

# Kidney health within the broader non-communicable disease agenda

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**Kidney disease is strongly linked with cardiovascular diseases, hypertension, diabetes, infections and other health conditions, as well as social determinants of health and climate change. Consequently, a holistic approach to promote well-being, protect individual health and improve access to quality primary care will support kidney health.**

The triple billion targets of the World Health Organization (WHO), launched in 2019, aim to provide 1 billion more people with universal health coverage, to better protect 1 billion people from health emergencies, and to promote better health and well-being among 1 billion people<sup>1</sup>. To achieve these targets, six strategic objectives have been proposed to promote health by tackling climate change and the social determinants of ill health; providing accessible and equitable quality primary health care and financial risk protection; and protecting health through prevention, mitigation, preparation and responsiveness in health emergencies<sup>1</sup>. These objectives strongly align with improving kidney health and access to kidney care.

Given the broad spectrum of risk factors associated with kidney diseases, progress towards all Sustainable Development Goals (SDGs) is required to achieve better kidney health and improve access to quality and equitable kidney care<sup>2</sup>. However, progress has thus far been insufficient, with <10% of SDG Goal 3 being on track in 2023 (ref. 3). Target 3.4 of SDG 3 aims to reduce premature mortality from non-communicable diseases (NCDs) by one-third by 2030. To accelerate progress towards SDG target 3.4, the WHO supports domestic capacity to enhance action across different sectors of government and offers countries guidance, through prioritization of a combination of locally appropriate interventions, to tackle risk factors and prevent, diagnose and treat NCDs at the primary-care level (Supplementary Fig. 1 and Supplementary Table 1). Some progress has been achieved, with significant reductions in age-standardized mortality for chronic respiratory disease, cardiovascular diseases and cancer between 2000 and 2019, but for diabetes and diabetic kidney disease, these have continued to increase<sup>4,5</sup>.

The COVID-19 pandemic highlighted that NCDs must be prioritized on the global health agenda. This renewed focus is reflected in the NCD implementation roadmap, which aims to accelerate action at the country level through better understanding of local NCD epidemiology, risk factors, barriers and enablers; prioritization and scale-up of impactful and feasible interventions; and strengthening of data tracking<sup>4,6</sup>. The broad NCD targets include reducing premature mortality from cardiovascular disease, cancer, diabetes and chronic respiratory disease; reducing associated harmful behavioural risk factors; improving control of common biological risk factors;

and increasing access to essential medicines and technologies. Specific indicators within these targets are being refined to enhance monitoring and evaluation of progress<sup>6</sup>.

The three leading global risk factors for chronic kidney disease (CKD) in low- and middle-income countries are hypertension, diabetes mellitus and a high body mass index<sup>7</sup>. Strategies to reduce the burdens of these traditional biological risk factors, including controlling hypertension, diabetes and obesity, reducing salt intake and tobacco use, and increasing physical exercise, are all core targets proposed in the NCD roadmap<sup>6</sup>. Concerningly, the World Hypertension Report found that around 1 in 2 people with hypertension (systolic/diastolic blood pressures >140/90 mm Hg) remain undiagnosed, and hypertension is controlled in only 1 in 5 people<sup>8</sup>. Current estimates found that only about 60% of people living with diabetes are diagnosed, and among these only around 60% have a glycated haemoglobin A1c (HbA1c) below 8% (ref. 9). The latest report found that one in eight people worldwide are overweight or have obesity<sup>10</sup>. Much work remains to be done if adequate control of these risk factors is to be achieved to protect kidney health. To enhance progress in tackling these risk factors, the WHO Best Buys outline highly cost-effective strategies to promote healthy lifestyles and healthy food consumption. Such improvements, in combination with a reduction in environmental and social risks, would also have a positive impact on kidney disease risk, which accrues across the life course<sup>2</sup>. Promotion of kidney health is in turn important to reduce the burden of hypertension and other NCDs and promote well-being.

