



Including Kidney Health in the National Public Health Agenda: The Time is Now

Sumana Vasishta¹, Vivekanand Jha^{2*}

Kidney disease is finally receiving the global attention it deserves. In May 2025, the World Health Assembly adopted a landmark resolution on kidney health on reducing the burden of noncommunicable disease (NCD) through kidney health promotion and prevention, paving the way for its prioritization within the World Health Organization's NCD agenda.¹ For India, which faces an immense and growing burden of kidney disease, this global momentum is a wake-up call to integrate kidney health into our national public health agenda now by strengthening our policies and health systems to combat renal diseases as public health priorities.

BURDEN OF CHRONIC KIDNEY DISEASE IN INDIA

Chronic kidney disease (CKD) is a major global health challenge, and India is at its epicenter. The Global Burden of Disease 2017 study estimated that 697 million people had CKD worldwide, with India accounting for approximately 115 million cases—second only to China. This means nearly one in every six people with CKD globally lives in India.²

Additionally, the burden is unevenly distributed and is disproportionately high in rural areas (Table 1). A meta-analysis of community surveys conducted between 2011 and 2023 placed national prevalence at 13.2%, with marked heterogeneity across regions.³ Urban centers are on the lower end of the spectrum: the CARRS study⁴ in Delhi and Chennai reported a prevalence of just 7.5%. In mixed urban–rural settings, however, the SEEK study⁵ found the rate to be 17.2%, climbing to 18–21% in the rural coastal Uddanam region of Andhra Pradesh among agricultural communities, with most cases attributed to CKD of unknown etiology (CKDu).⁶

Such geographic clustering magnifies the stress on already scarce renal care resources. Government and industry estimate 2,20,000 patients develop new end-stage kidney disease (ESKD) each year, leading to an annual demand of 34 million hemodialysis (HD) sessions. Against this, the country has about 5,000 dialysis centers and 3,340 nephrologists.⁷ Even in those who avail state-sponsored free dialysis, sadly, the mortality

rate is high due to significantly high indirect costs, resulting in inaccessibility.⁸ Consistent with this, the Million Death Study⁹ showed a 50% rise in renal failure deaths among 15–69-year-olds between 2001–03 and 2010–13. By 2015, CKD contributed to an estimated 1,36,000 deaths nationwide. In some rural areas where CKD is endemic, CKD has emerged as the leading cause of death in the adult population.¹⁰ The dire financial consequences of kidney care have been documented repeatedly, with high rates of catastrophic healthcare expenditure even in those with mild to moderate stages of CKD.^{11,12}

Taken together, these numbers paint a grim picture—CKD in India is common, frequently undiagnosed, heavily skewed toward rural populations with limited access to preventive and therapeutic services, increasingly fatal, and imposes catastrophic financial and human costs.

RISK FACTORS FOR CHRONIC KIDNEY DISEASE IN INDIA

India's CKD burden is driven by a combination of traditional risk factors and novel context-specific social and environmental risks. Like many countries, the leading causes are type 2 diabetes and hypertension. The SEEK study⁵ found that 64.5% of CKD patients had hypertension and 31.6% had diabetes. The ICKD study¹³ reported even higher rates—87 and 37%, respectively. India's demographic transition to an aging population compounds this load—the prevalence of CKD rises steeply with age, and projections indicate that the population aged ≥60 years will reach 194 million by 2031, which will further raise the CKD burden.¹⁴ Thus, immediate action is imperative as India stands at a demographic and epidemiological inflection point.

Beyond these, India faces unique factors. In regions like Uddanam in Andhra Pradesh, a substantial fraction of the CKD burden cannot be attributed to diabetes, hypertension, or other known causes of kidney disease.¹⁵ This condition, termed CKDu, disproportionately affects rural agricultural workers. The STOP-CKDu AP study estimated CKD and CKDu prevalence at 21 and 15%, respectively, in the region.¹⁶ Although the exact causes of CKDu remain unclear, recent reviews suggest that

heat stress, agricultural pesticides, heavy metals, and water contamination may be contributing factors.¹⁷ Cases with similar disease phenotype have been reported from other parts of India,^{15,18} suggesting that the prevalence may be more widespread than that anticipated thus far, suggesting the need for population-level studies (Table 1).

