Community-based buprenorphine treatment for opioid use disorders: A guide for Indigenous communities

This guide discusses opioid addiction and its treatment, and describes how community buprenorphine programs work.

Background: Opioid use disorders and treatment

Why are so many people in Indigenous communities addicted to opioids?

Intergenerational trauma, like other forms of trauma, is often a contributing factor in substance use. People who have endured psychological trauma during childhood often experience long-lasting symptoms of post-traumatic stress disorder: nightmares, depression, anxiety, trouble forming relationships, and low self-esteem. When people first start using opioids, these feelings vanish for a few hours, replaced by feelings of confidence, enthusiasm, energy, and comfort. Unfortunately, the nervous system quickly adapts to these positive feelings, so the person must take a higher dose to achieve the same effect (this is called tolerance). Within a couple of weeks of daily opioid use, people begin to experience frightening withdrawal symptoms, and must now take the opioid every day just to ward off these symptoms. A person who ends up in this cycle has an opioid use disorder: their opioid use has taken over their life.

In small communities, substance use and subsequent addiction can quickly spread from one or two people to their circle of friends, use within the family, and sometimes even to the whole community. In some Indigenous communities in Canada, almost every family has at least one member with an addiction.

Why is it so difficult for people to stop using opioids?

People who take opioids daily experience withdrawal symptoms when they go without the medication: muscle aches, nausea, insomnia, anxiety, depression, and strong cravings. Withdrawal can cause terrible distress – some patients attempt suicide if they cannot obtain opioids to relieve their symptoms. The constant fear of withdrawal is often what keeps people from quitting, even when they know that their opioid use is ruining their life.

What are methadone and buprenorphine?

Methadone and buprenorphine are opioids used as medications to treat addiction. Methadone is taken in orange juice, while buprenorphine is dissolved under the tongue. Unlike other opioids, which reach the brain very quickly and cause an immediate, short-lasting high, methadone and buprenorphine only reach their full effect after two or three hours, and these effects last for 24 hours. As a result, methadone and buprenorphine medications relieve cravings and symptoms of withdrawal for the entire day without causing the same high that other opioids do.

At the beginning of treatment, methadone and buprenorphine are dispensed daily, under the observation of a staff member. This makes it hard for patients to use the medication in a way other than as prescribed, or to share the medication with others. Take-home doses can be given when necessary for medical trips, work, or family obligations. Patients on methadone or buprenorphine are
required to leave regular urine samples, which are tested for methadone or buprenorphine, illicit opioids, and other drugs.

**What’s the difference between methadone and buprenorphine?**

Methadone is a very powerful opioid, while buprenorphine is only a *partial* opioid. Both methadone and buprenorphine are extremely effective at relieving withdrawal symptoms and cravings, but methadone may have more side effects than buprenorphine, such as sedation and risk of overdose. Because it is such a strong opioid, people can overdose if they take even a slightly higher dose of methadone than they are prescribed. For this reason, doctors must have special training to prescribe methadone. Buprenorphine is safer than methadone; it can cause drowsiness and euphoria if it is misused, but fatal overdoses are very rare. Because of its safety, family doctors don’t need any extra training in order to prescribe it, but observed daily doses are still best until the patient is stable and doing well.

**Isn’t giving people buprenorphine or methadone just switching one addicting drug for another?**

When injected, heroin, morphine, hydromorphone, and fentanyl reach the brain within seconds, producing an intense high. These substances leave the brain after a few hours, triggering severe withdrawal symptoms. Most people with opioid use disorders are unable to work, go to school, or look after their family, because they spend the whole day getting and taking the drug in a desperate effort to feel normal and avoid withdrawal.

In contrast, people do not experience euphoria, sedation, or withdrawal after taking methadone or buprenorphine, because the medications take hours to reach their full effect, and the effects last throughout the day until the next day’s dose. Patients on these medications can return to work, school, or their family without any impairment in their thinking or functioning.

**Aren’t methadone and buprenorphine just band-aids? Shouldn’t treatment be based on counselling that addresses the root causes of addiction – trauma, poverty, and despair?**

Psychological counselling is essential for long-term recovery. It is most effective, however, when used in combination with methadone or buprenorphine treatment, which enable people to participate in counselling and treatment activities without being tormented by cravings and withdrawal symptoms.

**How well do buprenorphine and methadone treatments work?**

Extensive research has shown that methadone and buprenorphine treatment programs dramatically reduce opioid use, overdose deaths, and crime, compared to treatments that only provide counselling. The symptoms of opioid withdrawal can be so intense and frightening that if they are not treated medically, most patients relapse quickly, even if they receive excellent counselling and support.

**Why do people have to go to special clinics to get methadone?**

As mentioned above, doctors need to have special training in order to prescribe methadone. There are only about 300 doctors in Ontario who have this special training, and almost all of them work in cities in the south. Many of these doctors work in specialized methadone clinics, which are more efficient than general clinics for the specific kinds of services that methadone doctors give, like supervised urine drug screening and observed daily dispensing. Most patients receive methadone in these clinics, which are usually separate from primary care and mental health services. Many methadone clinics offer
buprenorphine treatment as well; however, because doctors do not need special training to prescribe buprenorphine, it can be prescribed in any setting, not just in urban methadone clinics: in general family medicine clinics, hospitals, prisons, emergency departments, and by solo practitioners in small rural communities.

**Methadone clinics keep patients on methadone for years, and sometimes for life. Doesn’t it make more sense for patients to only be on methadone or buprenorphine for a week or two while they recover from their withdrawal symptoms?**

Most people relapse if they are tapered off methadone or buprenorphine too quickly. This is because withdrawal symptoms – insomnia, anxiety, cravings – can last for months after the last dose of opioids. Also, addicted patients have learned that drugs give instant and complete relief when they feel stressed, lonely, bored, angry, or upset; it can take many months of counselling and hard work to learn new ways of coping with these feelings, to make new friends who aren’t drug users, and to take on new responsibilities with family, work or school that keep people active and busy away from drug use.

Many people are able to taper off methadone or buprenorphine when they haven’t used drugs for at least six months and they’re leading productive, busy lives surrounded by supportive family and friends.

**Some people in my community are attending a methadone clinic in a nearby town. How do I know if this clinic is providing good care?**

Band leaders, addiction counsellors, and family members of addicted patients should ask the following questions about their local methadone clinic.

**Does the clinic provide primary care?** A good program should provide patients with primary care – immunizations, screening for cancer and heart disease, and management of chronic diseases such as asthma and diabetes. If patients have access to primary care in their own communities, then the methadone physician should communicate regularly with the primary care physicians or nurses.

**Does the clinic provide counselling?** As mentioned above, counselling is an essential part of addiction treatment. Patients are not likely to fully recover if they don’t receive counselling and support for the underlying mental disorder that caused the addiction, such as post-traumatic stress disorder, anxiety, or depression.

**Does the clinic help or hinder patients’ return to an active and full life?** The goal of addiction treatment is to help patients live a full and active life. Some methadone clinics require patients to attend the clinic once or twice per week to leave a urine drug screen and get a prescription. These visits can interfere with patients’ work and family lives, because they often involve 4-8 hours of travelling and waiting at the clinic.

The easiest way to answer these questions is to talk to patients in your community about their experiences at the clinic. How often do they have to attend the clinic, and how long does each visit take? How much time does the physician spend with them? Do they get counselling? Does anyone at the clinic talk to them about their emotions, concerns or daily lives? Are their family members allowed to attend appointments and participate in their care? Can they get help for medical problems at the clinic? Overall, do they feel that the physicians and other clinical staff care about them? Are they satisfied with the care they have received?
What should I do if my community doesn’t have access to a clinic that provides good addiction care?

If there are members of your community who would benefit from methadone or buprenorphine treatment but there is no access to convenient, high-quality care, you and other members of your community should consider setting up your own buprenorphine treatment program. Sioux Lookout communities have set up a number of buprenorphine programs over the past several years, and these programs can be used as a model for your community.

**Sioux Lookout programs: Description**

Prior to 2010, Chief and Band Councils and community leaders in northwestern Ontario began to bring attention to the serious issues and impacts of Prescription Drug Abuse (PDA) in their communities. In 2010, the Chiefs of Ontario declared PDA an epidemic and they released the Final Reports on a PDA Strategy. By 2012, a tripartite agreement between provincial, federal and Sioux Lookout Health authorities produced a work plan. Communities in the Sioux Lookout First Nation Health Authority (SLFNHA) region began to plan, develop, mobilize, and govern community-based treatment programs for PDA. Currently there are 22 buprenorphine programs in the Sioux Lookout region, treating approximately 1300 patients. Similar programs also exist in other Treaty 9 communities. While every program is different, they share the following common elements:

**The program team:** Each program team consists of a mental health and addiction worker, a family doctor, a medication dispenser, and an administrator from the Band Council. The team meets regularly, sometimes in consultation with an addiction doctor, to make clinical and administrative decisions about the program.

**Assessment:** Each patient is individually assessed by a doctor (either a local family doctor or a visiting doctor with expertise in addictions), in order to determine whether the patient has an opioid use disorder and/or other mental and physical conditions. The assessment consists of a long interview with the patient, a physical exam, and blood work.

**Buprenorphine prescribing:** After the assessment, if the doctor determines that the patient has an opioid use disorder, they prescribe a daily dose of buprenorphine, adjusting the dose until the patient’s cravings and withdrawal symptoms have resolved.

**Dispensing buprenorphine** Daily dispensing of medication is done by community member dispensers that have been hired by the Band Council to work in the treatment programs. In some communities, nursing station staff or nurses dispense buprenorphine.

**Urine drug testing:** Urine samples are regularly tested for buprenorphine, opioids, and other drugs, using small disposable sticks that are dipped into the urine. Nurses and physicians can conduct these tests, as can trained community members.

**Counselling:** The clinic doctor provides counselling during the assessment and during each clinic visit. Mental health and National Native Alcohol and Drug Abuse Program (NNADAP) workers provide counselling and case management. Some communities have chosen to support and fund counselling programs, which patients attend daily for the first few weeks of treatment. Aftercare workers engage clients in counselling and recovery activities. Many patients also benefit from traditional healers, support from the church, or land-based activities such as gardening. Informal support is also provided
by elders, family members, the band council, friends, and peers who are also in treatment. In some communities, a public ceremony is held for patients on their first day of buprenorphine treatment; the patients are greeted and congratulated by community leaders and family members for beginning their journey toward recovery.

**Tapering and discontinuing treatment:** Patients are discharged from the program if they violate program rules (for example, if they are caught selling their buprenorphine tablets). The buprenorphine dose is tapered when the patient and the treatment team feel that the patient is ready.

**Funding:** The medications are covered by the provincial and federal drug plans. Health Canada funded staff, such as nurses, mental health workers and the NNADAP workers that support the programs. Three funding cycles from Health Canada for PDA treatment support the delivery of the program, including hiring of dispensing and aftercare staff. Outside addiction doctors that visit the community have their travel expenses covered by the College of Physicians and Surgeons of Ontario, and they are paid a daily rate by the Sioux Lookout Regional Health Authority. The costs to the bands are offset by savings in travel costs for patients who would have had to travel by bus to attend a methadone clinic in a nearby city.