Historically, the burden of kidney disease has been mainly linked to that of kidney replacement therapy (KRT), which has contributed to the relative neglect of kidney diseases in primary care. At present, KRT is not sustainable in many low-resource settings. Among those at high risk of CKD in low- and middle-income countries, only one in ten people with CKD are aware of their disease<sup>11</sup>. Early detection and treatment of kidney disease is key to reduce progression and prevent kidney failure, which requires improved awareness at all levels and a systematic and integrated approach (Supplementary Fig. 1)<sup>12</sup>. Screening for kidney disease in individuals at high risk is recommended in the WHO guideline for the pharmacological treatment of hypertension in adults, the HEARTS technical packages and the WHO package of essential noncommunicable disease interventions for primary health care. Many diagnostics and medications needed for kidney care are included in the WHO Model List of Essential Medicines and Essential Diagnostic List, but these are not yet universally accessible<sup>2</sup>.

**“A multifaceted approach ... across NCD areas, is crucial to curbing premature mortality ... related to kidney disease.”**

The WHO is collaborating with the International Society of Nephrology to develop a framework to integrate kidney care into primary care in low- and middle-income countries, with a focus on promoting prevention and early detection and, in populations at high risk, improved management of risk factors, optimization of therapies to delay CKD progression and timely referrals for advanced care. A framework for developing KRT programmes and provision of supportive care has been developed by the International Society of Nephrology with WHO contribution (Supplementary Fig. 1).

Not all kidney disease is attributable to traditional risk factors. In specific contexts, non-traditional risk factors, including pollution, heat exposure, water scarcity, snake bites and poisonings – all of which are related to climate change and the social determinants of health – are contributing to hotspots of CKD<sup>2</sup>. The WHO has programmes in place to address some of these risk factors. Kidney diseases also are closely linked with communicable diseases<sup>2</sup>. The SDG focus on malaria, tuberculosis and HIV, promotion of access to clean water and improved vaccination coverage has probably reduced kidney disease risk<sup>9</sup>. Ongoing WHO programmes continue to support countries to address these common infections, along with other disease prevention strategies (Supplementary Fig. 1).

Pre-eclampsia and acute kidney injury (AKI) are important problems affecting kidney health in pregnant women, especially in low- and middle-income countries<sup>2</sup>. Low birth weight and preterm birth influence long-term kidney health<sup>2</sup>. The SDG agenda has led to progress in some pregnancy and child health indicators, but disparities in maternal mortality remain across the world<sup>1</sup>. The WHO continues to support countries with technical packages to improve the quality of pregnancy and peripartum care and is working with countries to optimize child health and reduce risk factors for NCDs including CKD. Greater awareness and understanding of the non-traditional risks threatening kidney health in local contexts are needed, requiring research and intersectoral collaboration within communities and across the health system.

## “Collaboration between the WHO and the global kidney community will support countries to strengthen kidney care”

Kidney health is threatened in humanitarian settings. AKI can result from crush injuries, and people living with CKD or kidney failure face life-threatening interruptions in care. WHO NCD emergency kits include basic equipment and medication to manage hypertension, diabetes and cardiovascular disease, also useful for people with AKI and CKD. In recent emergencies, WHO has been a key partner with international kidney societies to facilitate communications with stakeholders and mobilize networks to procure and transport dialysis supplies and transplant medications. A long-term approach is required to develop sustainable and robust strategies to successfully meet the complex needs of people with kidney failure in humanitarian settings. Crucially, this approach includes collaboratively strengthening dialysis and transplant services in these fragile settings at baseline to enhance resilience during crises.

The WHO is committed to continually assessing and improving our strategies to address health challenges, including kidney disease. A multifaceted approach, integrating prevention, early detection and management strategies across NCD areas, is crucial to curbing premature mortality and improving overall health outcomes related to kidney disease. These strategies align with the WHO triple billion targets and achievement of SGD 3.4. Collaboration between the WHO and the global kidney community will support countries to strengthen kidney care and improve the well-being of those at risk for or living with kidney disease.

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### Competing interests

V.A.L. chairs the Advocacy Working Group of the International Society of Nephrology. The other authors declare no competing interests.

### Additional information

**Supplementary information** The online version contains supplementary material available at <https://doi.org/10.1038/s41581-024-00847-9>.