

# Kidney disease: a global health priority



**The prevalence of kidney disease and its associated morbidity and mortality continue to rise. This crisis cannot be tackled unless kidney disease is made a global public health priority.**

**K**idney disease is a common non-communicable disease (NCD) with a global prevalence that surpasses that of any of the other NCDs currently prioritized by the World Health Organization (WHO): cardiovascular diseases, cancer, chronic respiratory diseases and diabetes<sup>1,2</sup>. Chronic kidney disease (CKD) is progressive and culminates in kidney failure, at which point kidney replacement therapy (KRT) – dialysis or transplantation – is necessary for survival. However, neither KRT modality is curative, and thus the mortality and morbidity burden associated with kidney failure remains high. In this issue of *Nature Reviews Nephrology*, a Consensus Statement led by the American Society of Nephrology, European Renal Association and International Society of Nephrology<sup>3</sup> calls for kidney disease to be prioritized by the WHO as a major NCD driver of premature mortality.

The proportion of deaths due to kidney disease has increased steadily over the past two decades<sup>3</sup>. Kidney dysfunction is now the seventh leading risk factor for death; however, further increases are anticipated in coming years, which necessitates a greater focus on this NCD as a driver of premature mortality. Indeed, the number of years of life lost (YLL) – a measure of premature mortality – attributed to CKD is predicted to rise by 100% between 2016 and 2040, a notably sharper growth than that estimated for any of the other major NCDs<sup>4</sup> (Fig. 1). The mortality associated with kidney failure is particularly high among patients receiving haemodialysis. In the USA, patients aged 40–45 years on haemodialysis have a life expectancy similar to that of individuals aged 75–79 years in the general population (~11 years)<sup>5</sup>. The 5-year relative survival of patients with kidney failure (36%)<sup>6</sup> is much lower than that reported for patients with prostate, skin, breast, cervical, colon or ovarian cancer (60–96%)<sup>7</sup>. This mortality burden is not equally distributed as members of minority groups and those living in poverty have the lowest access to KRT and the poorest outcomes. Moreover, patients with CKD are at high risk of developing other NCDs, including cardiovascular disease, and have a high risk of infection, which is aggravated by diminished responses to

vaccination<sup>3</sup>. This comorbidity burden not only translates to high mortality but also results in complex disease and a high symptom burden.

The financial burden of kidney disease, especially the cost of KRT, is vast. In many high-income countries, a disproportionate amount of the healthcare budget (2–4%) is spent on the 0.1–0.2% of the population with kidney failure<sup>3</sup>. In regions without universal health coverage, the out-of-pocket costs of KRT are prohibitive. For millions of people, treatment is unaffordable; many households experience catastrophic health expenditure, leading to treatment discontinuation. In low-resource settings, the proportion of patients who need KRT but cannot access it can be as high as 98% (ref. 8). This gap leads to millions of preventable deaths every year.

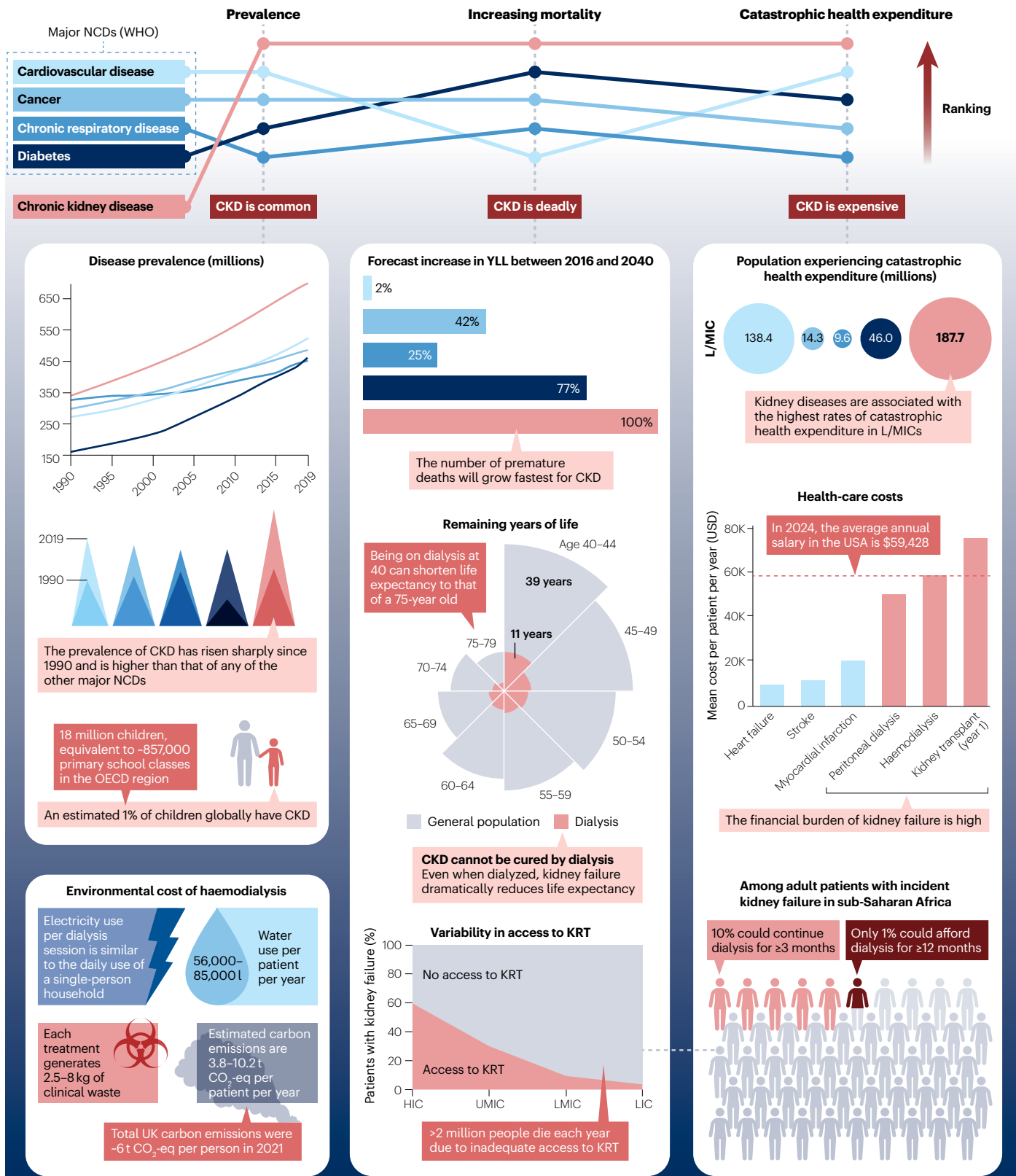
The inequitable burden of kidney disease is also evident in the prevalence and mortality of acute kidney injury (AKI), which not only increases the risk of developing CKD but can also cause kidney failure. Patients in low- and lower-middle-income countries typically present with more severe AKI and have higher mortality than those in high- and upper-middle-income countries<sup>9</sup>. These patients include children with potentially reversible kidney disease who die because they cannot access a short course of life-saving KRT<sup>10</sup>.

