Global inequality in kidney care

From screening to renal replacement therapy, gross inequity exists between affluent and disadvantaged populations

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Global inequity in the distribution of both the burden and management of kidney disease is behind the theme of World Kidney Day, 12 March 2015, "Kidney Health for All".[1] It will be observed in Australia later in March.[2] Disadvantaged populations experience greater risk, prevalence and progression of chronic kidney disease (CKD); less access to, and worse outcomes from, both dialysis and transplantation; and higher incidence and decreased recovery after acute kidney injury.

Worldwide prevalence of adult CKD is about 10%, reaching up to 50% in high-risk populations, including the Australian Aboriginal and Torres Strait Islander community, for whom CKD prevalence is twice the national average. The prevalence of advanced (stage 4 and 5) CKD is four times higher among Indigenous peoples than among non-Indigenous Australians, and up to 20 times as high among remote and very remote populations. This excess is driven partially by higher prevalences of diabetes mellitus, infectious diseases and poor nutrition;[2] and disadvantaged populations have more unrecognised and more untreated CKD.[3]

One fifth of the world's population lives in extreme poverty and is subject to increasing rates of CKD and end-stage kidney disease driven by poor health literacy and behaviour, limited health care access, and biological influences such as poor nutrition and genetic factors. These drivers are amplified by pollutants, communicable diseases, unclean water and poor sanitation.[4] Agricultural workers in Central America and South Asia are uniquely exposed to nephrotoxic agrichemicals, herbal medicines and contaminated waste. Poor countries in upward economic transition experience higher rates of diabetes, hypertension and obesity.[1] From 1990 to 2010 the CKD death rate rose by over 80%, third behind HIV/AIDS and diabetes. A lack of health care resources, including nephrologists, drives a vicious cycle of worse CKD outcomes and heightened cardiovascular risk.[3]

Recognition of the close association of kidney disease with other non-communicable diseases (NCDs) is growing slowly. CKD is yet to receive the attention given to other NCDs within the World Health Organization and the NCD Alliance.[5] Thus, opportunities are lost to link with locally relevant, implementable and cost-effective prevention programs dealing with multiple NCDs. Once detected, CKD requires relatively inexpensive interventions that can substantially slow disease progression. Multifaceted programs have reduced CKD incidence and prevalence in Chile, Cuba, Mexico, Taiwan, the United Kingdom and Uruguay.[3]

Global inequality of access is even greater when it comes to renal replacement therapy. In 2010, 2.62 million people were receiving renal replacement therapy, 2.05 million dialysis and the remainder transplantation, meeting 25%–50% of global need. Regional renal replacement therapy rates varied from 1840 per million population in North America to 80 per million in Africa; and among individual countries, rates varied from almost 2400 per million to zero.[6] Eighty per cent of all renal replacement therapy is provided in North America, Europe and Japan, to less than 20% of the world's population.[7] Unmet need for renal replacement therapy is negligible in the United States, Taiwan, South Korea and Singapore, but huge in mid- and east-African countries. In countries without universal access to health care, dialysis costs can be catastrophic or prohibitive for the individual and family. Often, renal replacement therapy falls apart once no money is left. The need for more affordable renal replacement therapy technologies is urgent.

National prevalence of transplantation also depends on wealth. Renal transplantation is now practised in more than 80 countries but meets only 10% of global need.[8] Transplantation outcomes are generally worse among disadvantaged populations, although a small minority of centres in these countries are exceptionally good. National organ donation frameworks, clinical training and cheaper immunosuppressant agents enable increased rates and success of transplantation.

Acute kidney injury follows a similar path. Each year, 85% of about 13.3 million kidney injuries occur in low- and middle-income countries, with about 1.4 million deaths.[9] Acute kidney injury predominantly affects the young, due to diarrhoeal diseases, tropical and other infections, nephrotoxins, snakebite and obstetric catastrophes.[10] An initiative of the International Society of Nephrology, 0 by 25, aims for no deaths from acute kidney injury globally by 2025. Inexpensive, easy and accurate measurement of serum creatinine, training in assessment of urinary sediment and volume status, and the availability of affordable, usually peritoneal, dialysis will be needed to achieve this goal.

Reduction in the global burden of acute kidney injury, CKD and end-stage kidney disease and greatly improved worldwide access to renal replacement therapy should be achieved within decades, especially as new, low-cost technologies become available. A more informed medical profession and community can lead the way with advocacy and innovation in achieving better — and more equitable — kidney health for all citizens.

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doi: 10.5694/mja15.00035

Online first 12/03/15

Competing interests: No relevant disclosures.

Provenance: Commissioned; not externally peer reviewed. ■

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