

# Chronic Kidney Disease Care in Indonesia: Challenges and Opportunities

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The burden of chronic kidney disease (CKD) is a significant global health concern. Previous study reported that the CKD incidence reached 200 cases per million per year in many countries with the prevalence 11.5% (4.8% in stages 1-2 and 6.7% in stages 3-5).<sup>1</sup> Other study further reported that the estimate prevalence of CKD was 15% higher in low- and middle-income countries compared to the high-income countries.<sup>2</sup> However, there are limited statistics available on the epidemiology of CKD in Indonesia. According to the Basic Health Research (Riset Kesehatan Dasar [Riskesdas], 2018), the prevalence of CKD in Indonesia increased from 0.2% in 2013 to 0.3% in 2018.<sup>3-4</sup> These results may, however, understate the true prevalence of CKD in our population. Despite the limited data on the CKD prevalence, the number of patients receiving kidney replacement treatment (KRT), primarily in the form of hemodialysis, is rapidly rising (i.e., more than 132.000 in 2018).<sup>5</sup> Chronic hemodialysis therapy results in extremely high expenses, correspond to the Indonesian Health Profile 2021 report, where kidney failure spending coming in fourth overall after heart disease, cancer, and stroke. However, the report also showed that the current health financing model places more emphasis on the curative or treatment area, while promotive and preventive measures merely occupy a very small portion (i.e., 0.3%).<sup>6</sup>

Addressing nephrology care, especially in developing country such as Indonesia, is not an

easy task. In addition to the size of Indonesian population, which is expected to reach 271 million in 2021, we also have a shortage of nephrology professionals (doctors, nurses, technicians) and medical facilities. Meanwhile, the triple burden of disease continuously becoming our national health challenge. This is the result of inadequate control of infectious, re-emerging, and new emerging diseases; a demographic and nutritional transition which causing chronic diseases to be the top five list of catastrophic disorders; and the steady rise in the number of injuries and traumas.<sup>7</sup> Moreover, the prevalence of metabolic diseases associated with the progression of CKD increased over time, according to data from the National Basic Health Survey (Riskesdas, from 2007 to 2018) [e.g., diabetes mellitus 8.3% to 10.9%; hypertension 25.8% to 34.1%; stroke 7% to 10.9%; obesity 26.6% to 34.6%; and cancer 1.4% to 1.8%].<sup>3-4,8</sup> Also, our previous study demonstrated that hypertension prevalence among adults >18 years is as high as 41%, of which only 36.2% subjects treated with anti-hypertensive with less than a third (21.7%) of subjects consumed the medication regularly.<sup>9</sup>

A comprehensive nephrology referral system is also a challenge. We can argue this statement with evidence from the tertiary care, where it was reported that most kidney failure patients (83%) commenced dialysis with an urgent start, along with late referral to nephrologist (90%), started dialysis with temporary catheter

(95.2%), and the median eGFR to start dialysis was 5.3 (range: 0.6 – 14.6) ml/minute/1.73 m<sup>2</sup>.<sup>10</sup> However, individual awareness, as well as an effective screening and prevention program for high-risk group are also a significant hurdles. Meanwhile, screening program to identify kidney diseases among population will cause a massive economic burden, thus specific CKD risk-factors should be known for Indonesian unique population. Our study was able to identify CKD risk factors that are significantly different from those in western countries (i.e., hepatitis [OR 3.406; CI 2.496-4.64]). This study underlined that Indonesia might need a different approach to CKD prevention program, that is not only focusing on the traditional risk factors (i.e., diabetes, hypertension, etc.) but also to include the communicable diseases, such as hepatitis.<sup>9</sup>

Since 2022, the Ministry of Health has initiated a health transformation program to improve the health system, to address health disparities, both within the country and between countries. There are six pillars of health transformations. First is transformation of primary services, which put more emphasis on promotive and preventive efforts. This aims to provide education related to disease prevention, and also to increase the capacity and capability of health workers in primary care. Second is transformation of referral services, focuses on increasing access and equitable distribution of health services in all regions in Indonesia. Third, the health resilience system which includes efforts to increase resilience in medical response and strengthen resilience during health crises. Fourth, transformation of health financing system to develop health financing regulations with the aim of building equity, easy accessibility for the community, and sustainability of financing allocations. Fifth, transformation of health human resources, to improving the quality of human resources ensuring and ensuring an even distribution of health workers in all over Indonesia. Lastly, transformation of health technology to encourages technological development and digitization in the health sector.<sup>11</sup>

One of the health transformation programs which specify in nephrology care is the implementation of the Uro-Nephrology Support

Program (Program Pengampuan Uro-Nefrologi), with the aim to strengthen services, provide equal distribution of services and increase the latest technology for the diagnosis and treatment of urology/nephrology diseases in Indonesia. This program included secondary and tertiary care to improve the extent and quality of care to slowing the CKD progression, improving kidney replacement therapy (hemodialysis, peritoneal dialysis, and kidney transplant) access and treatment, as well as to provide dialysis training program for health care workers.

Providing high-quality nephrology care that all Indonesians can access is challenging. Yet, steps have already been taken in the direction of service enhancement. Thus, there is hope for better kidney health in Indonesia. Governments, academic medical centres, nephrology societies, as well as the citizen will all need to work together and take consistent effort to make a sustainable and comprehensive kidney care.

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