The high prevalence, morbidity, mortality and costs associated with kidney disease supports its prioritization on the public health stage. Yet despite kidney disease being common, deadly and costly, public awareness of it remains low. This lack of awareness reflects a failure of global public health agendas to adequately acknowledge the burden of kidney disease and undermines efforts to mitigate risk factors and improve early diagnosis. Several therapeutics that can delay CKD progression are now available; however, access to these interventions remains inequitable. Alternative approaches to costly and inadequate dialysis modalities are also needed to reduce morbidity and mortality on a global scale. Greater global recognition of kidney disease as a driver of premature mortality will encourage the widespread prioritization of strategies that aim to prevent the development and progression of kidney disease, and support the development of more affordable and effective treatments. Such strategies could improve and save millions of lives every year.

Published online: 03 April 2024

**“Despite kidney disease being common, deadly and costly, public awareness of it remains low”**

## Kidney disease: a global health priority



**Fig. 1 | The burden of kidney disease.** CKD, chronic kidney disease; eq, equivalents; HIC, high-income country; KRT, kidney replacement therapy; LIC, low-income country; L/MIC, low- and middle-income country; LMIC, lower-middle-income country; NCD, non-communicable disease; OECD,

Organisation for Economic Co-operation and Development; UMIC, upper-middle-income country; WHO, World Health Organization; YLL, years of life lost. Source data are listed in Supplementary Box 1.

## References

1. Institute for Health Metrics and Evaluation. GBD compare data visualization. <http://vizhub.healthdata.org/gbd-compare> (University of Washington, 2020).
2. World Health Organization. Noncommunicable diseases. <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases> (2023).
3. Francis, A. Chronic kidney disease and the global public health agenda: an international consensus. *Nat. Rev. Nephrol.* <https://doi.org/10.1038/s41581-024-00820-6> (2024).
4. Foreman, K. J. et al. Forecasting life expectancy, years of life lost, and all-cause and cause-specific mortality for 250 causes of death: reference and alternative scenarios for 2016–40 for 195 countries and territories. *Lancet* **392**, 2052–2090 (2018).
5. USRDS. 2023 annual data report. <https://usrdp-adr.niddk.nih.gov/2023/end-stage-renal-disease/6-mortality> (2023).
6. Stedman, M. R. et al. Using relative survival to estimate the burden of kidney failure. *Am. J. Kidney Dis.* **83**, 28–36.e1 (2024).
7. US Cancer Statistics. Survival. <https://gis.cdc.gov/Cancer/USCS/#/Survival/> (CDC, 2023).
8. Liyanage, T. et al. Worldwide access to treatment for end-stage kidney disease: a systematic review. *Lancet* **385**, 1975–1982 (2015).
9. Mehta, R. L. et al. Recognition and management of acute kidney injury in the International Society of Nephrology Oby25 Global Snapshot: a multinational cross-sectional study. *Lancet* **387**, 2017–2025 (2016).
10. McCulloch, M. Challenges of access to kidney care for children in low-resource settings. *Nat. Rev. Nephrol.* **17**, 33–35 (2020).

## Additional information

**Supplementary information** Supplementary information is available for this paper at <https://doi.org/10.1038/s41581-024-00829-x>.