**How well do the Sioux Lookout programs work?**

Two papers were recently published in the Canadian Family Physician journal on the buprenorphine programs in Sioux Lookout (see enclosed). The first paper looked at the impact of buprenorphine treatment on one community. It reported that one year after the introduction of buprenorphine treatment, “police criminal charges had fallen by 61.1%, child protection cases had fallen by 58.3%, school attendance had increased by 33.3%, and seasonal influenza immunizations had dramatically gone up by 350.0%. Attendance at community events is now robust, and sales at the local general store have gone up almost 20%.” One community member said that the program “has brought life back to our community, [which] is being restored to the way it used to be before everyone got stuck in addiction.”

The second paper looked at individual patient results in six communities. It reported that 78% of the patients were still in treatment after one year. This compares favourably with a provincial average of only 50%. In two separate analyses, 88% and 90% of urine drug screens were negative for illicit drugs.

The success of the Sioux Lookout programs is probably due to several factors. The whole community participates in and supports the program, patients have a good relationship with the treatment team, and the programs are deeply focused on helping patients return to their community activities and responsibilities. Perhaps most importantly, patients get treatment in their home community, without having to travel to attend an outside clinic.

**If our community set up a community buprenorphine program, what should be done about patients who are already on methadone in an outside methadone clinic?**

Methadone doctors should help patients switch from methadone to buprenorphine if they request it and it is in their best interests. The doctor prescribing methadone and the community doctor prescribing buprenorphine have to work together to organize the switch. Switching from methadone to buprenorphine is not easy, but it can be done successfully in most cases.

**How can our community set up a new buprenorphine program?**
Communities that wish to establish their own treatment program should consult with people who work in the Sioux Lookout programs. Sioux Lookout doctors and nurse practitioners can assist with recruiting, training and mentoring the family doctors in your community, and Sioux Lookout program staff can help train your community’s mental health and addiction workers and dispensers. Administrators can assist with funding and planning.
Abstract
This brief provides an outline to guide the application of Health Canada’s Action Plan for Opioid Misuse with First Nations in Canada.

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Introduction

This quote is an indigenous teaching that conveys a belief that solutions to the challenges we face are accessible through an indigenous worldview and practices from that worldview. We have a collective responsibility as indigenous peoples to ensure we facilitate access to solutions that are meaningful. First Nations in Canada have articulated these solutions, their needs and strengths in the Honouring Our Strengths: A Renewed Framework to Address Substance Use Issues Among First Nations in Canada (Health Canada 2010) and more recently, First Nations have articulated a comprehensive approach to achieving mental wellness for First Nations people and communities through the First Nations Mental Wellness Continuum Framework (Health Canada 2015). The First Nations Mental Wellness Continuum Framework describes the vision for First Nations mental wellness, with culture as the foundation. It emphasizes First Nations strengths and capacities. It provides advice on policy and program changes that should be made to improve First Nations mental wellness outcomes. Achieving meaningful outcomes for First Nations people in Canada is the vision for addressing the opioid crisis and ongoing opioid misuse; that is, action to address opioid misuse must be measured by the extent to which those actions create mental wellness among First Nations. These indigenous based outcomes measures are: Hope, Belonging, Meaning and Purpose.

To achieve some measure of these indigenous defined mental wellness outcomes requires change in the way governments do business. We need more horizontal work across governments and between departments/ministries and with a commitment to First Nations as partners in governing mental wellness.

Health Canada’s Action Plan for Opioid Misuse (Health Canada, 2016)

1. Better informing Canadians about the risks of opioids: new warning stickers, patient information sheets, review of best practices
2. Supporting better prescribing practices: promote prescription monitoring programs, examine pharmacy records, share information with PT licensing bodies, Canada Health Infoway e-prescribing solution
3. Reducing ease access to unnecessary opioids: contraindications for approved opioids, requiring a prescription for low-dose codeine products, mandatory risk management plans for certain opioids
4. Supporting better treatment options for patients: better & faster access to naloxone, expediting the review of non-opioid pain relievers, re-examining special requirements for methadone
5. Improving the evidence base: bringing together experts in the field to discuss how to improve data collection and the Canadian evidence base
First Nations within the Action Plan for Opioid Misuse

1. **Better informing Canadians about the risks of opioids:**

   Greater capacity is required within First Nations governed organizations to develop culturally relevant information on Best Practices that are inclusive of the following:

   a. Use of social media and eHealth solutions for prevention and early intervention aimed at youth and women of child bearing years on the following:
      
      i. Education on fentanyl, Carfentanyl, the chemical W-18 and its analogs
      
      ii. Naloxone
      
      iii. Youth should have access to services specific to their developmental needs and youth need to be included in designing these strategies.
      
      - There are very few providers of addiction treatment services and specifically medical treatment of Opioid Use Disorders who provide youth specific services, or at the very least integrate services adapted to the needs of young people.
      
      - The majority of young people who are actively misusing opioids have concurrent mental health issues, such as anxiety and mood disorders linked to intergenerational trauma.
      
      - Homeless, street involved and marginalized youth often have complex psychological and social issues.
      
      - Two excellent examples of services adapted to the needs of youth are:
        
        o School based program at Dennis Franklyn Cromarty High School in Thunder Bay
        
        o The Breakaway Toronto Opiate Support Team
      
      - An early intervention program that has also had good success is the Buffalo Riders program.
      
      - Support for youth career planning and mentoring is required in the following: mentorship in translating indigenous knowledge into practice, medicine, pharmacy, counselling, community development and harm reduction are necessary to ensure First Nations have the necessary capacity to meet the ever-increasing demand for culturally relevant and meaningful strategies for opioid misuse.
      
      iv. Prenatal care – promotion of harm reduction (Buprenorphine-naloxone) and warnings against withdrawal of opioid risks to fetus
      
      
      vi. Support in Mothering – lactation support, FN culture specific Doula care
b. Promotion of Community Based Treatment as a Best Practice
   i. Land Based Service Delivery Model & Buprenorphine-Naloxone (In development)
   ii. Support is required to decolonize approaches to addictions and mental health care to include Indigenous cultural knowledge and practices by ensuring appropriate funding is in place to contract cultural practitioners, provide training for staff to ensure a respectful multi-disciplinary approach inclusive of cultural practices, and to support indigenous practitioners in understanding the nature of addictive substances.

c. Harm Reduction Strategy requires more education and support to build capacity in First Nations communities and to support community health planning. One example of a community-based harm reduction approach is TsuTina First Nation located just outside Calgary AB who has invested its own source revenue in a community wide harm reduction strategy and is having success stemming the tide of the opioid crisis.

2. Supporting better prescribing practices:
   a. Buprenorphine-Naloxone as first line of treatment for First Nations
   b. Promote Guidelines for First Nations community based opioid treatment with physicians to support them in effectively supporting First Nations people in addressing opioid addiction in a trauma-informed and strengths-based manner (in development)
   c. Support for implementation of a national prescription drug use survey for First Nations Communities (in development)
   d. Capacity developing within First Nations communities to engage in governing opioid misuse treatment and prevention

3. Supporting better treatment options for patients:
   a. Invest in developing primary care within First Nations communities such as supporting nurses in First nations communities to transition to a strength-based approach to primary care and become more involved in supporting communities in their opioid misuse strategies.
   b. Core funding for First Nations governed harm reduction strategies and Land Based Opioid Treatment programs
   c. Fund capacity development within First Nations Communities to support people in opioid agonist treatment to have an active role in community and for the community through employment and skill development
   d. That program funding be flexible enough to allow communities to adjust to dynamic and changing needs and priorities (e.g., diversion of suboxone),
   e. Funding to support “community of practice” for health directors and program staff engaged in addressing opioid misuse to get together at least twice per year to share/collaborate/discuss difficulties and successes.
4. **Improving the evidence base:**

a. If we want to measure the difference we will make in addressing the opioid crisis among Indigenous people in Canada, then this will require us to measure culturally meaningful outcomes. The Native Wellness Assessment (NWA) is an instrument that measures wellness. We need to know what wellness is achieved among First Nations in addition to the number of overdoses, rates of neonatal abstinence syndrome, children placed in child-welfare due to addictions, and the increase in access to opioid agonist therapies. This instrument measures wellness as hope, belonging, meaning and purpose using indigenous culture.

The development of capacity within First Nations communities to measure Hope Belonging Meaning and Purpose is required.

b. We need capacity to support implementation of a national prescription drug use survey currently in development. This survey is structured in modules so that FN communities can choose the data they need and the survey will be available in a national database for First Nations addictions and mental wellness.

Funding is required to implement this survey which will provide us with a necessary resource to measure change over time on the implementation of the Opioid Action Plan.

c. A national addictions information management system has been developed and implemented among the National Native Alcohol and Drug Abuse program and the National Youth Solvent Abuse Program. Funding is required to enhance this national database for increased community access and to support relevant data sharing between systems for a more comprehensive analysis of the change we can achieve in addressing opioid misuse.

d. Opioid surveillance programs are required. For example, support is required for First Nations in Ontario by providing a comprehensive picture and baseline data on opiate prescription trends for the effective planning of appropriate services and supports for affected communities.

e. Dooley et.al (Dooley, 2016) demonstrated positive results for infants whose mothers were in opioid agonist treatment using Buprenorphine-naloxone. Further research is needed to explore the long-term impact of methadone and buprenorphine-naloxone in utero on First Nations children’s mental wellness is needed.
First Nations people in Canada have demonstrated meaningful solutions to the opioid crisis, we now need support to build capacity to effect change and deliver meaningful data that tells the story of the difference we can make.
Abstract
This document provides a brief overview of fentanyl and outlines current strategies to address the issue. It concludes with a broader issue and that is that First Nations governments are challenged with access to resources to support treatment for opioid addiction, and access to naloxone as one method for preventing overdose for fentanyl. There are many more systemic issues that are not addressed in this briefing, including funding to support community based opioid treatment, consistent programs for prevention aimed at women of child bearing years, increased commitment towards effective treatment that focuses on preservation of a mothers right to parent while engaged in treatment for opioid dependence.

