

Barriers to Optimal Kidney Health Among Indigenous Peoples



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INTRODUCTION

Indigenous communities, peoples, and nations are groups of people in a particular country or region who maintain a historical continuity with their culture, and traditional ways of life that predated precolonial invasions on their territories, with a determination to preserve and transmit such cultural norms for future generations. The United Nations estimated that over 476 million people identify as Indigenous, spread across 90 countries from the Arctic to the South Pacific accounting for nearly 6.2% of the total global population.¹ Indigenous peoples are heterogeneous in sociocultural distributions constituting over 5000 distinct sociocultural groups across the world.

Despite the sociocultural heterogeneity, they face similar health challenges regarding burden of disease, access to and quality of healthcare, and often suffer worst outcomes compared to their non-Indigenous counterparts. For example, Indigenous peoples have higher burden of chronic diseases, including type 2 diabetes mellitus, cancer, chronic lung disease, and chronic kidney disease (CKD) resulting in increased morbidity and shorter life span.¹ The risk, burden, and outcomes of kidney disease are suffered disproportionately by Indigenous peoples who are subjected to many adverse social determinants of health besides suffering from the ongoing destructive impact of colonialism in some settings. A call to action to reduce kidney disease risk and improve outcomes among Indigenous peoples around the world is imperative. Kidney care services targeted to disease risk reduction and enhanced access to optimal

care need to be culturally appropriate and acceptable to Indigenous peoples whose world view of health and wellbeing tends to be more holistic and culturally intertwined than the typical western concepts of illness. Several initiatives have been launched around the world to meet this goal. We present perspectives from 3 national territories as examples of these efforts to further draw global attention on the emergent need for high quality kidney care delivery models in Indigenous communities across the globe.

Perspective from Canada

In Canada, the term “Indigenous peoples” refers to 3 groups—First Nations people, Métis, and Inuit representing a socioculturally diverse community with over 70 Indigenous languages, over 600 First Nations, Métis, and Inuit groups.¹ The Indigenous population is one of the largest among countries that share a similar colonial history such as Australia and New Zealand. Recent estimates show that 1.8 million people identified as Indigenous, accounting for 5.0% of the total Canadian population, a proportion higher than that of Australia (3.8%) but lower than in New Zealand (16.5%). The colonial history of Canada as in many other places across the world has profoundly impacted Indigenous people's sociocultural paradigm, predisposition to disease and limited access to optimal care. Being Indigenous in Canada dramatically increases the likelihood of having CKD and/or risk factors, particularly type 2 diabetes mellitus, hypertension, and cardiovascular disease because of economic factors, lower average incomes, sociopolitical stressors such as structural violence, and policies and practices rooted in

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colonialism. Critical systemic barriers to improving Indigenous patient experiences, kidney health, and access to care include a lack of access to primary care, specialist care, and public health services; limited screening (case finding) and patient tracking; lack of culturally aware and safe care providers, supports, and practices leading to cultural disruption and systemic racism, poor patient-provider relationships leading to mistrust; and a lack of alignment with Indigenous-based health and wellness approaches and knowledge. These barriers affect diagnosis (often at more advanced stages of illness); limit the ability and/or willingness of Indigenous individuals to connect to care providers and consistently follow recommended treatment; impact their mental, spiritual, emotional, and physical well-being; and inevitably result in disproportionately poorer health outcomes that negatively impact patient longevity, quality of life, and their ability to fully participate in family and community life.

Perspective from Australia

Australia is home to ~1 million Indigenous peoples who comprise 3.8% of the population. Australia's Indigenous peoples are 2 distinct cultural groups comprising of Aboriginal and Torres Strait Islander people.² There is great diversity within these 2 broadly described groups with over 250 different language groups.² Approximately 41% of Indigenous peoples live in major cities as compared to 73% of non-Indigenous peoples, and 15.4% live in remote Australia as compared to 1.4% non-Indigenous Australians.²

Indigenous Australians are younger with median age of 24.0 years and have approximately 8 years shorter life span than non-Indigenous Australians.² For the

Indigenous peoples, the risk of poor health begins antenatally and continues lifelong. About 14% of babies born to Indigenous women are born premature and 12% have low birthweight (<2.5 kg) as compared to 8.4% and 6.4%, respectively, in rest of the population.² Prematurity and low birthweight are risk factors for chronic diseases, including type 2 diabetes mellitus, hypertension, and CKD. Subsequent, related, second hits, including obesity, type 2 diabetes mellitus and history of acute poststreptococcal glomerulonephritis increase the risk of CKD, which occurs in 1 in 5 Indigenous Australians, compared to 1 in 10 Australians in general.³ More concerning, data suggest that the CKD burden begins early and is rising.⁴

Multiple barriers to accessing kidney care include inadequate provision of healthcare in the regional and remote communities, thus incurring travel time and cost burden to access health services, lack of cultural understanding by the health staff, racism, language barriers, and worry of dying away from "country."⁵

Perspective from Argentina

In Argentina, the National Registry of Indigenous Communities recognizes 34 First Nation peoples spread all over the country, representing 2.38 % of the total population.

