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Future Directions for Medication Assisted Treatment for Opioid Use Disorder with American Indian/Alaska Natives

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Abstract

The U.S. is experiencing an alarming opioid epidemic, and although American Indians and Alaska Natives (AI/AN) are especially hard hit, there is a paucity of opioid-related treatment research with these communities. AI/ANs are second only to Whites in the U.S. for overdose mortality. Thus, the National Institute on Drug Abuse convened a meeting of key stakeholders to elicit feedback on the acceptability and uptake of medication assisted treatment (MAT) for opioid use disorders (OUDs) among AI/ANs. Five themes from this one-day meeting emerged: (1) the mismatch between Western secular and reductionistic medicine and the AI/AN holistic healing tradition; (2) the need to integrate MAT into AI/AN traditional healing; (3) the conflict between standardized MAT delivery and the traditional AI/AN desire for healing to include being medicine free; (4) systemic barriers; and (5) the need to improve research with AI/ANs using culturally relevant methods. Discussion is organized around key implementation strategies informed by these themes and necessary for the successful adoption of MAT in AI/AN communities: (1) type of medication; (2) educational interventions; (3) coordination of care; and (4) adjunctive psychosocial counseling. Using a community-based participatory research approach is consistent

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with a “two eyed seeing” approach that integrates Western and Indigenous worldviews. Such an approach is needed to develop impactful research in collaboration with AI/AN communities to address OUD health disparities.

The U.S. is in the midst of an alarming opioid epidemic, resulting in increased rates of overdose (OD). Since 1999, the number of OD deaths involving opioids quadrupled (1). In 2015 alone, there were 33,091 opioid-related OD deaths (2). These trends are magnified among American Indians/Alaska Natives (AI/ANs) compared to other racial/ethnic groups. AI/ANs are second only to Whites in the rate of OD mortality (8/100,000 versus 12/100,000 deaths, respectively) (1). AI/AN OD deaths vary substantially by state, with highest OD mortality in Minnesota (26/100,000), Washington (21/100,000), Alaska and Oklahoma (both 13/100,000). Although specific tribal data is scarce, a recent survey of one tribe revealed alarming rates of non-medical use of prescription drugs (30% lifetime; 13% past month), especially among those aged 18–25 (47% lifetime; this is compared to 5% for the U.S. overall) (3, 4). A focus on these AI/AN disparities, particularly in high risk states, is warranted.

Pharmacological Treatment of Opioid Use Disorders

Three highly effective pharmacological medications for the treatment of OUD are currently available: methadone, an agonist medication; buprenorphine/naloxone, a partial agonist medication that does not reproduce opioid effects even at higher doses and thus has lower abuse liability; and naltrexone, an antagonist medication which requires that patients be fully detoxified from opioids before initiation (to not precipitate withdrawal) (5). Results from rigorous clinical trials demonstrate that “medications for addiction treatment (or MAT)” produce superior abstinence and treatment retention outcomes compared to psychosocial treatments without medication or with placebo (6). More specifically, methadone has been shown to yield twice the abstinence rates compared to placebo or detox (6, 7). Buprenorphine/naloxone is highly efficacious with three to eight times the abstinence rates compared to placebo or detox alone (8–10). Finally, extended release injection naltrexone, a monthly injectable, has demonstrated similar effectiveness to buprenorphine/naloxone, however there are greater retention challenges during induction onto the medication which requires the patient to be opioid free to avoid precipitating withdrawal (9, 11).

Pharmacological Treatment of Opioid Use Disorder with AI/ANs

To date, there are no published outcome studies of MAT for opioid use disorder OUD among AI/ANs in the United States. One randomized controlled trial (RCT) of naltrexone plus sertraline for alcohol use disorder among Alaska Natives concluded that naltrexone implementation was feasible in rural areas and effective in this population (12). MAT outcome studies with AI/ANs are urgently needed. Currently, the number of SUD treatment programs that have successfully implemented MAT for OUD among AI/AN is unknown. A survey study of AI/AN providers in 192 SUD treatment programs serving predominantly AI/AN clients found that only 28% reported MAT implementation, 44% did not implement MAT, and 28% skipped the section entirely due to lack of familiarity with MAT (13). Two of

the significant predictors of MAT implementation included perceived fit of MAT with their treatment approach and philosophy and perceived fit with staff expertise and training (13).

