

PrEP and the Prevention Revolution: Why Naturopathic Doctors Must Lead in Expanding HIV Prevention



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Human immunodeficiency virus (HIV) continues to pose a global public health challenge, despite decades of progress in treatment and prevention. In Canada, the HIV incidence rate remains concerning, with gay, bisexual, and other men who have sex with men (MSM) constituting the highest proportion of new infections. Pre-exposure prophylaxis (PrEP) is a powerful tool for reducing HIV transmission risk. It involves the use of antiretroviral medications in HIV-negative individuals. Health Canada approved daily oral PrEP using tenofovir disoproxil fumarate/emtricitabine (TDF/FTC) in February 2016, marking a transformative moment in the nation's HIV prevention strategy. This article argues for a stronger role for naturopathic doctors in the national PrEP landscape to advance equity, public health, and clinical integration.

The cost of managing a single HIV infection across a patient's lifetime is considerable; this includes direct healthcare expenses such as medication, physician services, and hospitalizations, as well as indirect costs from loss of productivity and employment disruptions. These costs range between CAD448,000 and CAD690,000 per person¹. In contrast, the annual cost of PrEP per participant in Canada was estimated at CAD12,001, with each infection averted costing about CAD621,390.¹ This cost may initially seem high but is dwarfed by the lifetime cost of HIV treatment. PrEP becomes cost-saving or highly cost-effective, depending on model and adherence. The societal benefits of PrEP extend beyond direct financial savings. As Lachowsky et al. (2019) found in a Vancouver-based study, PrEP not only protects individuals but may also reduce stigmatization and anxiety associated with HIV, especially in communities such as MSM where HIV burden remains disproportionately high.² This psychosocial advantage can facilitate engagement in health care and reduce the long-term burden of mental health comorbidities.

Despite its efficacy, PrEP uptake remains far below optimal levels. Comer and Fernández (2022) highlight that public health systems in the United States have not fully capitalized on PrEP's preventive potential, citing underfunded programs and systemic barriers such as racism, geographic inequities, and lack of provider awareness.³ In the United States, PrEP is indicated for more than

1.2 million Americans, yet fewer than 25% are actually using it. In Canada, data are sparse but consistent with similarly low uptake. Studies in Ontario and British Columbia suggest that stigma, lack of provider knowledge, and systemic barriers impede widespread PrEP access.⁴ Disparities persist along racial, economic, and geographic lines. According to Sun et al. (2022), PrEP awareness and willingness to use PrEP among MSM vary significantly by region and income level⁵. While awareness has improved in high-income countries (HICs), actual access is still hampered by cost, cultural stigmatization, and insufficient public health infrastructure. In the United States, the "Ending the HIV Epidemic" (EHE) initiative positions PrEP as a linchpin in HIV prevention. However, as Comer and Fernández (2022) argue, public health departments have struggled to mount an equitable and coordinated PrEP rollout, particularly for communities of colour and rural populations.³

Canada faces similar shortcomings. Lachowsky et al. (2019) found that even in British Columbia—where PrEP is publicly funded—many MSM remain unaware of their eligibility or face difficulty accessing culturally safe primary care². Despite the promise of PrEP, affordability remains a core issue. Without public healthcare coverage, TDF/FTC can cost CAD1,700 to CAD3,500 CAD per month. Even though a generic TDF/FTC is available at roughly \$26 per month in the United States, Canada's access remains inconsistent.³ Economic evaluations consistently show that universal PrEP programs are cost-effective when targeted at high-risk populations. Yet public health delivery mechanisms have not kept pace with need. Rural, racialized, and 2SLGBTQIA+ populations remain underrepresented in PrEP programs due to systemic inequities and limited reach of traditional healthcare systems.^{2,4}

PrEP involves nucleoside analogue antiretroviral medications that inhibit viral reverse transcriptase, thus preventing HIV replication in the host. The two most common regimens are:

- **TDF/FTC (tenofovir disoproxil fumarate/emtricitabine)** – the standard, most thoroughly studied oral PrEP option.

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- **TAF/FTC (tenofovir alafenamide/emtricitabine)** – a newer formulation with a better renal and bone safety profile.

Additionally, **cabotegravir long-acting injectable (CAB-LA)** has been FDA-approved and is expected to become available in Canada. CAB-LA is injected every 2 months, improving adherence over daily pills, which is an important benefit since efficacy studies using oral routes show greater than 90% reduction in HIV transmission with proper adherence.