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Overview of Fentanyl

Canada is now the highest per capita consumer of opioids in the world,¹ and Ontario has the highest rate of prescription opioid use in the country.²

Fentanyl is a synthetic opioid (narcotic) that is 50 to 100 times more toxic than other drugs such as morphine and 50 times more powerful than heroin. Illicit fentanyl can be found in liquid, powder and pill form.³ Most illicit fentanyl originates from labs in China, which copy chemical formulas from patents filed by pharmaceutical companies. Drug traffickers can also import the chemical W-18 or its analogs, which are not currently illegal, despite their ability to cause a similar opiate effect to fentanyl. Either way, drug traffickers will then use pharmaceutical-grade equipment to press and coat the chemicals to create their fake oxycodone pills. The pharmaceutical company that manufactures oxycodone in Canada changed its formula and its stamp because of illicit marketing which means that every pill stamped with CDN 80 actually contains fentanyl. A lethal dose of fentanyl — just two milligrams — is nearly too small to see, and can be absorbed through the skin and can be lethal.⁴ Fentanyl is reported by police to be mixed with other drugs such as cocaine⁵ and is commonly cut into other street drugs — including heroin, oxycodone and methamphetamine — to make them more potent.⁶

In recent years’ fentanyl popularity grew due to the scarcity of another opiate based painkiller, oxycodone. Variations in fentanyl have increased in number and potency over the last year, along with non-fentanyl opioids like W-18 that have emerged, and will continue to grow for the next 12 to 18 months according to a RCMP report. “While fentanyl continues to pose a high-level threat, the illicit opioid market writ large is evolving at an alarming rate and significantly raising the risk/threat level.” The report says that measures like increasing access to naloxone, increased opioid reporting and early-warning systems will help stem the increase in fentanyl distribution, but won’t stop the market for the drug from increasing.⁷

Carfentanil, is a new synthetic drug grouped with heroin, fentanyl, and oxycodone. What is known as the “super drug” is heroin laced with elephant tranquilizers, and 100 times more potent than fentanyl.⁸

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³ BC RCMP Warning About Recent Drug Overdoses. May 19, 2015 http://bc.rcmp-grc.gc.ca/ViewPage.action?siteNodeId=2130&languageId=1&contentId=42035
Legitimate use of fentanyl has not been without concerns. According to one 2003 study, fentanyl patches are used by patients in a manner that is inconsistent with the standard recommendation in the manufacturers' PI but it was still not as pronounced as was oxycodone HCl controlled-release. Fentanyl is prescribed as patches for chronic pain.

Approaches to Addressing Public Health Emergency: Overdose

Last April, a public health emergency was declared in B.C. because of the overdose spike and the increase of fentanyl. “From January to June, there has been a 74 per cent increase in fentanyl deaths,” said Clark. “That is 371 lives lost.” in BC.

The BC government established a task force with the purpose to:

A. establish a testing service for people to determine if drugs contain fentanyl.
B. It will also call on the Federal Government to help restrict access to pill presses and tablet machines, as well as the opening of more supervised consumption or injection sights.
C. The government would also like to see escalating charges for the importation and trafficking of fentanyl and will request that Canada Border Services Agency has the right tools to keep illicit opioids from reaching B.C. streets.

Bill S-225 is in its 3rd reading and is aimed at making 6 chemicals used in the production of fentanyl illegal. These 6 chemicals were previously unregulated but now will fall under the Controlled Drugs and Substances Act. Health Canada also announced an “Opioid Action Plan” in June of 2016:

1. Better informing Canadians about the risks of opioids: new warning stickers, patient information sheets, review of best practices
2. Supporting better prescribing practices: promote prescription monitoring programs, examine pharmacy records, share information with PT licensing bodies, Canada Health Infoway e-prescribing solution
3. Reducing easy access to unnecessary opioids: contraindications for approved opioids, requiring a prescription for low-dose codeine products, mandatory risk management plans for certain opioids
4. Supporting better treatment options for patients: better & faster access to naloxone, expediting the review of non-opioid pain relievers, re-examining special requirements for methadone
5. Improving the evidence base: bringing together experts in the field to discuss how to improve data collection and the Canadian evidence base

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9 Patient-Reported Utilization Patterns of Fentanyl Transdermal System and Oxycodone Hydrochloride Controlled-Release Among Patients With Chronic Nonmalignant Pain. STACEY J. ACKERMAN, MSE, PhD; MARGARET MORDIN, MS; JOSEPH REBLANDO, MPH; XIAO XU, PhD; JEFF SCHEIN, DRPh, MPh; SUE VALLOW, MBA, MA; and MICHAEL BRENNAN, MD. www.amcp.org Vol. 9, No. 3 May/June 2003 JMCP Journal of Managed Care Pharmacy
Although access to Naloxone to prevent overdose is growing, it is not without limitations. Naloxone is not part of the public formulary everywhere in Canada. For example, in Newfoundland, because naloxone is not part of the public formulary, the government is looking for funds to provide as many kits as possible but in the short term has committed to a total of 24 kits in St. Johns by Christmas and notes the cost as 35$ per kit! In other provinces, naloxone was originally provided to paramedics and specific health care providers but this strategy has not gone far enough to reach vulnerable populations at high risk for overdose. Some provinces, such as Ontario, are contemplating ways to make Naloxone and naloxone education more widely available, for free and without prescription at all pharmacies along with expanding distribution more broadly through a variety of health, social and justice settings.

While Naloxone requires a prescription, the BC government expected that the life saving drug would become deregulated, also making it more widely available. The Minister of Health for Manitoba has indicated that the distribution of naloxone has to be improved despite ensuring naloxone is carried by police, fire departments, and some pilot sites around the city.

Fentanyl is making its way into controlled environments such as jails/remand centers and provincial health authorities are reporting the use of naloxone to prevent overdose. There are also reported concerns by addictions specialists that opioid misuse is not adequately assessed or addressed through treatment for people entering jails/remand centers which also increases risk for people in withdrawal and for accessing illicit drugs. This is especially concerning given that indigenous people make up at least 25% of those incarcerated.

There is growing evidence that one dose of naloxone will not work in all situations of fentanyl overdose because of the varying grades of fentanyl. Most naloxone kits provide 2 doses and it has been reported that the 2 doses and even 4 doses are not enough on their own to save someone from overdose. This means that education on the use of naloxone has included warning messages to seek medical attention immediately following the administration of naloxone. Further emphasis and education is required.

While the Declaration passed at the April 2016 United Nations Special Session on the World Drug problem promotes a human rights approach for drug related issues through the “right to health care including prevention and treatment” over the long standing paradigm of “war on drugs” that criminalized people for drug related issues more than it solved the world drug problem, the courts in Canada are wrestling with appropriate sentencing for fentanyl related crimes. In Canada, drug cases involving fentanyl have seen judges weigh whether the presence of fentanyl – a drug in the same category as heroin and cocaine – increases the severity or culpability of a criminal act, such as

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trafficking, in light of the recent surge in fentanyl-related deaths. While parliament prescribes what to do about drug trafficking it is silent on assessing the consequences of selling fentanyl or drugs containing fentanyl. Some provincial judges are encouraging that sentences be based on the consequences for selling fentanyl and fentanyl products to match the impact of overdoses caused by such drugs. An Ontario court judged recently sentenced a man to 10 years in prison for selling fentanyl and will serve 6 years of this sentence. This sentence is reflective of trafficking and forging documents to gain access to fentanyl. This sentence does not consider the consequences for selling fentanyl.

Access to naloxone will be a key conversation among health ministers in October 2016.

Provincial governments are in the process of developing strategies to address the opioid crisis by focusing efforts on addressing the Health Canada’s 5-point Opioid Action Plan. Some first nations have also developed plans and responses, such as Alberta Mental Health and Addictions committee. The Chiefs of Ontario Take a Stand Report has been used as the foundation for Ontario First Nation and some Alberta First Nation community plans. First Nation PDA committees in Manitoba and Saskatchewan are working together with provincial colleges of family physicians and coroners to develop a strategic plan for addressing opioid issues. These are broad based initiatives to address opioid issues more broadly.

Conclusion

Addressing the fentanyl crisis has been challenging for First Nations communities especially in gaining access to naloxone. This is representative of an overall issue related to opioid misuse generally, and that is, primarily with having consistent access to treatment and capacity of First Nations governments to ensure effective prevention, health promotion and education related to opioids within the context in social inequality, intergenerational trauma and poverty.

Fentanyl like other opioids have a history of not being used according to manufacturers specification and in overprescribing. Illicit fentanyl is a bigger issue and its an issue that requires the federal government to ensure that First Nations governments have support and capacity for the “Opioid Action Plan”. In addition to this 5 point plan, First Nations also have other needs related to opioid misuse and these are articulated in the action plan submitted to the Prescription Drug Abuse Coordinating Committee (attached here as an appendix).

Some of the short term and immediate needs related to opioids more generally are as follows:

1. Education and support for community based harm reduction is required, firstly by ensuring naloxone is immediately and broadly available within First Nations communities to all those who can benefit from it and secondly, by ensuring first nations communities are provided necessary resources to explore culturally relevant strategies for reducing harms of opioid misuse.
2. That a commitment to funding community based opioid agonist treatment programs be assessed and incorporated into community health envelopes, and further that NNADAP and

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NYSAP treatment centers be supported for building capacity for managing clients already participating in opioid agonist treatment.

3. That a commitment to funding community based opioid prevention programs that support women of childbearing years be established.

4. That a commitment to funding community based, cultural based programming for mothers and infants who have experience neonatal abstinence syndrome be established.

5. That the priority actions submitted to PDAC for the management of PDA be adopted and that a detailed budget and plan for accomplishing same be developed and implemented.
APPENDIX A: Thunderbird Partnership Foundation: PDA Priority Actions

(Submitted to PDACC, May 2016. Prepared by: Mae Katt LPN, Dr. Sharon Cirone, Dr. Claudette Chase and Carol Hopkins)

Priorities for Action

1. **Governance and Coordination of Care must support First Nations governance of services.**
   - Strong governance and coordination among and within systems are vital to developing and maintaining culturally responsive care in a First Nations community.
   - Key components that support both the governance and coordination of systems include:
     - Community-driven addiction services;
     - Inter-jurisdictional relationships and collaboration;
     - System level partnerships and linkages.

   (Honouring Our Strengths: A Renewed Framework to Address Substance Use Among First Nations in Canada, p 72)

2. **First Nations health care providers and addiction medicine institutions should develop an online training course and long distance clinical support system on buprenorphine for primary care physicians working in First Nations communities.**
   - There are a number of physicians, nurse practitioners and nurses in Sioux Lookout with many years of experience in prescribing and dispensing buprenorphine in First Nations communities.
   - These practitioners are capable of delivering training and clinical support through a long-distance mentorship network.

3. **When invited to do so, addiction physicians should be supported to assist in buprenorphine treatment in First Nation community based programs.**
   - Currently, a group of addiction physicians from Toronto and Sudbury regularly fly to isolated Sioux Lookout communities to do buprenorphine inductions.
   - Support is necessary because family physicians simply do not have the time for buprenorphine inductions during their fly-in visits.
   - The program is funded by the CPSO, which covers travel costs from Toronto to Thunder Bay, and by the Sioux Lookout Regional Health Authority, which provides daily stipends for the addiction physicians).

4. **Nurse practitioners should be allowed to prescribe buprenorphine.**
   - Currently, many nurse practitioners work in isolated rural and northern communities with very high rates of addiction and limited access to addiction physicians.
   - Buprenorphine is much safer than methadone or other potent opioids.
   - Permitting NPs to prescribe buprenorphine will significantly enhance treatment capacity in the north.
5. **NIHB and FNIH, Health Canada needs to ensure sustainable, stable operational funding for Prescription Drug Abuse (PDA) programs, including treatment with buprenorphine, addictions recovery, relapse prevention counselling, culture and land based programming.**
   - Currently, Health Canada limits the number of days, per patient that nurses may be involved in buprenorphine dispensing to less than one month
   - Health Canada funding for community based PDA programs was recently transitioned from one year grants to three year grant cycles.
   - Sustainable program funding is required to build sustainable programs for complex chronic illnesses, such as prescription drug addiction.