Qualitative research studies highlight barriers to the acceptability of MAT for OUD among AI/ANs. Momper and colleagues (14, 15) conducted two studies among AIs who were using opioids and providers on a reservation exploring opioid use and treatment preference. Results indicated a preference for controlling supply rather than treatment, and concerns about the use of Suboxone, including diversion and only using it until more prescription opioids were available.

More published research on facilitators, barriers, and outcomes of MAT among Indigenous patients exists in Canada and Australia. Earlier studies showed that among opioid injection drug users, Indigenous individuals with OUDs were less likely to receive, or took more time to initiate, traditional methadone maintenance therapy (16–18). Kerr et al. (16) attributed lower treatment engagement to a lack of Indigenous providers and culturally-appropriate treatment, as well as Indigenous communities emphasizing abstinence-based recovery.

Since these earlier studies, culturally-centered MAT services have been successfully implemented with Indigenous people in Australia and Canada (19–21). In Australia, success was attributed to the culturally-specific design, integrated care, and a focus on family and community wellness (21). In Canada, patients reported positive treatment outcomes, improvements in housing, employment, and family support, and general satisfaction and acceptance of MAT (20). Reported barriers were similar to other methadone maintained populations (e.g., lack of take home doses, community stigma) (20).

Understanding Multi-Systemic MAT Implementation Issues

Equally important to understanding acceptability, efficacy, and effectiveness of MAT for OUD are implementation factors that facilitate MAT delivery within AI/AN communities. *Structural barriers* include coverage for AI/AN treatment services (often limited to IHS programs which are underfunded), transportation, and the paucity of licensed buprenorphine prescribers (22, 23). Urban AI/AN may also face difficulties navigating the health care system, based in part on mobility, enculturation, and lack of formal tribal affiliation (24, 25). *Community barriers* may include stigma of substance use or treatment, limited family support, and misperceptions about MAT (26) such as MAT is substituting one “drug” with another. *Organizational barriers* include difficulties in attracting and retaining providers and staff especially in remote areas or on reservations. *Individual barriers* to MAT include attitudes of self-reliance, fear of treatment and social consequences, costs, and pessimistic attitudes toward treatment efficacy.

Western Science and Indigenous Ways of Knowing

In considering implementation of MAT with AI/AN communities, it is incumbent to acknowledge similarities and differences between Western medical models and traditional AI/AN healing (27, 28). While both aim to improve health, Western treatment is commonly secular while AI/AN healing focuses on spirituality and holistic wellness. For example, most Indigenous peoples utilize circle-based teachings of traditional knowledge for healing (29),

such as the medicine wheel. The medicine wheel is an Indigenous view of the person as equal parts mental, physical, emotional and spiritual (30) with the health of a person depending on the balance and integration of these dimensions (31). Western science is often reductionist and may study one area (e.g., biological) to the exclusion of other areas (psychological, social, cultural, spiritual). There is a need for Western and Indigenous people to collaborate as equal partners to successfully address AI/AN opioid related health disparities.

With regard to research, addressing health disparities and developing culturally appropriate and effective interventions for AIANs requires an approach that includes reciprocity between academic and community researchers. Community-based and tribal participatory research approaches are respectful and effective ways for academic and tribal communities to develop trust and collaborate through all phases of the research process, while sharing power and responsibility and ensuring that studies and their findings are relevant and culturally appropriate (32–34).

The methods and spirit of CBPR were used in organizing a National Institute on Drug Abuse (NIDA) meeting to bring together diverse stakeholders (i.e., AI/AN community members, AI/AN and non-AI/AN providers and researchers) to share perspectives on MAT for OUD among AI/AN communities. This meeting was convened to address (1) barriers to and acceptability and facilitators of MAT delivery and (2) research pathways to address OUD related health disparities among AI/ANs.

Method

Participants

Stakeholders invited to this one-day meeting included AI/AN community members, treatment providers and staff, AI/AN and non-AI/AN researchers and MAT prescribing medical doctors, and representatives of agencies such as NIDA, National Institute on Alcohol Abuse and Alcoholism (NIAAA), and IHS. Participants were from regions and states with high proportions of AI/ANs. This meeting took place at the NIDA headquarters in Bethesda, MD, in May 2017.