Environmental change-related factors such as extreme heat exposure, dehydration, worsening air pollution, salt intrusion in coastal aquifers, increasing use of ultraprocessed foods, etc., increasingly drive development and progression of kidney diseases, especially among outdoor laborers and low-income groups. Lack of awareness, along with late recognition of CKD, further accelerates the progression. Moreover, Indian studies consistently demonstrate that poverty is an independent driver of advanced CKD. For instance, Raval et al.¹⁹ noted that in rural areas, lower income ($p < 0.01$) and limited access to healthcare ($p < 0.05$) were strongly associated with accelerated CKD progression. In contrast, in urban areas, lower education levels ($p < 0.01$) and unemployment ($p < 0.05$) were the primary socioeconomic factors linked to faster CKD progression. Francis et al. describe this pattern globally and deem it “morally indefensible.”²⁰

To summarize, the confluence of cardiometabolic, demographic, environmental, and social determinants demonstrates that kidney health must become an explicit part of India's public health agenda. A sole focus on glycemic and blood-pressure control is inadequate. The country needs CKD case finding integrated into current NCD programs, systematic

¹Internal Medicine Trainee, Health Education and Improvement Wales, Wales, United Kingdom; ²Executive Director, George Institute for Global Health, Delhi, India; School of Public Health, Imperial College, London, United Kingdom; Manipal Academy of Higher Education, Manipal, Karnataka, India; *Corresponding Author

How to cite this article: Vasishta S, Jha V. Including Kidney Health in the National Public Health Agenda: The Time is Now. *J Assoc Physicians India* 2025;73(11):11–14.

Table 1: CKD prevalence in selected community-based studies in India

Study (year)	Setting (population)	Sample size	CKD prevalence (%)
Anand et al. (CARRS, 2015) ⁴	Chennai and Delhi (urban)	10,000+	7.5 (95% CI: 6.8–8.2)
Singh et al. (SEEK, 2013) ⁵	Multicenter urban/rural (mixed)	5,588	17.2 (95% CI: 16.3–18.1)
Tatapudi et al. (2018) ⁶	Uddanam, Andhra Pradesh (rural)	2,210	18.23 (95% CI: 16.4–21.0)
John et al. (STOP-CKDu, 2020) ¹⁶	Uddanam, Andhra Pradesh (rural)	2,419 (67 villages)	21.3 (men), 16.2 (women)
Talukdar et al. (2025) ³	Pooled data, meta-analysis 2011–2023	18 studies	13.24 (95% CI: 10.52–16.22)

surveillance of CKDu hot spots, rigorous environmental remediation, and social-protection policies strong enough to break the persistent cycle between poverty and kidney disease.

GAPS IN INDIA'S CURRENT APPROACH

India's healthcare system currently lacks a coherent kidney disease strategy. Recent public schemes acknowledge the disease, but almost every rupee flows to the last step of the pathway—dialysis and transplant—while prevention, early detection, and basic supportive therapy remain neglected. The Pradhan Mantri National Dialysis Program (PMNDP) delivers free HD in district hospitals, yet peritoneal dialysis (PD)—cheaper, home-based, and formally allowed under PMNDP—accounts for <10% of Indian dialysis patients and is “dying on the ventilator,” according to a 2024 national audit by Jeloka et al.²¹ Ayushman Bharat PM-JAY offers up to Rs. 5 lakh per family for HD, PD, and transplant, but does not reimburse lifelong immunosuppression or follow-up labs, leaving transplant recipients in chronic financial distress. At the state level, several schemes finance dialysis and transplant, but few fund early-stage care, erythropoietin, and other supportive medication or posttransplant immunosuppressants. Kidney transplantation also remains constrained, with merely 13,642 surgeries performed nationwide in 2023 against >2,00,000 new ESKD cases each year, indicating the huge gap between demand and supply.²²

The revised National Program for Prevention and Control of NCDs (NP-NCD) finally lists CKD for screening; however, Health and Wellness Centers (HWCs) still lack creatinine meters, urine dipsticks, and treatment algorithms. The other central programs, such as the National Program for Health Care of the Elderly (NPHCE) and the National Rural Health Mission (NRHM), now part of the broader National Health Mission (NHM), unfortunately do not have CKD screening explicitly built in at all.