Short-term side effects of PrEP include nausea, headaches, and gastrointestinal upset, which are generally mild and transient. Long-term risks, with TDF especially, include:

- **Renal dysfunction:** necessitating quarterly creatinine/eGFR monitoring. Tenofovir is entirely eliminated via the kidney without hepatic metabolism or elimination, and studies have shown that over time eGFR can decrease somewhat with longer-term use. Use of recreational drugs, a high protein diet, or protein supplements while using tenofovir can also decrease eGFR.
- **Decreased bone mineral density:** particularly concerning for those with osteoporosis or risk factors. Tenofovir is associated with small decreases in bone mineral density with longer-term use, though these decreases are quite limited.

A recent meta-analysis that included 15,678 participants across 13 RCTs found no difference in severe adverse effects between PrEP and placebo arms, with a small but nonsignificant increase over placebo with respect to fractures and creatinine elevations.⁶ A large retrospective cohort study in the United Kingdom observing PrEP users found that 114/14,000 experienced decreases/low eGFR; a large proportion of these could improve eGFR by decreasing protein supplementation or discontinuing recreational drug use.⁷ TAF has a better renal and bone side effect profile but can be associated with hyperlipidemia, and serum lipids should be monitored yearly.⁸ On-demand or “2-1-1” PrEP (taking doses around sexual activity rather than daily) has also proven effective, particularly among MSM. However, it is not recommended for all populations and requires thorough patient education. Individuals with comorbidities (e.g., diabetes, hypertension) may require careful risk-benefit analysis. Regular monitoring (renal panels, HIV testing, sexually transmitted infection [STI] screening) every 3 months is critical to safe, effective PrEP use. Persons with hepatitis B can also experience severe hepatitis flares if PrEP is ceased and hepatitis B is not treated.⁷

Naturopathic doctors, with their holistic, preventive approach and emphasis on patient-centred care, are uniquely positioned to fill gaps in PrEP access, support adherence, manage side effects, and advocate for marginalized communities. Naturopathic doctors could help bridge these gaps in access, particularly in provinces where NDs are regulated to provide primary care services. They often practice in underserved regions and have strong community ties. NDs, with their expertise in preventive and supportive care, can also play an essential co-management role.

Naturopathic medicine is regulated in six Canadian provinces, with varying scopes of practice. While NDs can't currently prescribe PrEP directly, they can:

- **Screen** patients using risk indices like the HIRI-MSM.
- **Refer** to prescribing physicians and sexual health clinics.
- **Monitor** side effects and lab results.
- **Support** adherence using integrative tools.

Culturally competent, trauma-informed care is a hallmark of naturopathic training, which is especially relevant for marginalized groups such as MSM, trans individuals, and racial minorities. By embedding PrEP education and risk assessment into routine care, NDs can become vital access points. Adherence remains a critical determinant of PrEP effectiveness. NDs can enhance outcomes by:

- **Nutritional strategies:** Support for renal (hydration, antioxidant-rich foods), bone (vitamin D, calcium), and gut health (probiotics).
- **Herbal therapies:** Ginger, peppermint, and chamomile for gastrointestinal (GI) tolerance.
- **Lifestyle modifications:** Sleep hygiene, stress management, and sexual health counseling.
- **Educational tools:** Pill packs, mobile reminders, and check-in systems tailored to patient preferences.

Importantly, NDs can also help dismantle stigma and misinformation around PrEP in holistic care settings, offering a judgment-free, affirming space for patients to explore prevention. PrEP represents a seismic shift in HIV prevention—one that is underutilized, especially in Canada. Naturopathic doctors, with their commitment to patient-centred, preventive, and holistic care, are well-positioned to lead a new frontier in PrEP delivery and advocacy. Their involvement could address barriers in education, stigma, adherence, and accessibility. As Canada works to end the HIV epidemic, integrating naturopathic care into PrEP pathways is both an ethical imperative and a practical solution.

Resources:

- <https://smartsexresource.com/resources/hiv-prep-toolkit-for-clinicians/>
- <https://smartsexresource.com/resources/hiv-incidence-risk-index-for-msm-hiri-msm/>
- <https://smartsexresource.com/sexually-transmitted-infections/sti-basics/prep/>

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