Procedure

The meeting began with an AI participant singing a traditional Navajo song. Three presenters provided an overview of the IHS MAT implementation efforts, national epidemiology related to opioids, and Native agency survey results on perspectives of MAT. This meeting was broadly organized by two moderated panels. The first panel provided Native community perspectives on MAT for OUD followed by discussion with the larger group. The second panel gave presentations on AI/AN models of substance misuse and recovery, the importance of culturally tailored psychosocial support services, qualitative research on opioid use and interventions, and barriers and facilitators of MAT implementation among AIANs. The final activity generated research ideas pertinent to MAT for OUD with AI/ANs. Each meeting participant was asked to write three critical research questions on an index card and discuss their ideas with the group.

The first author, using notes compiled during the meeting (by KV and DW), developed preliminary themes and completed the first draft of the results section, followed by review, edits, and clarification (35). All remaining authors read the results and offered comments on the themes. Regular planning conference phone calls were held over three months to build consensus on meeting themes and develop the discussion.

Results

Five themes emerged over the course of the meeting, illuminating barriers to and facilitators of MAT for OUD in AI/AN communities and related research directions. The main themes were (1) differences between Western delivery of MAT and AI/AN traditional healing; (2) the need to integrate MAT into AI/AN holistic healing; (3) conflicts between Western views of MAT outcomes with AI/AN views of wellness; (4) systemic barriers to MAT implementation; and (5) improvements needed for MAT research with AI/AN.

Secular/Unidimensional Versus Spiritual/Multidimensional Healing

One challenge to implementation of MAT for OUD with AI/AN communities is that Western medicine uses a secularized, unidimensional approach to physical and psychological health based on medication and behavioral treatment. This standardized implementation of MAT lacks an explicit integration of spirituality and culture. Some Western researchers and providers at the meeting did not arrive to the meeting with deep knowledge about AI/AN holistic healing with spirituality as the foundation. One Western medical doctor said he “guess(ed) spirituality was important,” and redirected the conversation. One Native community participant replied that spirituality is of utmost importance. She shared a story of an elder relative who had a traumatic boarding school experience and struggled with addiction for decades. He later reconnected with his AI/AN identity and culture, which helped him resolve his addiction and achieve 20 years of sobriety. Another AI/AN researcher shared that “we were taught not to take White man’s drugs. If we have problems, we find out how we are out of balance; how to take care of our mind, body, and soul.”

Integrating MAT and AI/AN Healing

A strong message from participants was the need to integrate MAT and AI/AN healing because EBT without cultural adaptation was unacceptable. One AI/AN participant said, “Where Western science has failed us is when we’ve been told to implement this tidy little box of evidence-based practice exactly as we’ve told you to.” Another AI/AN participant attributed the lack of AI/AN health improvement to using Western models while excluding culture. Another AI provider/researcher stated the need for MAT to be “culturally relevant” and to “take on the (Native) language.” Another AI/AN researcher shared how she views some SUD treatment practices as having a basis in traditional AI/AN healing. She observed group therapy for those on MAT and said traditionally AI/ANs sat in a circle and demonstrated love and compassion for one another.

One AI behavioral health provider has been integrating MAT into AI/AN healing and stated: AI/ANs “had ‘MAT’ long before MAT,” including traditional medicines (e.g., nettle soup)

and peyote in Native American Church (NAC) ceremonies. He advocated for integrating MAT into AI/AN healing tradition rather than adding AI/AN traditions into a MAT framework.

Western Views of MAT Success and AI/AN Desire to Be Drug-Free

Another cultural misalignment was the suggestion that MAT may be needed long-term to maintain positive outcomes while many AI/ANs desire complete healing, meaning abstinence from all drugs and pharmaceutical medications. Several meeting participants shared success stories of MAT with AI/ANs, yet there were several strong voices expressing concerns about AI/ANs using MAT long-term and the potential long-term side effects.

An AI/AN provider/researcher shared a commonly heard sentiment that using MAT was just “trading one drug for another.” One AI/AN researcher shared an adamant view she heard: “No way in hell will we do that. We’re not treating [addiction] with medication.” Some non-AI/AN providers of MAT shared how family members and reservation-based providers would tell their AI/ANs on MAT that they “are not clean,” they are “just using drugs,” and “when were [they] going to get off of [MAT]?” These providers spoke of no longer referring clients to reservation-based services but continuing treatment of clients at their own clinics.

