



Shaping Tomorrow's Nephrology: Insight-Driven Kidney Care

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Economic Value of Reducing End-stage Kidney Diseases in 45 Countries, 2015-2023, with Projections up to 2050: A Global Modeling Study

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Objectives : Despite advances in dialysis care, ESKD mortality have the potential to continue increasing. However, global projections of ESKD mortality and quantification of its avoidable and economic components remain limited.

Methods : We analyzed ESKD mortality data from 45 countries in the WHO Mortality Database from 2010 to 2023 and projected through 2050. Avoidable mortality was defined relative to a frontier set at the 30th percentile of observed mortality, and its economic value was estimated using a value-of-a-statistical-life framework as a share of annual income.

Results : Globally, the age-standardized ESKD mortality rate declined to 4.0 per 100,000 in 2017, rebounded to 4.87 per 100,000 in 2023, and was projected to increase to 7.2 per 100,000 by 2050. The steepest and most sustained increase was observed in North America, followed by the Asia-Pacific region, and the projected increase in mortality was concentrated among adults aged ≥ 75 years. Avoidable ESKD mortality was projected to increase globally through 2050. The avoidable proportion was highest in younger adults, whereas the absolute avoidable mortality rate was concentrated in adults aged ≥ 65 years, with the sharpest increase in North America. The economic burden of avoidable ESKD mortality was also projected to increase substantially, concentrated in adults aged ≥ 65 years and in North America.

Conclusions : In conclusion, global ESKD mortality is projected to increase through 2050, with the fastest growth in North America and a dominant contribution from older adults. Avoidable mortality and its economic burden will also expand, highlighting the need for targeted prevention for older adults in high-burden regions.