6. **Health Canada should provide training and support for recovery from intergenerational/Historical Trauma and PTSD. There should be funded support for:**
   - Wellness retreats for Chief and Council leadership (a request for funding has come directly from Grand Chief Isadore Day);
   - Training of Prescription Drug Abuse program workers in Trauma Informed Care; and
   - Aftercare programs that support individual, family and community healing from PTSD and Historical Trauma Transmission.
   - Prescription Drug Abuse and other addictions before this recent epidemic, including alcohol use disorders, are a symptom of underlying issues, sorrow and pain.

7. **Indigenous communities should be offered support in establishing local, community-based treatment programs.**
   - Buprenorphine is emerging as an effective and feasible alternative to methadone treatment in indigenous communities.
   - According to regulations of the Non-Insured Health Benefits program, physicians requesting buprenorphine for First Nations patients must confirm that buprenorphine will be dispensed through a community treatment program that is able to store buprenorphine in a secure location.
   - This ensures that patients receive appropriate counselling and support, and that safe and standard prescribing and dispensing protocols are in place.
   - In the Sioux Lookout area, approximately 1500 patients living in remote First Nations communities have been treated in community-based buprenorphine treatment programs, with strong support from the communities’ leaders.
   - Buprenorphine treatment is initiated either by the community’s primary care physician or by urban addiction physicians through telemedicine or fly-in locums.
   - The primary care physician continues prescribing once the patient is stable.
   - Buprenorphine is dispensed daily under the observation of nurses, nurse practitioners or community workers.
   - Each of these communities has established a recovery program that involves community mental health workers who provide both conventional counselling and culturally appropriate, traditional healing practices.
     i. This comprehensive approach has enabled many patients to stop their opioid use and return to work, school and family.
     ii. Kanate and colleagues (2015), documented remarkable results for a buprenorphine program in North Caribou Lake First Nation.
iii. A year after program initiation, criminal charges and Medevac transfers decreased, the needle distribution program dispensed less than half its previous volume and rates of school attendance increased.

References:


8. First Nations patients living on reserve who are attending off reserve Opioid Substitution Programs, should be offered to enter community based PDA recovery programs. All patients requesting to return to or enter PDA programs in their communities should be supported to transition from Methadone Maintenance Treatment (MMT) to buprenorphine. The college of physician and surgeons should encourage all MMT providers to support transition to buprenorphine prescribing where requested, by First Nations patients.

Patient choice should be supported, patient-centred care should be mandated.

- Many First Nations patients on MMT face significant barriers either travelling to their home communities or returning to live in their communities because of maintenance on methadone.
  - Some patients report encountering resistance from MMT providers to transition to buprenorphine prescribing.

- Many communities are financially supporting expensive transportation for their community members to travel from the community to off reserve ‘methadone clinics’ and pharmacies.
  - The First Nations that develop and maintain community based programs can repatriate their community members to their own buprenorphine prescribing programs.

9. **Youth should have access to services specific to their developmental needs.**

- There are very few providers of addiction treatment services and specifically medical treatment of Opioid Use Disorders who provide youth specific services, or at the very least integrate services adapted to the needs of young people.

- Young people, up to the age of 25, have challenges unique to the adult population.
  - “the human brain does not reach full maturity until at least the mid-20s...”
The majority of young people with substance use disorders have concurrent mental health issues, such as anxiety and mood disorders.

Homeless, street involved and marginalized youth often have complex psychological and social issues.

Two excellent examples of services adapted to the needs of youth are:
- School based program at Dennis Franklyn Cromarty High School in Thunder Bay
- The Breakaway Toronto Opiate Support Team

10. **Family Physicians, Nurse Practitioners, and any other clinicians providing Opioid Substitution Therapy should be prescribing buprenorphine/naloxone and have access to education in providing youth specific services.**

- Youth often do not seek services through their Family Physicians or other health care providers because they:
  - have concerns about confidentiality or stigmatization;
  - do not have a primary care provider or have lost contact with their usual provider; and
  - are often not aware of treatment options.
- Family Physicians and other providers often do not feel confident providing clinical care to adolescents and youth with alcohol and substance use disorders and the concurrent mental health disorders.
- Many primary care providers work in environments that do not purposefully provide youth specific services.

11. **Any adolescent or young person, particularly those under 25 years of age, especially whose home community is a First Nation, seeking care for Opioid Use Disorders, should be offered a full range of treatment options, including abstinence based treatment and/or Opioid Substitution Therapy. All those consenting to Opioid Substitution Therapy should be counselled in the expectations of duration of treatment, and be offered the opportunity to taper down and off of OST, throughout the course of treatment. The advantages of buprenorphine versus methadone for OST in young people should be discussed.**

- There are an increasing number of clinical trials on treatment interventions for adolescents and youth with opioid use disorders.
- There are many instances however, where patients prefer buprenorphine, where their expectations of treatment or where their living circumstances, or geographic location would suggest that buprenorphine is preferable over methadone.
- Many young people are concerned about the long duration of treatment that is typical of methadone, they express concern about side effects, including sedation and/or they are worried about the stigma and regulation of methadone versus buprenorphine.
- There is anecdotal evidence and a pharmacologic basis for supporting the use of buprenorphine over methadone for patients anticipating tapering off of and discontinuing OST.
- Many young people seeking treatment for Prescription Drug Abuse (PDA) have had shorter durations of use, with less progression to high risk use (IV use, high dose use, daily use).
- It is a great concern when the duration of OST treatment is exponentially longer than the duration of illicit opioid use.
All youth on OST should be offered and supported in efforts to taper down and off of OST.

12. **Buprenorphine should be designated as first line of treatment for Aboriginal women who are pregnant.**
   - Women can return home more easily to be with their families and receive support from their communities.
   - Treatment has the same outcomes as other monitored opioids for pregnant patients.
   - Studies show less intense and shorter duration of neonatal abstinence syndrome (NAS) with buprenorphine over methadone.

13. **Treatment has to have a gender lens.**
   - Social control through social service agencies and medical providers are punitive drug policies and effect women as double and triple punishment. Is impossible to protect children by locking up their mothers for their drug use and it’s impossible to ensure the wellbeing of children by detaching them at birth from their mothers.
   - Treatment must attend to the needs of women through the provision of child care, removal of disqualifying criteria for pregnant women, support breast feeding women, and meet the needs for transgender populations
   - Treatment for mothers and their new born babies must accommodate access to health care while giving attention to poverty
Community-wide measures of wellness in a remote First Nations community experiencing opioid dependence

Evaluating outpatient buprenorphine-naloxone substitution therapy in the context of a First Nations healing program

Dinah Kanate MD CCFP  David Folk MD CCFP  Sharon Cirone MD CCFP  Janet Gordon RN  Mike Kirlew MD CCFP  Terri Veale RN(EC)  Natalie Bocking MD CCFP  Sara Rea  Len Kelly MD MClSc CCFP FRM

Abstract
Objective To document the development of unique opioid-dependence treatment in remote communities that combines First Nations healing strategies and substitution therapy with buprenorphine-naloxone.

Design Quantitative measurements of community wellness and response to community-based opioid-dependence treatment.

Setting Remote First Nations community in northwestern Ontario.

Participants A total of 140 self-referred opioid-dependent community members.

Intervention Community-developed program of First Nations healing, addiction treatment, and substitution therapy.

Main outcome measures Community-wide measures of wellness: number of criminal charges, addiction-related medical evacuations, child protection agency cases, school attendance, and attendance at community events.

Results The age-adjusted adult rate of opioid-dependence treatment was 41%. One year after the development of the in-community healing and substitution therapy program for opioid dependence, police criminal charges had fallen by 61.1%, child protection cases had fallen by 58.3%, school attendance had increased by 33.3%, and seasonal influenza immunizations had dramatically gone up by 350.0%. Attendance at community events is now robust, and sales at the local general store have gone up almost 20%.

Conclusion Community-wide wellness measures have undergone dramatic public health changes since the development of a First Nations healing program involving opioid substitution therapy with buprenorphine-naloxone. Funding for such programs is ad hoc and temporary, and this threatens the survival of the described program and other such programs developing in this region, which has been strongly affected by an opioid-dependence epidemic.

EDITOR’S KEY POINTS
• Opioid dependence has become a widespread issue in northwestern Ontario, particularly in remote First Nations communities, with some communities reporting prevalences of prescription opioid abuse between 35% and 50%.

• North Caribou Lake First Nation had an age-adjusted adult rate of treated opioid dependence of 41%. Opioid addiction affects the whole fabric of a community, so North Caribou Lake First Nation developed a community-based treatment program that combined substitution therapy and intensive, culturally appropriate counseling.

• The program has received strong community support, and considerable improvements in community-wide measures of wellness have been documented, including decreases in child protection cases, criminal charges, and drug-related medical evacuations, and increases in school attendance, participation in community events and vaccination programs, and spending at the local store.
Évaluation des indices de mieux-être pour la communauté d'un village éloigné des Premières Nations aux prises avec la dépendance aux opiacés

Évaluation d'un traitement de substitution à la buprénorphine-naxolone dans le contexte d'un programme de guérison des Premières Nations

Dinah Kanate MD CCFP  Sharon Cirone MD CCFP  Janet Gordon RN  Mike Kirlew MD CCFP
Terri Veale RN(EC)  Natalie Bocking MD CCFP  Sara Rea  Len Kelly MD MCIC FCFP FRIM

Résumé

Objectif Documenter le développement d’un traitement unique de la dépendance aux opiacés au sein de communautés éloignées à l’aide de stratégies de traitement propres aux Premières Nations, combinées à un traitement de substitution à la buprénorphine-naxolone.

Type d’étude On a fait une mesure quantitative du niveau de mieux-être dans la communauté et de la réponse au traitement propre à la communauté pour la dépendance aux opiacés.

Contexte Une communauté éloignée des Premières Nations, dans le nord-ouest de l’Ontario.

Points de repère du rédacteur

• La dépendance aux opiacés est devenue un problème dans l’ensemble du nord-ouest de l’Ontario, particulièrement dans les communautés éloignées des Premières Nations, certaines de ces communautés rapportant une prévalence de prescription d’opiacés atteignant 35% et 50%
• La Première Nation de North Caribou Lake avait un taux ajusté en fonction de l’âge, pour les cas adultes de dépendance aux opiacés traités, de 41%. La dépendance aux opiacés ébranle l’ensemble de la structure de la communauté, et c’est pourquoi ce village a développé un programme de traitement propre à la communauté qui combine un traitement de substitution et un counseling intensif culturellement approprié.
• Le programme a reçu un très bon appui de la communauté et on a observé des améliorations considérables dans les indices de mieux-être, tels qu’une diminution des cas liés à la protection de l’enfance, des accusations criminelles et des évacuations médicales liées à la drogue, mais aussi une diminution des absences à l’école, une meilleure participation aux activités communautaires et aux programmes de vaccination, et une augmentation des achats au magasin local.


Participants Un total de 140 membres de la communauté souffrant de dépendance aux opiacés ont choisi de participer.

Intervention Un programme de guérison des Premières Nations développé au sein de la communauté, un traitement de la dépendance et un traitement de substitution.