Another concern raised by an AI/AN community member was the potential risk of using Suboxone while pregnant as she knew of pregnant women on MAT who had miscarried or whose babies had to detoxify from Suboxone or had died shortly after birth. In response, a non-AI/AN prescriber shared stories of pregnant women on MAT increasing prenatal care and improving birth outcomes: “14 babies born on Suboxone went home within 48 hours.” The community member responded that the neonatal unit was 90 miles away.

The skepticism of MAT prompted a non-AI/AN MAT provider to ask, “Why would you take MAT away” from the clients who are benefitting from it? She shared how clients on MAT were better in terms of health, self-esteem, and attending to responsibilities. While Western prescribers agreed that traditional healing and abstinence from opioids were preferable, some individuals may need MAT for life for the best outcomes. An AI/AN woman shared that the option for AI/AN patients to wean off of MAT should be an explicit option.

A medical physician/researcher asked how MAT is viewed differently by AI/ANs than other medications for chronic diseases such as diabetes and cardiovascular problems. One AI/AN researcher responded that we want to know “how to get people off of medicine” and “get people back to who we are as AI/AN.” One non-AI/AN in a MAT clinic agreed that “using drugs is not in line with (AI/AN) values.” One researcher shared cultural barriers to MAT, such as not being allowed to “go into the lodge” (traditional healing) if using MAT.

In an effort to reconcile competing goals of Western medical providers and AI/AN traditional healers, an academic researcher suggested the idea of a continuum of outcomes, such that some AI/ANs might not use MAT and achieve abstinence while others might use MAT long term as a positive outcome or as a step towards abstinence.

Systemic Barriers to MAT

Participants also shared systemic barriers to MAT. An AI medical provider shared that pharmacies often lack resources to provide the security needed to safeguard narcotics, necessitating clients travel over 20 miles to access MAT. Another noted the limited access to prescribers with “only one doctor to care for 3 counties”. Eligible MAT clients also are required to apply for Medicaid prior to IHS approval. A unique barrier to AI/AN MAT implementation involves tribal government: “[tribal] council attitudes determine what we can do” and council members change, so attitudes may change over time. Another barrier was the belief that “if we talk about it, we admit it;” that is, greater discussion gives more power to the problem.

Two barriers to MAT throughout the IHS system are the high turnover rates of providers and discrimination. Some providers only go to the rural clinics to repay IHS educational scholarship mandates. The turnover necessitates training and retraining. AI/AN participants stated the barriers of “institutional discrimination,” distrust in “border town hospitals,” the “lack of traditional values incorporated” into treatment, not receiving quality care from non-AI/AN providers, and a need to provide cultural training to non-AI/AN providers to address “prejudice in the medical field.” Finally, one non-AI/AN administrator at a MAT clinic said that they cannot hire any AI/AN providers because they “can’t find them,” while an AI/AN clinical director shared his focus on “building up a cadre of [AI/AN] providers” due to their cultural knowledge.

Fortunately, there were examples where systemic obstacles were successfully navigated. One AI/AN administrator shared how IHS has overcome some of these barriers by beginning with naloxone training and distribution among law enforcement, creation of an addiction treatment committee to focus on MAT, and partnering with other federal agencies to harness resources and efforts. An AI/AN medical doctor and a non-AI/AN researcher shared examples of recent approval by insurance and state to pay for traditional AI/AN healing within a Western clinic.

Improving Research on MAT with AI/ANs

While several AI/AN and non-AI/AN researchers were successfully conducting research with AI/AN communities, concerns were expressed. One AI/AN medical doctor highlighted that research studies were not recruiting urban AI/ANs, even in large cities with large AI/AN populations. Another AI/AN woman shared how tribal leadership perceives outside research as harmful based on past experiences, so tribally-based research initiatives have been an important development. One AI/AN woman saw a path forward for collaboration: “We are going to be focusing on our cultures and our values. And we want you [researchers] to come with us. We can build as many bridges as we can. But you have to walk over them.”

Future Research Topics

Table 1 summarizes research questions generated by participants, divided into nine categories, ranging from exploratory research (e.g., the scope of opioid use problems) to outcomes research. The majority of the topics concern issues of MAT implementation, including barriers and facilitators, the role of beliefs and attitudes about MAT, treatment

access considerations, workforce/training factors, and treatment development and cultural integration.

