

The second myth — disease prevention is always better than treatment, and LMICs should focus on prevention. The reality — kidney failure prevention is not a substitute policy for KRT. The medical community generally accepts that prevention is better than cure. For example, investing in a measles vaccination programme is better than treating children infected with measles. However, although preventive measures are important and potentially life-saving for future cohorts of patients with kidney disease, they cannot mitigate mortality among patients already living with kidney failure and unable to access appropriate treatment. Indeed, there are millions of patients currently in need of treatment for kidney failure who are not receiving it<sup>2</sup>. Patient-centred access to care must also ensure that patients with kidney failure who do not wish to initiate or continue to receive KRT can exercise their choice<sup>4</sup>.

The third myth — given the high financial burden of dialysis, cost-sharing policies can be a viable solution in LMICs. The reality — co-payment requirements in dialysis can be counter-productive. When the cost of dialysis accounts for a considerable proportion of the health-care budget, governments might opt for cost-sharing options to scale up access to quality care for patients with kidney failure and to mobilize funds. Across the world, only 20–30% of LMICs offer dialysis services free at the point of delivery in the public sector compared with 60% of HICs<sup>5</sup>. Studies show that although cost-sharing options might increase the availability of services, health outcomes might worsen as patients drop out of treatment and/or receive suboptimal care, an effect that has been observed in the Philippines, where the government provides partial coverage for haemodialysis<sup>1,6</sup>.

The burden of co-payments will be felt more acutely by households during economic downturns, such as the one currently caused by the coronavirus disease 2019

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(COVID-19) pandemic. Many households with patients in need of KRT might not be able to afford dialysis, leading to premature patient death. At the same time, governments might find that dialysis costs constitute a higher proportion of the national income than before the pandemic, which might prompt them to carefully consider how to offer dialysis sustainably. One possible option is to adopt a peritoneal dialysis-first policy, a cheaper and more sustainable modality that was implemented in Thailand. Under this policy, Thailand offered free universal dialysis, which reduced household poverty while increasing quality of life and life expectancy for patients with kidney failure<sup>1</sup>.

The fourth myth — affordability is the main barrier to dialysis access. The reality — access to dialysis is constrained not only by financial resources but also by human resources and geographical factors. The affordability of dialysis for households and governments is only one of many barriers to increasing patient access to KRT. Factors such as the quality of care, information on KRT options and cultural barriers must also be overcome before individuals living in poverty can access health services equitably. In addition to securing adequate funds to support dialysis programmes, governments must prepare for the aforementioned increase in the use of KRT services. For example, human resources need to be well-developed to avoid heavy workloads and low morale amongst health-care workers caused by an increase in demand after free services are provided<sup>2</sup>. If not managed well, this surge in demand might create other barriers to accessing care, such as an increase in waiting times for patient access to care. Of note, careful monitoring of the process of change is also important and should ensure that official fees are not replaced by informal ones.

Furthermore, geographical factors impose major restrictions on access to treatment. In Indonesia, only 10 of its 6,000 inhabited islands have a haemodialysis centre<sup>3</sup>. Thailand overcame a similar treatment distribution challenge by leveraging its extensive postal service to deliver peritoneal dialysis solution to households located in remote areas throughout the country, and by training nurses to administer this treatment modality, which at the time was not widely used in the country<sup>1</sup>.

The fifth myth — effective treatment options for kidney failure exist and investment should be focused on making them accessible to all. The reality — the availability of effective KRT does not negate the need for innovation. Almost 75 years ago, a device was developed by Dutch physician Willem Kolff that gave patients with kidney failure a new lease of life. However, that technology has not changed much since, especially compared with other technologies that were developed at around the same time, such as cardiac defibrillators and intraocular lenses. Existing dialysis machines are not user friendly, remain costly and restrict patients to their homes or dialysis centres during treatment<sup>9</sup>.

The high-risk nature of investing in the innovation of these technologies calls for global donors and country

governments to take an active role in spearheading this process. Initiatives such as the Affordable Dialysis Project<sup>10</sup>, a global competition to develop an affordable dialysis machine, could be the way forward in encouraging researchers and private sector innovators to develop products for patients with kidney failure in the twenty-first century. Innovation can take other forms, such as revisiting key government policies and protocols on task shifting, medication and decentralization of services to improve access, affordability and multisectoral ownership by stakeholders such as providers, patients, caregivers and decision makers, thus contributing to improved accountability and outcomes of treatment for kidney failure.

We have highlighted the urgent need for government action in LMICs to ensure adequate provision of care for patients with kidney failure, a disease for which the full scope is not reported accurately. Introducing care for kidney failure as part of UHC policy is incredibly challenging in the current environment given the decline in economic activity caused by the COVID-19 pandemic. KRT policies must distribute financial resources effectively, ensure adequate system-level planning and address barriers related to geographical accessibility. Lastly, public, private and academic institutions need to work together to improve the technologies available for the treatment of kidney failure.

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