Principaux paramètres à l’étude Des indices de mesure du bien-être pour l’ensemble de la communauté, soient le nombre d’accusations criminelles, les évacuations médicales liées à la dépendance, les cas de protection de l’enfance, l’assiduité à l’école et la présence aux activités communautaires.

Résultats Le taux ajusté pour l’âge du traitement de la dépendance aux opiacés chez les adultes était de 41%. Un an après la création du programme de guérison intra-communautaire et du programme de traitement de substitution pour la dépendance aux opiacés, les accusations criminelles des policiers avaient diminué de 61,1% et les cas de protection de l’enfance de 58,3%, l’assiduité à l’école avait augmenté de 33,3% alors que la vaccination saisonnière contre la grippe avait connu une augmentation dramatique de 350,0%. La présence aux activités communautaires est maintenant considérable et les ventes au magasin général local ont augmenté de près de 20%.

Conclusion Les indices de mesure du bien-être de la communauté ont connu des changements dramatiques sur le plan de la santé publique depuis l’instauration d’un programme de guérison des Premières Nations comprenant un traitement de substitution à la buprénorphine-naloxone pour la dépendance aux opiacés. Comme ce programme jouissait d’un financement ad hoc temporaire, il risque de ne pas survivre, à l’instar d’autres programmes semblables qui se développent dans une région aux prises avec une grave épidémie de dépendance aux opiacés.
Opioid dependence has become a widespread issue in northwestern Ontario, particularly in remote First Nations communities. In 2009, the northwestern Ontario First Nations chiefs declared a state of emergency regarding “prescription drug abuse” related to the epidemic of abuse of long-acting oxycodone preparations. This was in response to mounting concerns about the social, health, and economic consequences of opioid abuse among many remote First Nations communities: increasing crime, family dysfunction, unemployment, and increasing rates of hepatitis C and neonatal abstinence syndrome.

In Ontario between 1991 and 2007, the number of prescriptions for oxycodone increased by 850%. While the proportion of First Nations people in Ontario receiving opioids through Non-Insured Health Benefits, the responsible federal medical insurance agency, remained steady between 1999 and 2009, the quantity and proportion of oxycodone dispensed increased substantially.

Concurrent with opioid prescribing among First Nations patients, diversion of prescription opioids and trafficking of oxycodone products from larger centres appears to have played an important role in their availability in First Nations communities. The 2008 to 2010 First Nations Regional Health Survey reported that 6.8% of Ontario on-reserve respondents used opioids without a prescription. However, community-led surveys in several Nishnawbe Aski Nation communities reported prevalences of prescription opioid abuse between 35% and 50%. In addition, a 3-fold increase in the number of aboriginal people (mostly First Nations) seeking treatment for addiction to prescription opioids in Ontario occurred from 2004 to 2009.

Remote communities need and have developed unique solutions to address the crisis of opioid drug abuse. In northwestern Ontario, the relatively inaccessible geography of remote First Nations communities limits travel for most of the population. Thirty-one remote First Nations communities, which vary in size from a few hundred to several thousand in population, are situated across a vast area accessible primarily by small planes. Primary care clinics are staffed by nurses and supported by regular fly-in or in-community family physicians. North Caribou Lake First Nation (estimated population 1100) is one such community, as its regional health care centre and the closest hospital are located in Sioux Lookout, Ont, which is a 1-hour flight away. In 2012, in response to the urgent need for a workable opioid-dependence program, the community leadership in conjunction with health care providers developed a unique buprenorphine-naloxone substitution and maintenance program, including in-community aftercare counseling by First Nations healers. A pilot project in a neighbouring community in 2012 had demonstrated the effectiveness and safety of buprenorphine-naloxone for substitution therapy in this setting. This medication combines an opioid agonist (buprenorphine) with an opioid antagonist (naloxone) and resists diversion from its intended sublingual route. The naloxone component, which is inactivated by first-pass effect when taken mucosally, precipitates withdrawal if used intravenously.

Primary care settings

The safety and efficacy of buprenorphine-naloxone induction in primary care settings (including “home” or unobserved inductions) is well established. In fact, primary care delivery of buprenorphine-naloxone programs have success rates similar (50%) to those of more resource-intensive clinical settings. Treating addicted patients in a primary care setting allows for more cost-effective delivery of medical services for concurrent illnesses, development of therapeutic relationships, and surveillance for addiction-related complications and infections.

The program in North Caribou Lake First Nation is unique in the scope of community participation in treatment and its remote setting, far from hospital services.

METHODS

Setting and participants

A written request for program evaluation was provided by the Chief and Band Council of North Caribou Lake First Nation. Ethics approval was granted by the Sioux Lookout Meno Ya Win Health Centre Research and Ethics Committee. All program participants signed a narcotic treatment contract, and no individual patient information was used in this study.

Program description

As of May 2014, 140 self-referred community members of North Caribou Lake First Nation in northwestern Ontario had participated in the outpatient healing and buprenorphine-naloxone substitution program since the first intake in July 2012; 8 groups of up to 20 participants went through the induction and maintenance program. All patients met the Diagnostic and Statistical Manual of Mental Disorders, 4th edition, criteria for substance dependence. Medication inductions (and sublingual administration) are undertaken in the community clinic by the visiting family physicians or addiction specialists. Initially the program runs daily for each patient for 28 days and is managed by the community nurses and mental health workers. Following that initial month, buprenorphine-naloxone dispensing and daily follow-up is managed by community-trained health aides. First Nations counselors and healers deliver group and individual daily sessions several weeks per month during and after the month-long initiation of the program. They
focus on addiction recovery, relapse prevention, understanding early-life trauma, grief counseling, and traditional healing teachings. Land-based activities were used, along with individual and group education and counseling sessions.

Study design
Statistics from community programs and health-related data were collected and compared for time periods 1 year before and 1 year after the initiation of the buprenorphine-naloxone program. Community-wide measures that are routinely monitored by their respective agencies were collected, as they could be easily followed for changes in incidence.

Main outcomes
Data on community-wellness measures were collected to assess the effectiveness of the program on the community as a whole. The community-wellness measures included the number of emergency air ambulance medical evacuations out of the community, seasonal influenza immunization rate, number of child protection apprehensions, local community policing calls, number of needles given out by the needle distribution program, school attendance rates, and sales at local stores. Personal observations of manifestations of community spirit were contributed by community and visiting health care professionals and local community mental health workers.

RESULTS

The 140 patients enrolled in the opioid-dependence treatment program were all between 20 and 50 years of age. Using local medical record population statistics, this accounts for a 41% age-adjusted rate of adult community members in that age group receiving opioid-substitution therapy, including a rate of 48% for patients in their 20s.

Medical evacuations are emergency evacuations to hospital by paramedics in a fixed-wing aircraft (supplied by the provincial air ambulance service). Drug-related medical evacuations were grouped as the total of drug-related assaults, suicide attempts, overdoses, and sexual assaults believed to be directly related to drugs or addiction. This subset of medical evacuations fell by 30.0%, while the total number of medical evacuations rose by 15.7% (Table 1).

In the year following program initiation, police criminal charges fell by 61.1%, including a 94.1% drop in robbery and arson charges (from 17 in 2011 to 1 related charge in 2013). Young offender criminal or drug charges fell by 66.3%. The needle distribution program dispensed less than half its previous volume, and in 2013, 700 used needles were returned, a rare occurrence in earlier years. The nursing station noted that children and elderly patients were being brought in for medical care at earlier stages of illness. They also noticed that the community clinic became more of a primary care centre than a trauma centre, as they were now caring for less drug-related violence and its medical sequelae. School attendance had increased and most children now arrived having had breakfast at home.

Public support of the program is integrated into the community. The community leadership is strongly supportive and donated a building to house the program called New Horizons. Clients proudly wear T-shirts attesting to their participation both in the substitution program and in the ongoing aftercare counseling. The chief and band councilors take a keen interest in the success of the program and maintain supportive relationships with clients and the medical, nursing, clerical, and counseling program staff. Accepted community health indicators, such as increased planning of and participation in community events and activities for youth and elders, were also evident but not systematically measured. Both the pervasiveness of the issue and the positive, holistic community response have served to lessen the stigma typically associated with substance abuse, perhaps rendering it more amenable to treatment.

Community members strongly endorsed the program: “It has brought life back to our community, [which] is being restored to the way it used to be before everyone got stuck in addiction.” Practical benefits include more disposable income:

When I am on Facebook, I see a lot of people writing that they are so happy they joined the program because now that they are not using, their cupboards always have food in [them] and they have money in their pockets and they can buy what they need for them or their children.

DISCUSSION

We have documented, for the first time, an accurate measure of the scope of the problem in one of our regional communities. The age-adjusted rate of 41% of the adult population participating in the treatment program gives credence to the regional chief’s 2009 description of an “epidemic” of opioid dependence. This figure informs the community-wide scope of the problem occurring in northwestern Ontario.

Given the depth of the issue, the successful community-based development of this opioid-dependence program is even more remarkable. North Caribou Lake First Nation is effectively dealing with the community-wide opioid abuse it has experienced. The novel
combination of intensive addictions counseling, First Nations healing strategies, and substitution therapy with buprenorphine-naloxone are all key components. That effective integration has occurred speaks to the effort and creativity brought to bear on a desperate situation by community members, leaders, and health care providers.

In North Caribou Lake First Nation, not only are more community events being planned and well attended, but there is also a sense of community purpose being expressed to health care providers. Total medical evacuations out of the community rose by 15.7% in the study period. Clinicians believed this increase was due to community members bringing serious medical conditions to the attention of the nursing staff that might have previously remained unreported. The dramatic fall in crime and increase in wellness behaviour such as flu vaccinations speak to the dramatic public health effects the healing and substitution therapy program has achieved. Few public health interventions can effect a 350% increase in seasonal flu immunizations or a dramatic drop in child protection cases of almost 60%.

Integrating regular visiting cultural healers into the follow-up care within the remote community allows for powerful role modeling and story sharing. Personal transformation stories are becoming commonplace in the intense cultural healing and counseling sessions that accompany the medical substitution therapy in this community.

Of the 31 regional fly-in First Nations communities, 16 others have similar treatment program experiences. Despite their success, existing programs continually deal with issues of losing their present level of funding and some have recently had to stop accepting new patients pending available resources. Another dozen communities struggle with attracting the necessary funding to initiate their own treatment and healing programs, which are federally funded annually on an ad hoc basis.

The larger question is, how does a First Nations community come to have a 41% age-adjusted adult rate of treated opioid dependence? The 2014 United Nations’ special rapporteur report on indigenous peoples in Canada concluded that we face a “continuing crisis” regarding the situation of our indigenous peoples and that government initiatives have to this point been “insufficient.” Its recommendations include “strengthening and expanding services that have already demonstrated success,” and this would certainly seem to apply to the community-based buprenorphine-naloxone programs in First Nations communities in northwestern Ontario.

Once communities have been able to stabilize their current addiction treatment management, what is next? Given limited economic resources, how do they move forward with community development initiatives including housing, employment, education, self-administration, and community planning to alter the social conditions that are such a fertile field for addiction? Long-term federal and provincial commitments, accompanied by sustained financial support, are required to assist First Nations communities in addressing the roots of opioid addiction.