The Argentine Government covers kidney replacement therapy for every citizen. Ethnicity is not included in the National Dialysis and Transplant Registry or any national identity documents. A health program targeted at First Nations is only available in 2 communities of Chaco Province, the Qom and Wichi,⁶ a region with the lowest economic ranking in the country. Of the 1.1 million people in the province, 4% identified as

First Nations (Qom, Wichi and Mocovi); a people whose culture is often described as nomadic and hunter-gatherers with an oral-agrapha language. A high burden of kidney disease markers and risk factors are found in these communities, particularly proteinuria, present in 1 in 4 people, associated with a high burden of hypertension, obesity, and type 2 diabetes mellitus in 1 study.⁷ Specific barriers to optimal kidney care are mainly cultural and linguistic. The concepts of prevention, risk factors, and the semiotics of words such as hypertension, diabetes, obesity, and kidney damage are not part of their world view. These people are often hesitant to leave their communities to access care in remote hospitals.

Call for Action

The effects of colonialism and systemic racism in countries such as Canada, Australia, and elsewhere restrict Indigenous peoples' rights to survival, cultural expression, and economic development. Given the similar barriers to kidney health experienced by Indigenous peoples globally, there is a clear need for strategies to address the social determinants of health and enhance uptake of kidney health promotion and disease prevention in these communities.

Government and International Policy Initiatives

One key initiative would be formal adoption of the United Nations Declaration on the Rights of Indigenous Peoples by the Federal governments. Renal Societies can promote Indigenous peoples' kidney health as core functions of nephrology specialty practice. Enabling those 2 actions will improve kidney health at level of public and environmental health and systematically equip nephrology to practice Indigenous-preferred and anti-colonial care.

National Health Promotion Efforts Toward Optimal Kidney Health and Disease Prevention

As an example, the National Kidney Check program in Canada has been widely implemented to facilitate early identification and management of CKD and/or risk factors.⁸ Participants receive risk-based treatment plans and referrals to primary care and specialty care within their own communities. Scaling up similar prevention programs, coupled with enhanced access to home dialysis therapies and kidney transplantation could improve kidney care across Indigenous population groups.

Community Engagement and Development of Integrated Care

As prevention is important to reduce CKD and its complications, it is also critical to have well-designed approaches to the provision of dialysis and transplantation, which must be culturally appropriate and acceptable to the communities. In Australia, the recommendations for culturally safe and clinical kidney care for First Nations Australians (an inaugural guideline), the National Indigenous Kidney Transplant Taskforce, and funding of very remote hemodialysis infrastructure are key

examples of these important initiatives.^{5,9} In addition, established concepts for behavior change could be leveraged to raise awareness about kidney health among the Indigenous communities, possibly aligned with events such as World Kidney Days.^{S1}

A Well-Trained Sustainable Indigenous Workforce

This will enable delivery of culturally safe care and support self-determination of the local communities. Multiple efforts are now geared toward this, including the Indigenous health policy of Australian government guided by the National Aboriginal and Torres Islander Health Plan 2013-2023,^{S2} and the First Nations Health Authority (FNHA) in Canada’s 2-eyed seeing approach of improving health services and outcomes.^{S3} This provincial organization is the first of its kind in Canada and serves as a model for the other jurisdictions (Figure 1).

Ensuring Access to Basic Technology for Diagnosis and Monitoring

This is an important issue noted in Argentina where over 10,000 primary care centers lacked basic facilities to detect CKD and/or risk factors, contributing to delays in

diagnosis and treatment in the Indigenous communities.

