



## Addressing Inequities in Kidney Care for Indigenous People in Canada

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JASN 33: ●●●-●●●, 2022. doi: <https://doi.org/10.1681/ASN.2022020215>

Indigenous Canadians experience worse clinical and patient-oriented outcomes compared with the general population, including increased rates of diabetes, hypertension, CKD, and kidney failure. These inequities become more pronounced with increasing rurality. Compared with the general population, rates of CKD are two- and three-fold higher for rural and remote dwellers, respec-

### **Indigenous Canadians experience worse clinical and patient-oriented outcomes compared with the general population**

tively, and rates of diabetes four- and six-fold higher.<sup>1</sup> Driving these poor outcomes are social inequities derived from intergenerational effects of institutionalized racism that rural and remote dwellers disproportionately face, such as poverty, food insecurity, and poor living conditions.<sup>2,3</sup>

These social determinants of health are compounded by geographically reduced access to primary and nephrology care specialists, and by a wider growing nationwide shortage of physicians (family medicine and specialty care providers), leaving fewer physicians to practice in already underserved communities. Rural and remote dwellers more often present to nephrology care late in their disease course, resulting in less time for disease-modifying treatments, more unplanned dialysis starts, lower uptake of home dialysis modalities, higher rates of complications, and early mortality.<sup>4,5</sup> Additionally, individuals are often forced to leave their

communities for specialty care. Many who reach dialysis must indefinitely relocate to urban centers for in-center dialysis due to a shortage of dialysis spots in their home communities, or because of an absolute absence of dialysis units. A novel restructuring of care provision within rural and remote communities in Canada is urgently needed, with the ultimate goal of prioritizing equal access to

primary and preventive care for chronic diseases by introducing new resources and leveraging existing ones to support the delivery of care within communities, and improving cultural safety and competency in care. Here, we describe current efforts targeted at achieving these goals, and present a roadmap to achieving equal access for chronic disease care for Indigenous Canadians in the next 10 years (Figure 1).

### **POINT-OF-CARE DIAGNOSTICS FOR EARLY IDENTIFICATION OF CHRONIC DISEASE**

Given reduced access to resources and systemic barriers that often hinder the early detection of CKD in high-risk Indigenous communities, active surveillance programs offering point-of-care diagnostics are cost-effective approaches for identifying undetected or untreated

CKD and its risk factors.<sup>6</sup> In the Canadian Kidney Check program, clinical teams hold free screening sessions using mobile point-of-care testing equipment for hypertension, diabetes, and CKD in rural and remote Indigenous communities for individuals aged  $\geq 10$  years.<sup>7</sup> The program operates on a screen, triage, and treat paradigm; individuals who are screened receive their results and education in real-time, and are triaged according to their personalized kidney failure risk. To close the loop of care, participants receive risk-based treatment plans and referrals to primary and specialty care. Treatment plans focus on ensuring individuals receive early access to disease-modifying treatments and improved future access to home dialysis modalities and kidney transplantation, helping mitigate the economic and personal effects of in-center dialysis.

The Kidney Check program began as a pilot project that operated in 13 communities in a single province and screened 1700 adults and children. It now includes communities across five Canadian provinces, with plans to screen thousands of individuals. However, a significant challenge of scaling-up is that

Published online ahead of print. Publication date available at [www.jasn.org](http://www.jasn.org).

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health care is federally funded in Indigenous communities, but health care programs are provincially run. Therefore, the standardized screening protocol is adapted through collaboration with provincial stakeholders, which also allows partnerships to form that contribute to program sustainability at a local level. Nevertheless, national coverage is still distant, and recognition of this public health priority of screening for hypertension, diabetes, and CKD in rural and remote Indigenous communities is needed, along with federal funding for sustained active surveillance.

### LEVERAGING CURRENT RESOURCES FOR BETTER CARE

Approximately 40% of registered Indigenous Canadians live on >3100 reserves, mostly in rural or remote locations. The federally funded First Nations and Inuit Health Branch provides preventive services on the reserves. Registered Indigenous people who live off-reserve receive health care services through their provincial health care system, although the First Nations and Inuit Health Branch funds non-insured health benefits to registered Indigenous people regardless of dwelling location. Within Indigenous communities, primary care is delivered through

nursing stations run by nurses or community health workers, with primary care physicians rotating through communities on a visiting schedule.

The established primary care nursing infrastructure in Indigenous communities should be leveraged to allow individuals to present centrally for primary care within their communities, and connect through telehealth with specialists in urban areas. In recent years, the Canadian federal government has started a number of initiatives to improve internet access in rural and remote communities, integrating telehealth into Indigenous communities to improve access to remote specialty and primary care.

Telenephrology is an emerging platform for CKD care that includes office- and home-based telehealth, e-consultations, and provider-to-provider video conferencing. Examples of successful virtual telehealth services include the Manitoba Renal Program, in which in-person visits rotate with telehealth services for rural and remote patients for longitudinal CKD care. Although telehealth can deliver many services to remote Indigenous communities, it cannot completely eliminate access barriers, and requires ongoing infrastructure maintenance. Additionally, provincial and federal government should continue to strive to build better access to primary

care within communities. Offering incentives tied to multiyear contracts, such as increased salaries, scholarships, and loan repayment programs, have increased workforce recruitment and minimized staff turnover.

For patients transitioning to dialysis, the burden of relocating to urban areas is high. A “Home Dialysis First” policy<sup>8</sup> is both cost effective and considerate of quality of life, and supports people to receive CKD education, training, and assistance with home dialysis treatments, allowing individuals to stay within their own communities.<sup>9</sup> Continued success of the program requires significant investments in homecare options, along with paid support for family and community caregivers.

