

Diabetes care in First Nations populations in British Columbia

More, not less, should be done to mitigate the negative impact of diabetes on Indigenous people, especially when it comes to Pharmacare coverage for guideline-recommended therapies.

ABSTRACT: Indigenous populations are disproportionately affected by diabetes, as seen in predictions that one in two Indigenous people in their 20s will develop diabetes at some point in life. The health care services that Indigenous people receive will vary greatly and will depend on whether they live on or off reserve. In 2013 the First Nations Health Authority assumed the programs, services, and responsibilities formerly handled for Indigenous people in British Columbia by Health Canada. Two innovative programs that have been successful in addressing the epidemic of diabetes in First Nations populations in BC are the Diabetes and My Nation program and the mobile diabetes telemedicine clinic program. A significant challenge to care delivery has arisen since October 2017, when the First Nations Health Authority joined BC Pharmacare and the new Plan W formulary was introduced. Plan W severely limits or denies access to diabetes medications that were previously covered, including gliclazide, repaglinide, some DPP-4s, all SGLT2s, insulin glargine, insulin detemir, and rapid insulins. This means Indigenous British Columbians do not have ready access to many guideline-recommended therapies that can mitigate the negative impact of diabetes.

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The estimated global prevalence rate of type 2 diabetes is 8.8%,¹ with Indigenous people being disproportionately affected.² In Canada, the prevalence rate in Indigenous adults younger than age 35 is over 50.0%, and the lifetime risk of diabetes at age 20 is estimated at 75.6% in men and 87.3% in women.³ It is predicted that one in two Indigenous people in their 20s will develop diabetes at some point in life.³

The social determinants of health play a major role in the development of chronic diseases such as diabetes. Colonization is recognized worldwide as the most significant social determinant of health.^{3,4} Other social determinants affecting diabetes in First Nations include poverty, isolation, poor access to care, food insecurity, obesity, and lack of health education. Risk is compounded by lifestyle habits such as smoking, low levels of physical activity, and unhealthy eating habits that contribute to high rates of obesity.⁵⁻⁷ Further, urbanization means that food is no longer obtained by traditional hunting and gathering methods but is bought from a local commissary stocked with high-carbohydrate, energy-dense prepared foods promoted by ubiquitous advertising.

Indigenous health care in BC

First Nations populations in BC may receive different health care services based on whether they live on or off reserve. Both on-reserve and off-reserve health care may be supported by clinics, but there are major differences in the services provided depending on the particular clinic and on the size and location of the community (urban, semi-urban, or remote). Larger clinics may have physicians in attendance, while smaller clinics tend to be staffed by nurses or community health care workers. There is high physician turnover in clinics serving First Nations communities and a lack of Indigenous caregivers with whom community members can identify and from whom they will accept advice. It is uncommon to find Indigenous physicians or nurses staffing most of these clinics, and Indigenous patients are often seen by non-Indigenous physicians in nearby non-First Nations communities. This is of consequence, since many Indigenous people have had adverse experiences with authorities who are less able to provide culturally appropriate assistance.

In 2013 the First Nations Health Authority (FNHA) assumed the programs, services, and responsibilities

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formerly handled for Indigenous British Columbians by Health Canada's First Nation and Inuit Health Branch (FNIHB) and the Non-Insured Health Benefits (NIHB) program. Since then, FNHA has administered programs for all status Indigenous people in the province to ensure they have access to the health and wellness programs provided for other citizens. An Indigenous person residing either on or off reserve has access to care providers throughout the province, as well as access to a different list of medications and services than non-Indigenous people.

In October 2017 FNHA joined BC Pharmacare and the new plan Plan W formulary was introduced.⁸ While FNHA has promoted this transition to a 100% paid plan for Indigenous people as a positive step, Plan W in fact severely limits or denies access to diabetes medications that were covered previously,⁹ including gliclazide, repaglinide, some DPP-4s, all SGLT2s, insulin glargine, insulin detemir, and rapid insulins. This is unfortunate, as Indigenous people have a significant problem with obesity and prediabetes as well as diabetes, and GLP-1s (which are not listed by either BC Pharmacare or NIHB) and SGLT2s are the only medications that assist in weight reduction as well as glycemic control while providing proven cardiovascular protection.¹⁰⁻¹³ Moreover, combination therapies that enhance adherence and often provide reduced costs also have restricted coverage.

Initiatives in diabetes care delivery

Support for diabetes care delivery to First Nations populations in BC has come from various programs, including the Aboriginal Diabetes Initiative (ADI), introduced by Health Canada and now administered by FNHA. This program provides funding to 196 of 203 on-reserve communities.

Two other successful initiatives in BC are the Diabetes and My Nation program and the mobile diabetes telemedicine clinic program.