Challenges at the Primary Care Level

Primary healthcare centers often lack the necessary infrastructure for early CKD detection and management. Essential diagnostic tests, such as serum creatinine and urine protein assessments, are frequently unavailable. Additionally, the availability of generic kidney-protective medications, like angiotensin-converting enzyme (ACE) inhibitors, sodium-glucose cotransporter 2 (SGLT2) inhibitors, and nonsteroidal mineralocorticoid receptor antagonists (nsMRAs), is inconsistent. Consequently, many CKD cases are diagnosed incidentally or at advanced stages and/or are unable to receive effective guideline-directed therapies, limiting the effectiveness of interventions, thereby contributing to high mortality.

Financial Toxicity

Financial constraints remain a major barrier to CKD treatment, often pushing families into severe financial distress. Even among patients accessing state-sponsored free dialysis, dropout rates and resulting mortality remain alarmingly high. This is largely due to substantial out-of-pocket costs for essential treatments, transportation, and other related expenses. In fact, previous studies have shown that the catastrophic cost burden associated with long-term dialysis treatment is a major contributor to cessation of treatment and inequity in access to care.^{8,23}

Awareness and Accessibility Issues

Awareness of CKD is limited among both the general population and healthcare providers, particularly in rural areas. This lack of awareness results in late presentations, with many patients seeking care only at advanced stages of the disease. Additionally, nephrology and dialysis services are mainly concentrated in urban centers, further limiting access to specialized care for rural populations.

These gaps highlight the urgent need for innovative and integrated care models. Given the convergence of chronic diseases, a multimorbidity approach is necessary—district-level multidisciplinary NCD clinics could manage diabetes, hypertension, and

CKD under one roof. At the primary care level, task-shifting and task-sharing approaches that train frontline health workers, nurses, and medical officers to handle CKD risk assessment, screening, and routine follow-ups, with referral to specialist care being reserved for those requiring it, would help ease the burden on India's limited nephrology workforce while expanding equitable and timely kidney care nationwide. In parallel, developing AI-enabled risk prediction approaches that adapt global risk stratification tools to data derived from Indian CKD cohorts and integrated with interoperable electronic health records would empower tertiary physicians to remotely review laboratory data and provide guided care.

In summary, India's current approach remains reactive and treatment-focused, with limited emphasis on preventive care, inadequate diagnostics at the primary level, and significant financial barriers even for “publicly covered” patients. While the proposed models through the HWCs represent a welcome starting point, sustained investments in policy reform, healthcare infrastructure, and community engagement will be essential to fundamentally transform India's CKD landscape and improve patient outcomes nationwide.

THE CASE FOR POLICY INTEGRATION

CKD in India is not just an NCD issue but a social justice issue—poor, rural, and marginalized groups shoulder the brunt of preventable kidney failure. The ethical imperative is clear—the right to health enshrined in India's constitution demands equitable kidney care for all citizens, making concerted CKD control a moral necessity. At a national level, CKD threatens India's ability to meet its NCD targets. Addressing CKD directly advances the UN Sustainable Development Goals (SDG), particularly SDG 3.4 (reducing premature NCD mortality) and SDG 3.8 (achieving Universal Health Coverage). Economically, unchecked CKD imposes devastating costs, especially when detected late, driving the need for expensive