POSITIONING

SC is a pediatric nephrologist. She works as a Senior Staff Specialist and clinician researcher at the Sydney Children’s Hospital, Sydney (Gadigal country), Australia since mid-2023. Prior to this, she was based in Darwin (Larrakia country), Northern Territory, Australia from 2017-2023 and initiated and led the pediatric nephrology service in the Northern Territory. MEVB is President of Argentinian Northeast Kidney Foundation. AB is a Professor of Medicine at the University of Alberta, and Consultant Nephrologist at the University of Alberta Hospital. He is the Project Lead for *Kidney Check*, a national initiative in Canada targeted to early detection and management of diabetes and kidney disease in Indigenous communities, being run under the auspices of Can-SOLVE CKD Network. He is also co-chair of the ISN Global Kidney Health Atlas. HC’s ancestry is Blackfoot and originates from the Piikani Nation Reserve in southern Alberta, Canada. A recent recipient of the Order of Canada (2023), and a recipient of the Queen Elizabeth II Diamond Jubilee Medal, the 125th Anniversary of the Confederation of Canada Medal, and the Long-Service Award from the Government of Canada for 25 years of service. JTH is a Torres Strait Islander woman (Wagadagam tribe), a nephrologist and clinician researcher, mentor, and Indigenous Health Systems Innovator based on Larrakia Country (Darwin, Northern Territory, Australia).

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First Nations Perspective of Wellness

- A visual expression of the First Nations Perspective on Wellness – the way it has always been.
- Passed down from our Elders and traditional healers.
- Wellness belongs to every human being and their reflection of this Perspective will be

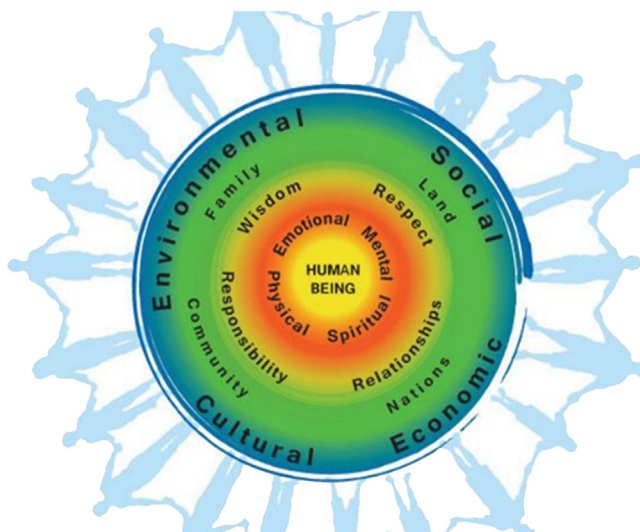


Figure 1. First Nations perspective on health and wellness (fnha.ca).

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SUPPLEMENTARY MATERIAL

[Supplementary File \(PDF\)](#)

Supplemental References

REFERENCES

1. Anderson I, Robson B, Connolly M, et al. Indigenous and tribal peoples' health (The Lancet-Lowitja Institute Global Collaboration): a population study. *Lancet*. 2016;388:131–157. [https://doi.org/10.1016/s0140-6736\(16\)00345-7](https://doi.org/10.1016/s0140-6736(16)00345-7)
2. First Nations people: overview. Australian Institute of Health and Welfare. Published 2022. Accessed January 4, 2024. <https://www.aihw.gov.au/reports-data/population-groups/indigenous-australians/overview>
3. Hoy W, Mathews JD, McCredie DA, et al. The multidimensional nature of renal disease: rates and associations of albuminuria in an Australian Aboriginal community. *Kidney Int*. 1998;54:1296–1304. <https://doi.org/10.1046/j.1523-1755.1998.00099.x>
4. Chaturvedi S, Ullah S, LePage AK, Hughes JT. Rising incidence of end-stage kidney disease and poorer access to kidney transplant among Australian Aboriginal and Torres Strait Islander children and young adults. *Kidney Int Rep*. 2021;6:1704–1710. <https://doi.org/10.1016/j.ekir.2021.02.040>
5. Hughes JT, Owen KJ, Kelly J, et al. Cultural bias in kidney care and transplantation: review and recommendations to improve kidney care for Aboriginal and Torres Strait Islander people. *Med J Aust*. 2023;219(suppl 8):S11–S14. <https://doi.org/10.5694/mja2.52110>
6. Bianchi M, Velasco G, López G, Cusumano AM. Factores de riesgo cardiovascular y renal, y perfil socio-económico en individuos de la etnia wichi de “El Impenetrable”, Chaco, Argentina. *Rev Nefrol Dial Trasplant*. 2020;40:210–220.
7. Bianchi ME, Farías EF, Bolaño J, Massari PU. Epidemiology of renal and cardiovascular risk factors in Toba Aborigines. *Ren Fail*. 2006;28:665–670. <https://doi.org/10.1080/08860220600925750>
8. Curtis S, Sokoro A, Martin H, et al. A comprehensive quality assurance platform in Canada for national point-of-care chronic kidney disease screening: the kidney check program. *Kidney Int Rep*. 2021;6:513–517. <https://doi.org/10.1016/j.ekir.2020.11.031>
9. National Indigenous Kidney Transplantation Taskforce. Accessed January 4, 2024. <https://www.niktt.com.au/>