**Limitations**

Population estimates of remote communities such as North Caribou Lake First Nation can vary widely. Our overall population estimate is based on

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<td>Total medical evacuations</td>
<td>183</td>
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<td>Child protection cases</td>
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<td>Police criminal charges</td>
<td>226*</td>
<td>88</td>
<td>-61.1%</td>
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<td>Prenatal program</td>
<td>12 of 18 using illicit narcotics (66%)</td>
<td>10 of 22 taking buprenorphine substitution</td>
<td>Reduction of illicit narcotic use in pregnancy</td>
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<td>Seasonal flu immunizations</td>
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<tr>
<td>Local store purchases†</td>
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*Statistics for 2012 are presented, as 2011 statistics were not available.
†Sales increase given by store; sales figures were not released.

Table 1. Annual community-wide wellness measures 1 year before and 1 year after initiation of the program combining buprenorphine-naloxone substitution therapy and First Nations healing strategies.
community-generated numbers used in recent fire evacuation planning in 2011, as well as age ranges derived from community medical records.

Data were gathered as available and markers were chosen by community members and health care providers that highlighted the most important changes experienced by community members and health care providers, as the community moved from crisis to stability of addiction treatment. Future measures of community wellness will need to proceed systematically and involve community-based indicators of wellness using more subtle indicators of health. Our study was not intentionally limited to 20- to 50-year-olds, that was the actual age range of present participants. Program retention rates and urine drug screening values are also being collected and will be available in the future.

Before-and-after studies are limited in their ability to infer causality; however, in the small isolated community of North Caribou Lake First Nation, there were no other such programs or economic or social changes in the community during the observed time frame.

Conclusion
Opioid addiction affects the whole fabric of a community. The combination of substitution therapy and intensive, culturally appropriate counseling appears to be immensely effective.

Long-term funding is required to sustain these community-based health and social initiatives around addiction management. They are hallmarks of success in treating opioid dependence within communities. Ms Kanate is Chief of North Caribou Lake First Nation and oversees the New Horizon Program in Round Lake, Ont. Dr Folk is a regional physician in Sioux Lookout, Ont, and regularly visits the community in North Caribou Lake as a family physician. Dr Cirone is an addiction specialist at St Joseph’s Health Centre in Toronto, Ont, and visits the North Caribou Lake community regularly for addictions work. Ms Gordon is Director of Health Services at the Sioux Lookout First Nations Health Authority. Dr Kirlew is Assistant Professor at the Northern Ontario School of Medicine in Sioux Lookout. Ms Veale is a community nurse in Round Lake. Dr Bocking was a resident in community medicine at the University of Toronto at the time of the study. Ms Rea was a research intern at the Anishinaabe Bimaadizwmin Research Unit in Sioux Lookout at the time of the study. Dr Kelly is Professor at the Northern Ontario School of Medicine in Sioux Lookout.

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Contributors
All authors contributed to concept and design of the study; data gathering, analysis, and interpretation; and preparing the manuscript for submission.

Competing interests
None declared

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References
The management of opioid dependence during pregnancy in rural and remote settings

Naana Afua Jumah MD DPhil, Lisa Graves MD, Meldon Kahan MD MHSc

Nonmedical use of prescription opioids is a growing problem in Canada; in 2011, it had the highest per capita consumption of oxycodone in the world.1 When a woman with opioid dependence becomes pregnant, adequate management of the addiction is of critical importance for the well-being of both mother and child. Untreated opioid addiction has been associated with risk-taking behaviour, preterm delivery, low birth weight and stillbirth.2,3 Ideally, antenatal care for women with opioid dependence is accomplished with multidisciplinary care, including treatment of the addiction.4,5 However, women who live in rural and remote communities may not have access to such care or may have challenges accessing it.6

Comprehensive guidelines to manage the care of pregnant women with opioid dependence who live in rural or remote communities do not currently exist. This absence, in addition to a lack of resources, a lack of training in the treatment of addiction in pregnancy and providers’ discomfort with opiate substitution therapy in pregnancy, has contributed to wide variations in the quality of care these women receive.

We evaluate strategies for the treatment of opioid dependency in pregnancy applicable to rural and remote settings, including methadone maintenance therapy, buprenorphine maintenance, slow-release morphine maintenance and opioid detoxification (Box 1).7 Special consideration is given to members of Canada’s Aboriginal population. Very little literature exists regarding the management of polysubstance use in pregnancy, and a full discussion of the issue is beyond the scope of this review.

What are the patterns of opioid dependence in rural and remote areas of Canada?

Statistics Canada defines a rural community as having less than 10 000 people, with less than 30% of the population commuting to a city of 100 000 people or more for work.8 However, the Canadian Medical Association defines rural as areas in which physicians have high call requirements, there are long distances to secondary and tertiary care centres, there is a lack of specialist care and there are insufficient health care providers.9

Given these differing definitions, the descriptions of pregnant women with opioid dependence who reside in these areas vary widely in terms of socioeconomic status, ethnic diversity and proximity to urban resources.10 Heroin is the most commonly reported opioid used by pregnant women living in rural and remote communities,2,9,11 but the nonmedical use of prescription opioids is increasing.10,11 Regardless of the opioid in use, treatment strategies for pregnant women in these communities primarily involve methadone maintenance.2,3

What is the recommended treatment for opioid dependence during pregnancy?

The management of opioid dependence in pregnancy in rural and remote settings requires special consideration (Boxes 2 and 3).

Methadone maintenance therapy is the gold standard for treating opioid dependence in pregnancy.12,13 Numerous studies have shown that, in pregnant women who use heroin, methadone is associated with more visits for antenatal care, longer gestations, higher birth weights, lower rates of HIV infection, higher rates of infant discharge home in care of the mother and lower rates of relapse compared

Key points

• Nonmedical use of prescription opioids during pregnancy is becoming more common, and members of Canada’s Aboriginal population are disproportionally affected.
• Methadone maintenance therapy has logistic limitations in rural and remote settings, but buprenorphine and slow-release morphine maintenance therapies are feasible alternatives.
• Opioid detoxification in pregnancy is associated with high rates of relapse and should only be offered if a comprehensive rehabilitation program is available.
• Treatment of opioid dependence and rehabilitation services should be provided to all women during pregnancy and the postpartum period.

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with no treatment or detoxification. Methadone has important logistical limitations that prohibit its use in resource-limited locations. Methadone can only be prescribed by physicians who hold a special license. Because of the high risk of overdose at the start of treatment, methadone must be dispensed daily and ingested under the observation of a licensed pharmacist at a registered pharmacy. Because many rural and remote communities are unable to provide this service, methadone is not offered.

What are the alternatives to methadone maintenance therapy?

Observational studies have shown buprenorphine maintenance therapy to be a safe and efficacious alternative to methadone for the treatment of opioid dependence in pregnant women. Recent randomized controlled trials have shown that buprenorphine and methadone cause similar reductions in maternal opioid use and similar birth and neonatal outcomes, and that buprenorphine is associated with decreased severity of symptoms of neonatal abstinence syndrome.

A case series describing 10 women who took buprenorphine plus naloxone maintenance therapy showed outcomes similar to those of buprenorphine alone.

Buprenorphine is a partial μ-opioid receptor agonist that has a lower risk of fatal overdose than full μ-opioid agonists such as methadone. Buprenorphine may precipitate withdrawal if caution is not exercised at the start of treatment. The drug may also incompletely treat withdrawal symptoms, putting patients at risk for ongoing use of illicit drugs to manage their symptoms. Furthermore, buprenorphine may be less effective than methadone at retaining patients in treatment if they used opioids intravenously.

Unlike methadone, Health Canada does not require an exemption to prescribe buprenorphine; however, outside of Ontario and Quebec, public funding of buprenorphine is restricted to physicians with a methadone license.

The buprenorphine formulation now includes naloxone, which is intended to deter misuse. Addiction literature often cites naloxone as a possible teratogen and warns against its use in pregnancy. However, the United States Food and Drug Administration classifies naloxone as a pregnancy category B drug, meaning that there have been no reports of teratogenicity in humans or animals. The greater concern in pregnant women with opioid dependence is naloxone’s ability to precipitate withdrawal if taken intra-venously or intranasally. Naloxone has minimal buccal or sublingual absorption. As previously described, acute opioid withdrawal is associated with morbidity for both the woman and her fetus.

What if methadone and buprenorphine are not available?

Slow-release morphine maintenance therapy has been proposed as an alternative to methadone when the latter is not available. In resource-limited areas, slow-release morphine may be more accessible because a special license to prescribe it is not required, and it is readily available in pharmacies. Accessibility is also the most notable drawback of morphine because it is more easily acquired and diverted than methadone. In addition, morphine is more easily injected than methadone, and it cannot be distinguished from heroin in a urine screening, limiting the usefulness of urine screens during treatment.

We identified one prospective, randomized...
study that compared methadone with slow-release morphine maintenance that included 24 women in each arm.\textsuperscript{29} No difference in neonatal outcomes, including neonatal abstinence syndrome, was seen between the two groups. Mothers taking slow-release morphine had a significant decrease in the use of benzodiazepines and other opiates. Two smaller observational studies showed that pregnant women taking slow-release morphine were significantly less likely to use benzodiazepines or additional opioids while undergoing treatment.\textsuperscript{30,31} A hypothesized advantage of morphine is a decreased duration of neonatal abstinence syndrome owing to its shorter half-life compared with methadone.\textsuperscript{30}

**Is neonatal abstinence syndrome a problem?**

Neonatal abstinence syndrome has not been associated with long-term neurodevelopmental harms in children, whereas ongoing maternal substance use is associated with poor developmental outcomes in children.\textsuperscript{32} The syndrome is time-limited as the infant withdraws from in utero exposure to an opioid. No association has been found between a mother’s methadone dose and the severity of symptoms of neonatal abstinence syndrome.\textsuperscript{33,34} Furthermore, pharmacodynamic studies show that escalations in dose are needed to maintain the therapeutic effect as pregnancy progresses owing to changes in methadone metabolism.\textsuperscript{35}

**Is there a role for detoxification in pregnancy?**

An early observational study showed similar outcomes among pregnant women who used heroin and had undergone medical detoxification compared with a control group consisting of pregnant women with no opioid dependency.\textsuperscript{36} However, medical detoxification was deemed a failure because of its inability to provide durable abstinence. This study was contrasted by two early case reports documenting adverse pregnancy outcomes in women undergoing acute heroin withdrawal rather than medically managed detoxification.\textsuperscript{37,38} This contrasting evidence led to a resurgence of interest in medical detoxification in pregnancy in the 1990s. Complete opioid detoxification was recommended in a 2002 publication, with the aim of eliminating neonatal abstinence syndrome.\textsuperscript{39}

Among the five retrospective case series involving women with heroin addiction, there is no consensus on the rate of methadone taper or the superiority of inpatient versus outpatient detoxification (Box 4).\textsuperscript{40-44} Although the literature cites concerns for increased rates of miscarriage with detoxification during the first trimester and increased rates of preterm labour with detoxification during the third trimester, this effect was not shown.\textsuperscript{40,43} Neonatal outcomes, when reported, were inconsistent. In addition, maternal heroin use postpartum and ongoing addiction treatment postpartum were not reported.