Discussion

Concern about the misuse of opioids and the negative impact on AI/AN people and communities was uniformly high, but attitudes toward MAT were mixed. While some barriers to MAT delivery overlap with mainstream concerns, others are unique to tribal communities. Some barriers are logistical and systemic, such as limited financial support for MAT, limited availability of and high turnover of skilled providers, and distance to treatment facilities. Other individual and community level barriers include misperceptions about OUD, lack of knowledge about the different types of MAT, concerns about length and secular nature of MAT treatment, and the stigma associated with addiction in general and MAT more specifically. Trading one drug for another and abstinence from all drugs and medications as the only positive outcome were common sentiments. These divergent perspectives reflect differences between Western views of addiction as primarily a biologically based “brain disease” treated by medications versus an Indigenous view that OUD is a problem of imbalance requiring a holistic approach to treatment and recovery.

Key Implementation Factors to Address Barriers

One way participants advocated to overcome MAT implementation barriers was to utilize AI/AN and Indigenous traditional healing approaches (e.g., 36, 37, 38). An Indigenous process of adaptation, a “two-eyed seeing” approach (39–41), “looks at”, gives equal weight to, and attempts to integrate both Indigenous and Western worldviews to address health concerns such as addictive behaviors (42–44). Similarly, Wood et al. (17) stressed the necessity of providing “interventions that are evidence-based and culturally appropriate and that have the full participation of the affected community (designing, planning, implementation and evaluation)” (p. 39).

To the authors knowledge, there are no published studies of cultural tailoring of medication treatment with AI/AN. However, several previous treatment outcome studies that culturally tailored evidence based treatment with AI/AN healing traditions may serve as guides. Examples include The Canoe Journey that adapted cognitive behavioral therapy among tribes in Washington State (Donovan et al, 2015), a cultural adaptation of motivational interviewing in partnership with AIs (Venner, Feldstein, & Tafoya, 2007), and a cultural adaptation of MI and the Community Reinforcement Approach (Venner et al, 2016).

Korthuis, et al. (45) reviewed implementation models of MAT in primary care settings and found four key components: (1) the type of medication used, (2) provider and community educational interventions, (3) coordination and integration of OUD treatment with other medical and psychological needs, and (4) adjunctive psychosocial counseling. While these components were identified in the “eye” of Western science, they also can be viewed through the “second eye” of Indigenous worldviews. Our meeting participants suggested eliciting the perspective and input of tribal stakeholders in various positions (e.g., tribal leaders and elders, community members, traditional healers, medical providers, and

substance abuse counselors and psychosocial service providers), in line with CBPR methods (46).

Medication type—While methadone has a long history of successful treatment of OUD, its implementation in many tribal communities is relatively minimal. This is due in part to regulatory burdens with respect to storing and dispensing the medication, requirement of daily observed dosing, and transportation difficulties where MAT clinics are far away. Buprenorphine is more amenable to primary care settings, which are often closer to, or are embedded in, tribal communities. AIAN individuals and communities may view oral and long-acting injectable naltrexone somewhat more favorably because it has neither the opiate-related effects nor can it be diverted. An alternative or adjunct that may be in line with Indigenous traditional treatment is medicinal cannabis, which recently is being explored as a MAT (47, 48). Similarly, peyote, used in NAC, has been described as an ethnopharmacologic agent that may have benefit in treating alcohol and OUDs (49), but with limited research.

While abstinence from all drugs is often viewed as the only positive outcome by many AI/ANs, MAT has demonstrated better outcomes in treating OUDs than non-medication assisted, abstinence-based treatment (6). Providers should inform patients and discuss the relative outcomes, risks, and benefits of each medication, as well as abstinence-based treatment, enabling the individual to make an informed treatment choice (35, 50). Also, if non-MAT abstinence is chosen, providers should suggest the need to reconsider MAT if relapse does occur (35).

