

# Kenya Rising: Advancements in Kidney Care

By Khalida B. Soki

The path to becoming a nephrologist in Kenya involves 3 years of internal medicine training, followed by a 2-year nephrology clinical fellowship. Prior to 2018, nephrology training was not available locally, which meant that trainees, like me, needed to seek fellowships elsewhere. So, in 2017, I went to England on a scholarship from the International Society of Nephrology (ISN).

When I left for my clinical fellowship, Kenya had only 30 nephrologists serving a population of 50 million. We lacked precise data on the prevalence of chronic kidney disease (CKD), and there were approximately 300 patients undergoing hemodialysis (HD) and an even smaller number of patients undergoing peritoneal dialysis.

During my time in England, the nephrology landscape in Kenya started changing. In 2016 to address the major increase in patients receiving HD, the president of Kenya decreed that each of the country's 47 counties would have a functioning dialysis unit. The National Health Insurance Fund (NHIF) began reimbursing hospitals for twice-weekly HD sessions, which had previously been an out-of-pocket expense for those with kidney failure. Although patients and physicians welcomed this change, the kidney community was ill-prepared for such an abrupt rise in patients receiving HD.

Since then, the Kenya Renal Association (KRA) registry has recorded an annual increase of approximately 1500 patients on HD, reaching a peak of over 5000 patients in 2022 (according to unpublished data from the KRA registry). When I returned to Kenya in 2019, I found an overwhelmed and struggling medical workforce and NHIF.

## Consequences of inadequate dialysis

The increase in patients undergoing HD plateaued in 2022, partially because NHIF tightened the criteria for dialysis eligibility but additionally because we started seeing that the long-term consequences of inadequate HD had started catching up with patients.

Without universal health care coverage or screening systems, patients with CKD in Kenya often “crash into” dialysis, presenting in crises with fluid overload or arrhythmias. If they do survive this critical state, they are maintained on twice-weekly HD.

Twice-weekly HD without residual renal reserve results in inadequate dialysis. Our patients with kidney failure experience acidosis, uremia, fluid overload, malnourishment, hypertension, and chronic hyperkalemia. Ultrafiltration rates are often >1 L/hour, and intradialytic hypertension or hypotension is the norm. The use of a 210H dialysis membrane is routine, and many patients will opt to have low-efficacy dialysis rather than experience the disequilibrium that inevitably follows. Due to the lack of trained doctors in creation of dialysis vascular accesses and the fact that NHIF does not pay for vascular access creation or intervention, many patients develop vascular access failure within a short time, with superior vena cava syndromes and nonfunctional arteriovenous fistula. Arteriovenous grafts are too expensive to create and present another out-of-pocket expense.

Our culture is not one of palliation. NHIF does not pay for medication or transplant. The patients are trapped on dialysis, and it is often a socially, financially, and emotionally exhausting experience for them. The incidence of depression among patients on HD in public hospitals in Kenya has been documented at 72.5% (1); fatigue was reported in 77.9% (2).

## Varied causes of kidney diseases

In one study (3), diabetic nephropathy was the leading cause of CKD (31.3%) in urban Kenya followed by glomerulonephritis (18.5%). In rural Kenya, however, more than two-thirds of those with CKD did not have HIV, diabetes, or hypertension (4). Hypertensive nephrosclerosis is often a default diagnosis for patients with a late presentation whose diagnosis is unknown.

The average age for CKD is relatively young in urban areas, averaging 42.5 years old (3). In the assessment of patients biopsied for CKD (5), the mean age was 27.3 years, and the most common cause of nephrotic syndrome was focal segmental glomerulosclerosis (30%). Idiopathic glomerulonephritis accounted for more than 20% of the cases.

## Small but growing workforce

The number of nephrologists serving sub-Saharan Africa is low compared with the population, with some countries recording no nephrology physician presence (Table). Feedback indicates that many nephrologists are leaving their home countries in search of better working conditions and higher standards of living.

With more patients on HD and more dialysis units, Kenya has required more trained nephrologists and care teams. While the workforce is still low, there has been a vast improvement driven by the East African Kidney Institute (EAKI), a project funded by the African Development Bank. EAKI set up a preceptorship program consisting of a 3-month training for the internists, medical officers, and nurses responsible for Kenya's dialysis units. As a result of EAKI's efforts and much goodwill from the international community and ISN, Kenya has seen a 50% increase in its workforce in the last 5 years, adding 15 nephrologists. All nephrologists in Kenya are also honorary lecturers at EAKI. We commit to teaching and training the EAKI fellows who have come from Kenya, Uganda, Somalia, Southern Sudan, Tanzania, and the Democratic Republic of Congo.

## KRA Conference (KRACon)

KRACon, Kenya's annual kidney conference, had always been a small meeting. However, in 2019, KRA hosted the African Association of Nephrology (AFRAN) conference and has since maintained strong ties with AFRAN.

KRACon has now transformed into a regional learning and networking hub for the multidisciplinary teams involved in nephrology care. Held every September, it attracts over 500 attendees from across Eastern Africa, consisting of doctors, nurses, dietitians, and physiotherapists. In 2023, the conference featured partnerships with AFRAN, ISN, the Declaration of Istanbul Custodian Group, and the American Society of Onconephrology.

## Making progress

The nephrology field in Kenya has matured since I began my clinical fellowship 7 years ago. Although progress can still be made, we have seen major improvements to better serve our community of patients on dialysis, including increased trained personnel, advanced technology, and enhanced systems. Additionally, Kenya is setting up the infrastructure and laws to initiate a deceased organ donation program and CKD registry, as well as establish mentorship programs for trainees.

There have been many challenges for nephrologists and patients with kidney diseases in Kenya, but our kidney community has been resilient. Courage is the little voice at the end of the day that tells us to keep making progress. ■

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**Table. Number of nephrologists per country per million population—Africa**

Country	2024 Number of nephrologists	2021 Population, million	2024 Number of nephrologists, per million population
Angola	0	34.50	0
Botswana	9	2.58	3.49
Burundi	4	12.50	0.32
Cameroon	35	27.19	1.28
Chad	4	17.17	0.23
Cote d'Ivoire	42	27.47	1.52
Democratic Republic of Congo	36	95.89	0.37
Djibouti	0	1.11	0
Ethiopia	35	120.30	0.29
Ghana	15	32.83	0.45
Kenya	45	53.00	0.84
Liberia	0	5.19	0
Mauritius	11	1.26	8.73
Mozambique	3	32.08	0.09
Namibia	3	2.53	1.18
Nigeria	200	213.40	0.93
Republic of the Congo	10	5.83	1.71
Rwanda	10	13.46	0.74
Senegal	53	16.88	3.13
Somalia	4	17.07	0.23
Tanzania	39	63.59	0.61
Uganda	14	45.85	0.30
Zambia	6	19.47	0.30
Zimbabwe	6	15.99	0.37

Based on unpublished data from the African Renal Registry.