We recommend that acute detoxification in pregnancy should be abandoned, given the evidence, with the exception of women who decline opioid substitution therapy. In this circumstance, a woman should be given the opportunity to transfer into an opioid substitution program at any time if she elects to do so or if she is unable to successfully taper off of opioids. Postpartum rehabilitation services must be provided for all women, particularly those who have chosen abstinence.

**How does opioid dependence in pregnancy affect rural or remote Aboriginal populations?**

Canada’s Aboriginal communities are predominantly in rural and remote areas and are disproportionately affected by opioid dependence, with rates between 50% and 80%.\textsuperscript{47} Nonmedical use of prescription opioids is more common than heroin use,\textsuperscript{47,48} and the route of exposure is more often oral than intravenous.\textsuperscript{48} A 2012 descriptive report from Northwestern Ontario questioned whether the benefits seen with methadone in people who use heroin are applicable in remote Aboriginal communities where women engage in binge use of prescription opioids owing to...
intermittent drug availability rather than daily use of heroin. No evidence supports or refutes this claim.

A prevalence study involving First Nations women receiving antenatal care in Sioux Lookout, Ontario, showed that opioid use increased from 8% to 18% during the 18-month study. Neonatal abstinence syndrome in infants exposed to opioids was 30% overall and 66% among infants born to women who used opioids daily. Of the children affected, only 7% required pharmacologic treatment, whereas the remainder received supportive care. Pilot studies are in progress in First Nations communities in Northwestern Ontario to investigate community-based provision of buprenorphine maintenance therapy where methadone is not available and to provide locally trained maternal support workers for women with opioid dependence during pregnancy and continuing until the child reaches 3 years of age.

Conclusion

Although methadone is the gold standard for treatment of opioid dependency in pregnancy, methadone therapy is often not feasible in rural and remote settings. Proposed alternatives to methadone, such as opioid detoxification and slow-release morphine substitution, have limited evidence to support their use in pregnancy. Stronger evidence exists to support buprenorphine maintenance therapy.

A fundamental flaw of each study is the choice of birth as an end point. This enables reporting of nominal success rates in terms of abstinence at the time of delivery and neonatal abstinence syndrome. However, the true end

<table>
<thead>
<tr>
<th>Box 4: Summary of retrospective case series describing methadone detoxification in pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference</td>
</tr>
<tr>
<td></td>
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<tr>
<td>Maas et al. 199042 n = 58</td>
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<tr>
<td>Dashe et al. 199840 n = 34</td>
</tr>
<tr>
<td>Luty et al. 200343 n = 101</td>
</tr>
<tr>
<td>Jones et al. 200844 n = 123</td>
</tr>
<tr>
<td>Stewart et al. 201341 n = 95</td>
</tr>
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Note: APGAR = appearance, pulse, grimace, activity, respiration; MMT = methadone maintenance therapy; NAS = neonatal abstinence syndrome; PTD = preterm delivery.
point is either sustained abstinence or stable opioid substitution therapy that would enable the new mother to parent her child. In this regard, the literature suggests that postpartum treatment is generally not provided to women in rural and remote communities, which contributes to high rates of relapse and apprehension of infants into custody.21,23,44

Despite knowledge of harm and rising rates of opioid dependence in pregnancy, there is a paucity of high-quality evidence in this area and none that specifically addresses the needs of rural and remote communities or Aboriginal communities, polysubstance use or postpartum management. There is an overwhelming need for training in opioid dependence therapy, regulatory changes to ensure pregnant women have access to appropriate medications and greater access to comprehensive treatment both during pregnancy and postpartum in rural and remote settings.

References
2. Kaltenbach K, Berghella V, Finnegan L. Opioid dependence and postpartum in rural and remote settings. Training in opioid dependence therapy, regulatory and remote communities or Aboriginal paucity of high-quality evidence in this area and none that specifically addresses the needs of rural and remote communities or Aboriginal communities, polysubstance use or postpartum management. There is an overwhelming need for training in opioid dependence therapy, regulatory changes to ensure pregnant women have access to appropriate medications and greater access to comprehensive treatment both during pregnancy and postpartum in rural and remote settings.


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Contributors: Naana Afua Jumah was responsible for the primary literature review, the analysis and interpretation of data and the drafting and revising of the article. Lisa Graves and Meldon Kahan contributed to the analysis and interpretation of the data and revised the article for important intellectual content. All of the authors approved the final version submitted for publication and agree to act as guarantors of the work.
Feasibility and Outcomes of a Community-Based Taper-to-Low-Dose-Maintenance Suboxone Treatment Program for Prescription Opioid Dependence in a Remote First Nations Community in Northern Ontario

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ABSTRACT

Objective: Non-medical prescription opioid use (NMPOU) is a major health problem in North America and increasingly prevalent among First Nations people. More than 50% of many Nishnawbe Aski Nation communities in northern Ontario report NMPOU, resulting in extensive health and social problems. Opioid substitution therapy (OST) is the most effective treatment for opioid dependence yet is unavailable in remote First Nations communities. Suboxone (buprenorphine and naloxone) specifically has reasonably good treatment outcomes for prescription opioid (PO) dependence. A pilot study examining the feasibility and outcomes of a community-based Suboxone taper-to-low-dose-maintenance program for PO-dependent adults was conducted in a small NAN community as a treatment option for this particular setting.
Design: Participants (N = 22, ages 16–48 years) were gradually stabilized on and tapered off Suboxone (provided on an outpatient and directly-observed basis) over a 30-day period. Low dose maintenance was offered post-taper to patients with continued craving and relapse risk; community-based aftercare was provided to all participants.

Results: Of 22 participants, 21 (95%) completed the taper phase of the program. Fifteen (88%) of 17 participants tested by urine toxicology screening had no evidence of PO use on day 30. No adverse side effects were observed. All but one of the taper completers were continued on low-dose maintenance.

Conclusion: Community-based Suboxone taper-to-low-dose-maintenance is feasible and effective as an initial treatment for PO-dependence in remote First Nations populations, although abstinence is difficult to achieve and longer term maintenance may be required. More research on OST for First Nations people is needed; existing OST options, however, should be made available to First Nations communities given the acute need for treatment.

KEYWORDS

Aboriginal health, addiction, community-based treatment, prescription opioids, opioid substitution treatment
INTRODUCTION

In North America, non-medical prescription opioid use (NMPOU)—involving drugs such as OxyContin (oxycodone), hydromorphone, and morphine—and related harms have become a major public health crisis in recent years, causing extensive morbidity and mortality (Dhalla et al., 2009; Fischer & Argento, in press; Manchikanti, Fellows, Allinani, & Pampati, 2010). In Canada, up to 6.3% of the general adult population report NMPOU in the past year with even higher rates reported for young people, including secondary students (Shield, Isomisala, Fischer, & Rehm, 2012). Both prescription opioid (PO)-related accidental deaths and admissions to substance use treatment facilities have risen substantially in Canadian jurisdictions (Dhalla et al., 2009; Fischer, Nakamura, Rush, Rehm, & Urbanowski, 2010).

First Nations people are among the most socio-economically disadvantaged groups in Canada, experiencing substantially poorer health outcomes for chronic diseases (e.g., cardiovascular problems and diabetes) as well as a higher incidence of premature mortality compared to non-First Nations populations (Dyck, Osgood, Lin, Gao, & Strang, 2010; Health Canada, 2009). First Nations people also have much higher rates of substance use (alcohol, tobacco, and injection drug use, among others) and are consistently found to be at much greater risk for morbidity and mortality outcomes such as HIV or hepatitis C transmission and drug overdose (Duncan et al., 2011; Health Canada, 2009; Wu et al., 2007). First Nations people are considered particularly vulnerable to substance abuse due to the systemic impact of social determinants of health—e.g., lack of adequate housing or employment—and trauma, such as the legacy of residential schools. The loss of distinct cultural knowledge and capital related to traditions, land, and people is also widely accepted as a pathway to substance abuse, especially at an early age (Dell et al., 2012; Gracey & King, 2009).

Recently, NMPOU has become acutely problematic in First Nations communities, including the Nishnawbe Aski Nation (NAN). The NAN, encompassing most of Ontario’s northern land mass, is comprised of 49 smaller communities and has a total population of around 45,000. In some NAN communities, more than 50% of the adult population are reported to be PO (mainly OxyContin) abusers and in need of treatment; similar data have been reported for high school populations (Nishnawbe Aski Nation Think Tank, 2011). A recent study from a NAN health centre found that 17.2% of pregnant women sampled abused POs (oxycodone) during pregnancy, with a significant percentage of exposed neonates experiencing opioid withdrawal symptoms or neonatal abstinence syndrome (Kelly et al., 2011). In addition, multiple NAN communities have reported major increases in family and child neglect, crime and violence, and overall community decay due to NMPOU. On this basis, the NAN Chiefs-in-Assembly formally declared a “state of emergency” related to PO misuse, urgently requesting assistance and intervention support (Nishnawbe Aski Nation Think Tank, 2011).

Opioid pharmacotherapy, specifically opioid substitution therapy (OST) with either methadone or buprenorphine, is considered the gold standard of treatment for opioid dependence, with both drugs included on the World Health Organization’s list of essential medicines. Methadone and buprenorphine have demonstrated similarly beneficial outcomes in OST, such as reductions in illicit opioid use, health risk behaviors, and overdose (Mattrick, Kimber, Breen, & Davoli, 2008; White & Lopatto, 2007). OST is widely available and easily accessible to most Canadians. The number of people in methadone maintenance treatment in Ontario has doubled to more than 28,000 in recent years, primarily due to patients with PO dependence (College of Physicians and Surgeons of Ontario, 2009). However, OST is not ordinarily available to First Nations people in remote communities, as no treatment infrastructure exists. Patients who need OST are required to travel or move to distant urban centres to receive treatment.

While methadone has been used for maintenance treatment purposes in Canada for decades, Suboxone (a combined buprenorphine/naloxone formulation, administered via sublingual tablet) is a relatively new OST drug that has shown reasonably good outcomes in treating opioid dependence (Fudala et al., 2003; Kahan, Srivastava, Ordean, & Cirone, 2011; Ling et al., 2005). Health Canada approved Suboxone to treat opioid dependence in 2007, but the drug was not included for coverage under the Federal Non-Insured Health Benefits Program (FNHIHP) for First Nations people at the time of study. Based on its pharmacodynamics and pharmacokinetics, buprenorphine has a longer duration of action than methadone as well as a ceiling effect, and therefore has superior withdrawal resolution as well as a lower risk of abuse and overdose (Alho, Sinclair, Vuori, & Holopainen, 2007; Dunn, Sigmon, Strain, Heil, & Higgins, 2011; Gowing, Ali, & White, 2005).
Suboxone Treatment in First Nations

2009). Suboxone has also been used for opioid detoxification treatment approaches, most studies to date, however, involve only heroin users. A recent study found that a 30-day Suboxone detoxification regimen was more effective than a five-day regimen in terms of treatment completion (16% vs. 4% of participants) and producing opioid-free urines (4.3 vs. 4.8 positive specimens) (Katz et al., 2009). Two recent studies focusing on short-term Suboxone detoxification treatment for PO dependence have found that only a minority (i.e., less than one-third) of treatment completers have opioid-free urine at the end of treatment (Sigmon, Dunn, Badger, Heil, & Higgins, 2009; Weise et al., 2011).