Provider and community educational interventions—The meeting discussion illuminated that tribal members may have misunderstandings about SUDs and lack information on MAT, but also have legitimate concerns about MAT. Korthuis et al. (45) suggest the need for provider and community interventions to educate the community, families, patients and practitioners using a variety of methods. Among the many topics to be covered should be discussions of OUD as a chronic disorder that requires extended and ongoing treatment (51) and reducing SUD and treatment related stigma (52, 53). In order to facilitate dissemination, adoption, and implementation of MAT, providers and counselors also need to be better informed about and have a more favorable attitude toward MAT (54–56), suggesting the need for initial and ongoing training and continuing medical education.

Coordination and integration of OUD treatment with other needs—Individuals with OUD often have one or more co-occurring medical, psychological, social, familial, and spiritual problems that negatively impact their quality of life. While MAT has yielded improved quality of life (57, 58), additional interventions may be needed to maximize these changes (59) including integration of Western medicine with Indigenous ways in a “two-eyed seeing” approach (44). It is important to capitalize on these traditional healers who can “translate” evidence-based Western treatments within an AI/AN framework of holistic wellness and balance.

Adjunctive psychosocial counseling—While the added benefit of behavioral interventions in the delivery of MAT is still in question (e.g., 60), many providers and

researchers consider adjunctive psychosocial counseling with MAT as the gold standard (59, 61). Counseling during the early phases of MAT may enhance patients' motivation while later focus can shift to improving coping and relapse prevention skills (59). Meeting participants viewed MAT as providing "symptom relief" while adjunctive services in terms of a holistic approach was necessary for the return to balance and wellness. This view is consistent with the belief that Indigenous culture, with its traditions, values, and activities, is curative and a form of treatment (27, 37, 62). Furthermore, integrated MAT and Indigenous approaches produced high retention and abstinence, along with improvements in community level public health and wellness (36, 38).

Conclusion

There is a clear and compelling need to address the opioid epidemic in AI/AN communities, and MAT is currently the most effective approach in terms of mainstream treatment outcomes. For AI/AN communities to adopt and implement MAT, however, it is necessary to integrate MAT into AI/AN healing approaches and frameworks. This goal requires continued efforts to bridge the gap between Western medicine and traditional AI/AN healing. Training of medical providers is needed, so they honor the AI/AN emphasis on spirituality, holistic healing, and wellness. The proposed integration can be achieved through a community-based participatory approach based on the concept of "two-eyed seeing" where all parties involved need to have a shared vision. Using this approach to address critical research questions is an important next step for supporting AI/AN communities challenged by the opioid epidemic.

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References

1. Centers for Disease Control and Prevention. Wide-ranging online data for epidemiologic research (WONDER). In: National Center for Health Statistics; 2016.
2. Rudd RA, Seth P, David F, Scholl L. Increases in drug and opioid-involved overdose deaths — United States, 2010–2015. In: Morbidity and Mortality Weekly Report: Centers for Disease Control and Prevention; 2016.
3. Momper S, Tauiliili D, Delva J, Mueller-Williams A, Goral P. OxyContin use on a rural Midwest Indian reservation: Demographic correlates and reasons for using. *American Journal of Public Health* 2013;103(11):1997–1999. [PubMed: 24028230]
4. Substance Abuse and Mental Health Services Administration. Results from the 2010 National Survey on Drug Use and Health In: *Studies OoA*, editor. Rockville, MD; 2011.