Table 2: Flagship central health programs relevant to kidney care

Central scheme	Current initiatives	Opportunities
NP-NCD (national)	Population screening for diabetes, hypertension, common cancers; CKD newly added in 2023 guidelines	Add serum creatinine and urine albumin-to-creatinine ratio (ACR) to the existing screening bundle; incorporate CKD counseling materials
Ayushman Bharat HWCs	Blood pressure (BP), glucose, basic point-of-care tests; no kidney markers	Equip with low-cost creatinine meters and urine dipsticks; automatic estimated glomerular filtration rate (eGFR) reporting
NPHCE (elderly care)	Geriatric package, no explicit kidney focus	Routine CKD screening in those ≥ 60 years
AB-PM-JAY (insurance)	Dialysis (HD and PD) and transplantation bundles	Empanel more PD and transplant follow-up centers; reimburse erythropoietin, vaccination, and immunosuppressants
PMNDP (dialysis)—national	Free HD in district hospitals; pilot PD rollout	Scale up PD “first policy,” link with HWC for risk-factor control

Table 3: Selected state-level programs

State scheme	Current initiatives	Opportunities
Andhra Pradesh—Dr YSR Aarogyasri + PMNDP	Covers HD, PD, and transplantation	Empanel more PD and transplant follow-up centers; reimburse erythropoietin, vaccination, and immunosuppressants
Tamil Nadu—Chief Minister’s Comprehensive Health Insurance Scheme (CMCHIS)	Fixed packages for HD and PD sessions and transplant follow-up; network of >700 empaneled hospitals	Add annual creatinine/ACR screening for CMCHIS card-holders; cover SGLT2 inhibitors and phosphate binders
Kerala—Karunya Arogya Suraksha Padhathi (KASP) + Karunya Benevolent Fund (KBF) + Samaswasam	KASP (AB-PM-JAY equivalent) provides Rs. 5 lakh cover; KBF and Samaswasam offer monthly dialysis subsidy for low-income patients	Empanel more PD and transplant follow-up centers; reimburse erythropoietin, vaccination, and immunosuppressants

dialysis or transplantation—expenses that early detection and preventive care could substantially reduce. Families bear catastrophic out-of-pocket spending, while premature deaths among working-age adults severely diminish workforce and economic productivity. There is, therefore, a compelling and urgent case for including kidney health in India’s public health agenda.

The new WHO resolution on CKD offers an actionable roadmap, calling for earlier detection, stronger prevention, wider treatment access, and more resilient health systems—elements that India can weave into existing platforms. [Tables 2 and 3](#) map the current landscape and gaps and opportunities at the central and state levels, respectively. Building on these foundations, we outline practical upgrades across the prevention-to-post-transplant continuum. Collectively, these steps would close critical gaps, make dialysis genuinely affordable, and move India closer to equitable, sustainable kidney care for every citizen.

CONCLUSION

The 2025 WHO resolution on CKD presents India with a critical opportunity to act. With one of the highest global burdens, India must urgently shift from a reactive, treatment-heavy model to a proactive, prevention-focused approach. CKD is not

only a health issue—it reflects deep social and economic inequities. Integrating kidney care into national NCD programs, strengthening primary care, expanding early detection, and ensuring financial protection are all essential. The path forward is clear. By acting decisively, India can prevent avoidable deaths, mitigate economic losses, and move toward equitable, sustainable kidney care for all, thereby fulfilling both its constitutional duty and global commitments.