Diabetes and My Nation

The Diabetes and My Nation program (www.diabetesandmynation.com) addresses the complex problem of diabetes through education in local community schools, physical activity programs proposed by local community members, "circles of diabetes care" that emphasize the importance of glucose monitoring to take ownership of the disease, and long-term follow-up. When the effectiveness of this program was compared with the effectiveness of diabetes care in a non-Indigenous local community provided by the same family physicians, the outcomes in the First Nations community were superior.¹⁴

Mobile diabetes telemedicine clinic

The mobile diabetes telemedicine clinic program has provided consultative care in the past 5 years to over 4000 First Nations patients, many living in remote locations. Established in 2003 and expanded in 2009 to cover almost all First Nations communities in northern and southern BC, this program is delivered by a team consisting of one or two nurses who are certified diabetes educators, a clerk, and a vision technician. Currently two teams provide these mobile diabetes telemedicine clinics: Carrier Sekani Family Services and Seabird Island Band. The team visits requesting communities to see those people known to have diabetes who wish to receive an in-depth health status evaluation, which includes a full history, physical examination, and medication review using the Virtual Diabetes Program EMR, which is oriented specifically to First Nations clients.¹⁵

The patient's ability to take charge of his or her own diabetes self-care is assessed and a full laboratory evaluation is performed by point-of-care tests that include fasting or random blood glucose, hemoglobin A1c, a full lipid profile, and urinary microalbumin/creatinine ratio, liver function tests, and full visual field retinal photographs. All laboratory tests are rigidly quality controlled (supported by CEQAL Inc. laboratories). Reports, including recommendations, are generated by the nurses and vision technician and are then uploaded to a secure Internet site¹⁵ and accessed by endocrinology and ophthalmology consultants. A complete report containing recommendations for improved care is generated and transmitted to family physicians and community health units. Wherever possible, follow-up contact is made with the patients themselves, as well as their family physicians and other consultants. Efforts are made to see the same patients a second time within the subsequent 6 months to 2 years, depending on resources, and episodically thereafter. The most significant aspect of these assessments is that they include extensive patient education in healthy eating, the importance of physical activity, glycemic targets, and advice regarding the risks of complications and methods of avoiding such complications. Aspects of self-care are emphasized, and a website¹⁶ provides educational support for both patients and community health care workers.

These annual assessments indicate that while obesity is a major baseline problem, many other indicators improve over subsequent clinic visits, including blood pressure levels, A1c levels, lipid levels, and use of antihypertensive ACE inhibitors or ARBs and statins. The patient education aspect is particularly appreciated

and it is clear that this improves patient participation in care.

The success of the mobile clinic program may be seen by comparing diabetes care results in BC with those found in the rest of Canada. For example, in the Diabetes Mellitus Status survey,¹⁷ 49.6% of diabetes patients in Canada had an A1c level lower than 7.0% compared with 54.0% of First Nations diabetes patients in northern BC and 54.9% in southern BC.¹⁸ According to this metric, Indigenous people served by the clinic program in multiple BC communities with many challenges had glycemic outcomes superior to those in the rest of Canada.

The BC mobile telemedicine clinic approach has proven to be effective and appreciated in rural and urban settings, and could be equally effective in non-First Nations communities, particularly as it is an efficient use of resources.

Challenge to diabetes care delivery

A significant challenge to diabetes care delivery in BC is the limitations on access to medications. After lifestyle changes are introduced to patients newly diagnosed with type 2 diabetes, optimal first-line therapy with metformin begins. This is then followed by or combined with additional oral agents that promote glycemic control, weight loss, and reduction of adverse outcomes. Three different classes of these second-line agents provide this and are recommended by clinical practice guidelines: DPP-4s, SGLT2s, and GLP-1s.^{19,20} BC has one of the most limited formularies in Canada, offering only restricted coverage for two DPP-4 agents, and no coverage for GLP-1s. BC is also the only province in Canada to provide no coverage for any SGLT2 agents. In addition, BC's restriction on insulin choice causes those who need basal insulin

to take two less-reliable insulin injections per day, and to use less-reliable short (rapid-acting) insulins before meals. FNHA's decision to restrict drug coverage means that First Nations people will lose access to many guideline-recommended therapies. While lifestyle changes are clearly

betes in First Nations populations in BC are the Diabetes and My Nation program and the mobile diabetes telemedicine clinic program. Unfortunately, the adoption of Pharmacare Plan W by FNHA in 2017 now severely limits or denies access to diabetes medications that were previ-

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important, we need to help people adhere to recommended care, and placing any obstacles in their way will have deleterious consequences.

Diabetes places an enormous burden on First Nations in BC by decreasing quality of life and productivity, and increasing morbidity, premature mortality, and health care costs. In a wealthy province such as BC more, not less, should be done to mitigate the negative impact of this disease on Indigenous people.

Summary

Indigenous people are disproportionately affected by diabetes, and the care they receive will depend on whether they live on or off reserve. In BC the First Nations Health Authority is responsible for programs and services formerly handled by Health Canada. Two innovative initiatives that have helped address the epidemic of dia-

ously covered, which means Indigenous British Columbians do not have access to many guideline-recommended therapies. [BGMJ](#)

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