5. Substance Abuse and Mental Health Services Administration. Medications for opioid use disorder. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2018.
6. Connery HS. Medication-assisted treatment of opioid use disorder: Review of the evidence and future directions. *Harvard Review of Psychiatry* 2015;23:63–75. [PubMed: 25747920]
7. Mattick RP, Ali R, White JM, O'Brien S, Wolk S, Danz C. Buprenorphine versus methadone maintenance therapy: A randomized double-blind trial with 405 opioid-dependent patients. *Addiction* 2003;98(4):441–452. [PubMed: 12653814]
8. Fudala PJ, Bridge TP, Herbert S, Williford WO, Chiang CN, Jones K, et al. Office-based treatment of opiate addiction with a sublingual-tablet formulation of buprenorphine and naloxone. *The New England Journal of Medicine* 2003;349(10):949–958. [PubMed: 12954743]
9. Woody GE. Advances in the treatment of opioid use disorders. *F1000Research* 2017;6(F1000 Faculty Rev):87 [PubMed: 28184294]
10. Weiss RD, Potter JS, Fellin DA, Byrne M, Connery HS, Dickinson W, et al. Adjunctive counseling during brief and extended buprenorphine-naloxone treatment for prescription opioid dependence: a 2-phase randomized controlled trial. *Archives of General Psychiatry* 2011;68(12):1238–1246 [PubMed: 22065255]
11. Lee JD, Nunes EV, Novo P, Bachrach K, Bailey GL, Bhatt S, et al. Comparative effectiveness of extended-release naltrexone versus buprenorphine-naloxone for opioid relapse prevention (X:BOT): A multicentre, open-label, randomised controlled trial. *Lancet* 2018 391(10118):309–318. [PubMed: 29150198]
12. O'Malley SS, Robin RW, Levenson AL, GreyWolf I, Chance LE, Hodgkinson CA, Romano D, Robinson J, Meandzija B, Stillner V, Wu R, & Goldman D Naltrexone alone and with sertraline for the treatment of alcohol dependence in Alaska Natives and Non-Natives residing in rural settings: A randomized controlled trial. *Alcoholism: Clinical and Experimental Research* 2008;32:1271–1283.
13. Rieckmann T, Moore L, Croy C, Aarons GA, Novins DK. National overview of medication-assisted treatment for American Indians and Alaska Natives with substance use disorders. *Psychiatric Services* 2017 68(11):1136–1143. [PubMed: 28712352]
14. Momper SL, Delva J, Reed BG. OxyContin misuse on a reservation: Qualitative reports by American Indians in talking circles. *Substance Use and Misuse* 2011;46(11):1372–1379. [PubMed: 21810072]
15. Momper S, Dennis M, Mueller-Williams A. Service provider views of OxyContin use on an Indian reservation: Traumatic effects on the tribal community. *Families in Society* 2012;93(4):312–318.
16. Kerr T, Marsh D, Li K, Montaner J, & Wood E Factors associated with methadone maintenance therapy use among a cohort of polysubstance using injection drug users in Vancouver. *Drug and Alcohol Dependence* 2005;80(3):329–335. [PubMed: 15964714]
17. Wood E, Montaner JS, Li K, Barney L, Tyndall MW, & Kerr T Rate of methadone use among Aboriginal opioid injection drug users. *Canadian Medical Association Journal* 2007;177(1):37–40. [PubMed: 17606937]
18. Yang J, Oviedo-Joekes E, Christian KM, Li K, Louie M, Schechter M & Spittal P The Cedar Project: Methadone maintenance treatment among young Aboriginal people who use opioids in two Canadian cities. *Drug and Alcohol Review* 2011;30:645–651. [PubMed: 21355933]
19. Black A, Khan S, Brown R, Sharp P, Chatfield H, & McGuiness C. An evaluation of opioid replacement pharmacotherapy in an urban Aboriginal Health Service. *Australian and New Zealand Journal of Public Health* 2007;31(5):428–432. [PubMed: 17931289]
20. Poirier NB. Evaluating an on-reserve methadone maintenance therapy program for First Nations peoples (Master's thesis). Thunder Bay, Ontario: Lakehead University; 2015.
21. Williams N, Williams N, Nasir R, Smither G, & Troon S Providing opioid substitution treatment to Indigenous heroin users within a community health service setting in Adelaide. *Drug and Alcohol Review* 2006;25(3):227–232. [PubMed: 16753646]
22. DeFlavio JR, Rolin SA, Nordstrom BR, Kazal LA, Jr. Analysis of barriers to adoption of buprenorphine maintenance therapy by family physicians. *Rural and Remote Health (Internet)* 2015;15:3019.