### CHANGING THE CULTURE OF CARE

Indigenous people living in urban areas have geographically better access to care, but are also at significantly increased risk of poor outcomes compared with the general population.<sup>10</sup> Social, economic, and cultural barriers deeply rooted in generations of systemic racism hinder Indigenous people from accessing preventive care. Ensuring cultural safety and competency in health

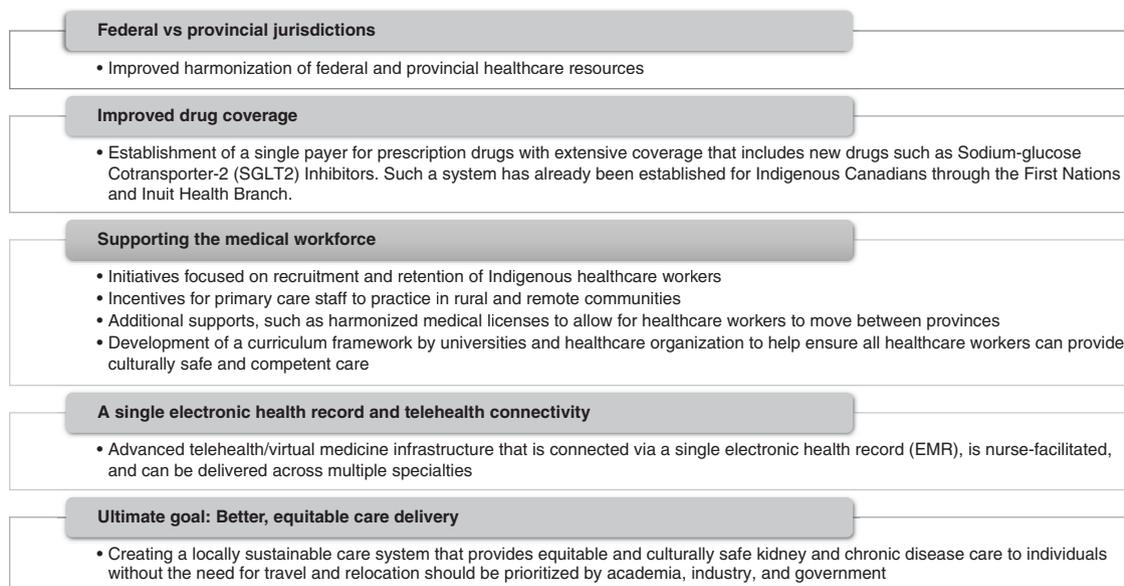


Figure 1. Roadmap for achieving equal access for chronic disease care for Indigenous Canadians.

care are crucial cornerstones in the pathway toward reconciliation. Indeed, recognition of this is ongoing.

In 2019, all 17 Canadian medical schools committed to addressing anti-Indigenous racism in health care, including adopting Indigenous health curricula. Additionally, health care systems across Canada have implemented mandatory Indigenous cultural competency programs for health care workers, and commonly include Indigenous traditions and practices in hospitals. However, of the almost 94,000 specialist and general practitioners in Canada, <1% identify as Indigenous, although >4.5% of the Canadian population are Indigenous. Over the past two decades, a growing number of Canadian universities have launched initiatives to recruit Indigenous students to health care degree programs, reserving admissions spots for Indigenous students and providing supports before and throughout the duration of the program. These efforts ensure health care providers better represent the populations they serve, and mark an important step toward equity in Indigenous health care (Figure 1).

We believe the individual components required to provide equitable care to Indigenous people with chronic disease are now proven, but not yet scalable. We continue to call on academia, industry, and government to partner and deliver on the promise of equal care for all Canadians, irrespective of race, ethnicity, or location.

## DISCLOSURES

N. Tangri reports having consultancy agreements with Healthlogic, Mesentech Inc., PulseData Inc, Renibus, and Tricida Inc.; reports

having an ownership interest with Clinpredict, Healthlogic, Klinrisk, Mesentech Inc., PulseData Inc., and Renibus Tricida Inc.; reports receiving research funding from AstraZeneca, Bayer, BI-Lilly, Janssen, Otsuka, and Tricida Inc.; reports receiving honoraria from AstraZeneca, Bayer, BI-Lilly, Janssen, Otsuka Pharmaceuticals, and Pfizer; and reports having an advisory or leadership role with Mesentech, Pulsedata Inc., Renibus, and Tricida Inc.; and reports other interests or relationships with the National Kidney Foundation, and as Founder of Clinpredict Klinrisk. P. Komenda reports having consultancy agreements as Chief Medical Officer, Quanta Dialysis Technologies; reports having an ownership interest in Quanta Dialysis Technologies; reports receiving research funding from AstraZeneca, Baxter, and NxStage; reports receiving honoraria from AstraZeneca, Boehringer Ingelheim, Janssen, Otsuka, and Quanta; and reports having other interests or relationships with the Canadian Society of Nephrology Executive, Chronic Disease Innovation Centre, and Seven Oaks Hospital Foundation Council. The remaining author has nothing to disclose.

## FUNDING

Kidney Check is funded by the Canadians Seeking Solutions and Innovations to Overcome Chronic Kidney Disease Network, which is supported by the Canadian Institutes of Health Research under Canada's Strategy for Patient Oriented Research Grant 20R26070.

## AUTHOR CONTRIBUTIONS

O. Harasem iw wrote the manuscript drafts; P. Komenda was responsible for the funding acquisition and project administration; N. Tangri conceptualized the manuscript idea and provided supervision; and P. Komenda and N. Tangri reviewed and edited the manuscript.

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