Given the absence of OST options, as well as the urgent need for effective NMPOU treatment in remote areas, a pilot study to explore the feasibility and potential benefits of a Suboxone taper-to-low-dose-maintenance treatment program was conducted in a small NAN community with high rates of PO dependence. Specifically, the study sought to examine a workable and effective treatment option that would ideally accomplish a taper-to-abstinence outcome. Post-taper low-dose maintenance would be an option for those with continued craving and relapse risk in this particularly challenging setting. The NAN community in which the study took place (the name of the community was kept anonymous to protect the identities of study participants) has a total population of around 300 people, with 75% of adults estimated to be PO-dependent. The community is located 400 km from the nearest city and is accessible only by air. It has an elementary school, a small variety store, and a fuel supply station. Basic health (i.e., nursing) services are provided Monday to Friday, but all serious health problems require air transportation to the nearest hospital 160 km away.

METHODS

For purposes of this study, investigators established a customized basic infrastructure and protocol for the Suboxone taper-to-low-dose-maintenance program in the target population. The treatment program was delivered in the community's local health station by a team comprised of an off-site physician, a nurse practitioner and case manager with extensive addiction care experience, and an on-site registered nurse and addiction worker. The off-site team members were present at the health station during the first (induction) and fourth (tapering) weeks of the initial 30-day phase of the program. Further consultations occurred with opioid dependence treatment specialists in the Addictions Program at the Centre for Addiction and Mental Health (CAMH) in Toronto, Ontario.

The study involved a convenience sample, in that community members with known PO abuse were approached and invited to participate in the pilot treatment program. A total of 22 participants with PO dependence were enrolled in the study. The principal treatment objective was to stabilize participants on, and completely taper them off, Suboxone by day 30 of the program. Patients for whom it was clinically necessary due to continued craving and/or relapse risk would remain on low-dose Suboxone maintenance post-taper. Opioid dependence and treatment eligibility were confirmed by a comprehensive medical examination, including an assessment of opioid use history, urine toxicology screening (UTS), and the Clinical Opiate Withdrawal Scale (COWS) (Tomplins et al., 2009). Exclusion criteria were confirmed pregnancy and currently acute, serious mental health episodes. Participants were required to not consume any psychoactive substances in the 24 hours before starting treatment. Initial induction was 2–4 mg of Suboxone, followed by another 4 mg dose on the same day as determined by withdrawal symptoms. Suboxone doses were increased to optimum levels of 8–16 mg over the following three days. Suboxone was dispensed daily and administered under direct observation at the treatment site on an outpatient basis. In cases of continued withdrawal problems, participants received ancillary medications (e.g., ibuprofen or clonidine). After successful stabilization, Suboxone tapering began on days 8–9, with successive dose decrements of 2 mg every three days. Both UTS and COWS were performed at the end of the 30 day taper period and each patient was assessed individually for a personalized treatment aftercare plan, including the potential need for continued low-dose Suboxone maintenance. Aftercare programming consisted of several weeks of individual and group counselling focusing on relapse prevention, incorporating motivational enhancement, health education, and spiritual support.

Suboxone medications were kept in the care of on-site health staff, stored at the health station in a lockbox with two padlocks. The local police constable provided safe storage at the police office when the nurse was not in the community. Following the practice guidelines for community-based Suboxone treatment programs, the treatment staff completed a medication register. There were no incidents of lost or stolen medication during the study period.
TABLE 1. SOCIO-DEMOGRAPHIC AND OPIOID USE CHARACTERISTICS OF THE SAMPLE (N = 22)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Measurement</th>
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<tbody>
<tr>
<td>Gender (male)</td>
<td>45.0% (n = 10)</td>
</tr>
<tr>
<td>Age (years)</td>
<td>Mean: 26.7 (SD: 8.2); Median: 23.5</td>
</tr>
<tr>
<td></td>
<td>Range: 18.0–48.0</td>
</tr>
<tr>
<td>Employed</td>
<td>32.0% (n = 7)</td>
</tr>
<tr>
<td>Duration of opioid use (years)</td>
<td>Mean: 3.7 (SD: 1.89); Median: 4.0</td>
</tr>
<tr>
<td></td>
<td>Range: 1.0–7.0</td>
</tr>
<tr>
<td>Opioid use (morphine equivalent, mg/day)</td>
<td>Mean: 203.1 (SD: 119.8); Median: 180.0</td>
</tr>
<tr>
<td></td>
<td>Range: 45.7–481.2</td>
</tr>
<tr>
<td>OxyContin use (mg/day)</td>
<td>Mean: 87.5 (SD: 65.5); Median: 80.0</td>
</tr>
<tr>
<td></td>
<td>Range: 0.0–240.0</td>
</tr>
<tr>
<td>Proportion of OxyContin in total opioid use</td>
<td>Mean: 83.7% (SD: 26.4%); Median: 95.2%</td>
</tr>
<tr>
<td></td>
<td>Range: 0.0–100.0</td>
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</table>

The initial taper phase of the study took place October 3–November 2, 2011. Participants signed a consent and treatment agreement. The specific objectives of the study were to assess treatment feasibility and progress, as well as basic outcomes at the end of the initial 30-day phase of the program.

RESULTS

The treatment sample consisted of 10 males and 12 females, with an age range of 16–48 years (see Table 1). Participants had abused POs for a mean duration of 3.7 years; most abuse was in the form of OxyContin and, to a lesser extent, Percocet (oxycodone and acetaminophen). Of the total 22 patients enrolled, 21 (95%) completed the initial 30-day taper phase of the Suboxone taper-to-low-dose-maintenance program (see Table 2). Fifteen of 17 (88%) tested participants had PO-free urine (measured by UTS) on day 30 of the initial taper phase. No adverse side effects were observed in the cohort. While the primary objective of the treatment program was opioid abstinence at the end (day 30) of the initial taper phase of the program, following the individualized assessments the treatment team decided to have 19 of the 21 taper phase completers continue on low-dose Suboxone maintenance (most at 4 mg/day) for a short-term (i.e., 6–8 week) period. These decisions were made primarily because of continued substantive opioid cravings, to try to prevent the acute possibility of relapse to PO abuse in these patients. One participant was comfortable being completely tapered off of Suboxone, while a female participant with pregnancy detected and confirmed after the start of treatment was switched to low-dose Suboxone maintenance when the application for the clinical standard of buprenorphine monoformulation maintenance was not approved by Health Canada.

DISCUSSION

This study assessed a community-based Suboxone taper-to-low-dose-maintenance program for PO-dependent individuals in a small and remote First Nations community with an extremely high rate of PO abuse, yet no ready access to adequate regulatory treatment resources or programming (e.g., OST). This small, exploratory study confirmed the overall feasibility of the Suboxone taper-to-low-dose-maintenance program as implemented in this distinctly challenging setting. The findings contribute to the evidence on evolving models for the delivery of community-based health care—in this case, addiction treatment—in remote and disadvantaged First Nations communities (Hay, Varga-Toth, & Hines, 2006; Rygh & Hjordal, 2007). Investigators easily recruited participants into the treatment program, and the collaboration between off-site addiction treatment specialists (either on a fly-in basis for key phases of the treatment program or by consulting over distance) and on-site care providers was effective and worked well. On this basis, this study represents a possible and workable model for opioid dependence treatment in remote, and specifically First
TABLE 2. SUBOXONE TREATMENT (TAPER PHASE) PARAMETERS AND OUTCOMES (N = 22)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Mean (SD)</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial COWS' score</td>
<td>8.1 (3.7)</td>
<td>8.0</td>
<td>1.0–15.0</td>
</tr>
<tr>
<td>Suboxone dose on day 1 (mg)</td>
<td>7.1 (1.6)</td>
<td>8.0</td>
<td>4.0–8.0</td>
</tr>
<tr>
<td>Maximum daily Suboxone dose (mg)</td>
<td>14.7 (2.3)</td>
<td>16.0</td>
<td>8.0–16.0</td>
</tr>
<tr>
<td>COWS score on day 30</td>
<td>4.2 (2.0)</td>
<td>4.0</td>
<td>1.0–9.0</td>
</tr>
<tr>
<td>30-day taper phase completers</td>
<td>95.0% (n = 21)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UTS specimens negative for opioids on day 30 (n = 17 validly administered tests)</td>
<td>88.0% (n = 15)</td>
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<tr>
<td>Taper completers continued on low-dose maintenance of Suboxone or Subutex (buprenorphine)</td>
<td>95.0% (n = 20)</td>
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*Clinical Opiate Withdrawal Scale

Nations, communities with extensive and urgent care needs (Gray & Saggi, 2009; Wakeman, 2009).

The study was effective in that the vast majority of participants completed the initial taper phase of the Suboxone taper-to-low-dose-maintenance treatment program, i.e. they were successfully retained in treatment for the 30-day taper period, and were successfully transitioned onto low-dose Suboxone maintenance, even though the idealized objective of zero-dose tapering (i.e., opioid abstinence) was not possible for the majority of participants. Ongoing craving symptoms and the risk of immediate relapse to PO misuse were too great for many participants, and therefore these individuals received the low-dose Suboxone maintenance option. In this respect, the study confirms findings from other research suggesting that it is difficult for most opioid-dependent individuals to achieve abstinence from opioids following short-term Suboxone detoxification or taper regimens (Sigmon et al., 2009; Weiss et al., 2011; Woody et al., 2008). It is unknown whether longer taper regimens (e.g., 45 or 60 days) would help improve the rate of successful treatment outcomes towards opioid abstinence or detoxification (Dunn et al., 2011; Ling et al., 2009; Weiss et al., 2011). It has also not been effectively established what patient characteristics may predict more successful short-term detoxification or taper-to-abstinence outcomes. Based on non-systematic impressions from the present study, it appears that those participants with long and intensive PO use histories were less likely to be able to successfully taper off of Suboxone at the 30-day mark. Short-term low-dose Suboxone maintenance may help some patients to achieve a successful zero-dose taper (i.e., abstinence). For others, opioid dependence may be a chronic condition requiring long-term or infinite maintenance treatment (Sigmon et al., 2009; Weiss et al., 2011). Our ongoing research will document and assess the low-dose maintenance phase, as well as future treatment courses and outcomes, of the study population in future publications.

CONCLUSIONS

Our study has important implications for research and practice. First, longer term follow-up is needed to assess long-term OST options and outcomes in opioid-dependent First Nations populations. Second, a larger scale study should examine treatment outcomes for different opioid treatment regimens (e.g., shorter and/or longer term Suboxone taper or maintenance regimens or use of other OST agents) in PO-dependent First Nations populations. Given the extensive and acute PO misuse crisis in the NAN and other First Nations communities, OST infrastructure and services for opioid dependence in remote First Nations communities must be quickly improved (Kelly et al., 2011; Nishnawbe Aski Nation Think Tank, 2011). In the absence of these measures, existing OST options such as the Suboxone taper-
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to–low-dose-maintenance model used in this study should be made readily available to those in need.

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