REFERENCES

- World Health Organization. Seventy-eighth World Health Assembly—daily update: May 2025 [Internet]. Geneva: WHO; 2025 [cited 2025 Jun 11]. Available from: <https://www.who.int/news/item/23-05-2025-seventy-eighth-world-health-assembly--daily-update-23-may-2025#:~:text=Assembly%20approves%20first,kidney%20health>.
- Bikbov B, Purcell CA, Levey AS, et al. Global, regional, and national burden of chronic kidney disease, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet* 2020;395(10225):709–733.
- Talukdar R, Ajayan R, Gupta S, et al. Chronic kidney disease prevalence in India: a systematic review and meta-analysis from community-based representative evidence between 2011 to 2023. *Nephrology (Carlton)* 2025;30(1):e14420.
- Anand S, Shivashankar R, Ali MK, et al. Prevalence of chronic kidney disease in two major Indian cities and projections for associated cardiovascular disease. *Kidney Int* 2015;88(1):178–185.
- Singh AK, Farag YMK, Mittal BV, et al. Epidemiology and risk factors of chronic kidney disease in India—results from the SEEK (Screening and Early Evaluation of Kidney Disease) study. *BMC Nephrol* 2013;14:114.
- Tatapudi RR, Rentala S, Gullipalli P, et al. High prevalence of CKD of unknown etiology in Uddanam, India. *Kidney Int Rep* 2018;4(3):380–389.
- Ernst and Young, NATHEALTH. Dialysis Delivery in India: Demand, Challenges and Policy [Internet]. Ernst and Young and NATHEALTH; 2023 [cited 2025 Jun 11]. Available from: https://nathealthindia.org/wp-content/uploads/2023/03/EY-Dialysis-Whitepaper_Final-Version_For-Print.pdf.
- Shaikh M, Woodward M, John O, et al. Utilization, costs, and outcomes for patients receiving publicly funded hemodialysis in India. *Kidney Int* 2018;94(3):440–445.
- Dare AJ, Fu SH, Patra J, et al. Renal failure deaths and their risk factors in India 2001–13: nationally representative estimates from the Million Death Study. *Lancet Glob Health* 2017;5(1):e89–e95.
- Gummidi B, Gautam V, John R, et al. CKD is the major cause of death in Uddanam: a population-representative study using smart verbal autopsy. *Kidney Int Rep* 2023;9(1):108–113.
- Gummidi B, John O, John R, et al. Catastrophic health expenditure and distress financing among patients with nondialysis chronic kidney disease in Uddanam, India. *Kidney Int Rep* 2021;7(2):319–321.
- Bradshaw C, Gracious N, Narayanan R, et al. Paying for hemodialysis in Kerala, India: a description of household financial hardship in the context of medical subsidy. *Kidney Int Rep* 2018;4(3):390–398.
- Kumar V, Yadav AK, Sethi J, et al. The Indian Chronic Kidney Disease (ICKD) study: baseline characteristics. *Clin Kidney J* 2021;15(1):60–69.
- Press Information Bureau, Government of India. World Senior Citizen Day 2024 [Internet]. New Delhi: PIB; 2024 [cited 2025 Jun 11]. Available from: <https://www.pib.gov.in/PressNoteDetails.aspx?NotelD=152034&ModuleId=3>.
- John O, Gummidi B, Jha A, et al. Chronic kidney disease of unknown etiology in India: what do we know and where we need to go. *Kidney Int Rep* 2021;6(11):2743–2751.

16. John MD O, Gummidi B, Ghosh A, et al. SAT-150 prevalence of chronic kidney disease in Uddanam, results from the study to test and operationalize preventive approaches for CKD of undetermined aetiology (Stop CKDu AP). *Kidney Int Rep* 2020;5(3):S64–S65.
17. Dhanorkar MA, Verma J, Kulshreshtha MR, et al. Environmental risk factors and mechanisms of injury in chronic kidney disease of unknown etiology—fitting the pieces of the puzzle. *Indian J Kidney Dis* 2023;2(3):67–77.
18. Chowdhary P, Rathore V, Jain K, et al. CKD of unknown origin in Supebeda, Chhattisgarh, India. *Kidney Int Rep* 2020;6(1):210–214.
19. Raval A, Jadav M, Vora M, et al. Role of socioeconomic factors in the pathological progression of chronic kidney disease in rural and urban settings. *J Pharm Bioallied Sci* 2024;16(Suppl 4):S3179–S3181.
20. Francis A, Harhay MN, Ong ACM, et al. Chronic kidney disease and the global public health agenda: an international consensus. *Nat Rev Nephrol* 2024;20(7):473–485.
21. Jeloka TK, Prasad N, Gupta A. Peritoneal dialysis in India is dying—is weaning from the ventilator likely. *Indian J Nephrol* 2025;35(2):123–126.
22. Kher V, Sahay M, Jha PK. Kidney transplantation in India—past, present and future. *Indian J Nephrol* 2024;1–8.
23. Ramachandran R, Jha V. Kidney transplantation is associated with catastrophic out of pocket expenditure in India. *PLoS One* 2013;8(7):e67812.