23. Hutchinson M, Bouchet A. Achieving organizational de-escalation: Exit strategy implementation among United States collegiate athletic departments. *Sport Management Review* 2014;17:347–361.
24. Norris T, Vines P & Hoeffel E The American Indian and Alaska Native Population: 2010. Washington, DC: United States Census Bureau; 2012.
25. Substance Abuse and Mental Health Services Administration. Results from the 2009 National Survey on Drug Use and Health: Volume I Summary of National Findings. In. Rockville, MD: Office of Applied Studies; 2010.
26. Landry M, Veilleux N, Arseneault JE, Abboud S, Barrieau A, & Bélanger M Impact of a methadone maintenance program on an Aboriginal community: a qualitative study. *CMAJ Open* 2016;4(3):E431–E435.
27. Gone JP, Looking PE. American Indian culture as substance abuse treatment: Pursuing evidence for a local intervention. *Journal of Psychoactive Drugs* 2011;43(4):291–296. [PubMed: 22400459]
28. Walters KL, & Simoni JM Reconceptualizing Native women's health: An "Indigenist" Stress-Coping Model. *American Journal of Public Health* 2002;92(4):520–524. [PubMed: 11919043]
29. Coyhis D, & Simonelli R The Native American healing experience. *Substance Use & Misuse* 2008;43:1927–1949. [PubMed: 19016172]
30. McCormick R Aboriginal approaches to counselling In: Kirmayer L, Valaskakis G, editors. *Healing traditions: the mental health of Aboriginal peoples in Canada*. Vancouver, BC: UBC; 2009 p. 337–354.
31. McCabe G Mind, body, emotions, and spirit: Reaching to the ancestors for healing. *Counseling Psychology Quarterly* 2008;21:143–152.
32. Cochran PA, Marshall CA, Garcia-Downing C, Kendall E, Cook D, McCubbin L, et al. Indigenous ways of knowing: Implications for participatory research and community. *American Journal of Public Health* 2008;98(1):22–27. [PubMed: 18048800]
33. Fisher P, & Ball T Tribal participatory research: Mechanisms of a collaborative model. *American Journal of Community Psychology* 2003;32(3/4):207–216. [PubMed: 14703257]
34. Lowe J, Riggs C, & Henson J Principles for establishing trust when developing a substance abuse intervention with a Native American community. *Creative Nursing* 2011;17(2):68–73. [PubMed: 21563633]
35. Srivastava A, Kahan M, Nader M. Primary care management of opioid use disorders: Abstinence, methadone, or buprenorphine-naloxone? *Canadian Family Physician* 2017;63(3):200–205. [PubMed: 28292795]
36. Kanate D, Folk D, Cirone S, Gordon J, Kirlew M, Veale T, et al. 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. *Canadian Family Physician* 2015;61(2):160–165. [PubMed: 25821874]
37. Legha RK, Novins D. The role of culture in substance abuse treatment programs for American Indian and Alaska Native communities. *Psychiatric Services* 2012;63(7):686–692. [PubMed: 22588198]
38. Mamakwa S, Kahan M, Kanate D, Kirlew M, Folk D, Cirone S, et al. Evaluation of 6 remote First Nations community-based buprenorphine programs in northwestern Ontario: Retrospective study. *Canadian Family Physician* 2017;63(2):137–145. [PubMed: 28209683]
39. Bartlett C, Marshall M, Marshall A. Two-eyed seeing and other lessons learned within a co-learning journey of bringing together Indigenous and mainstream knowledges and ways of knowing. *Journal of Environmental Studies* 2012;2:331–340.
40. Iwama M, Marshall M, Marshall A, Bartlett C. Two-eyed seeing and the language of healing in community-based research. *Canadian Journal of Native Education* 2009;32(2):3–23.
41. Martin DH. Two-eyed seeing: A framework for understanding Indigenous and Non-Indigenous approaches to Indigenous health research. *Canadian Journal of Nursing Research* 2012;44(2):20–42.
42. Hall L, Dell CA, Fornssler B, Hopkins C, Mushquash C, Rowan M. Research as cultural renewal: Applying two-eyed seeing in a research project about cultural interventions in First Nations

- addictions treatment. *International Indigenous Policy Journal* 2015;6(2):1–15. [PubMed: 27867445]
43. Marsh T, Cote-Meek S, Toulouse P, Najavits L, Young N. The application of two-eyed seeing decolonizing methodology in qualitative and quantitative research for the treatment of intergenerational trauma and substance use disorders. *International Journal of Qualitative Methods* 2015:1–13.
 44. Rowan M, Poole N, Shea B, Mykota D, Farag M, Hopkins C, et al. A scoping study of cultural interventions to treat addictions in Indigenous populations: Methods, strategies and insights from a Two-Eyed Seeing approach. *Substance Abuse Treatment, Prevention, & Policy* 2015;10(26).
 45. Korthuis PT, McCarty D, Weimer M, Bougatsos C, Blazina I, Zakher B, et al. Primary care-based models for the treatment of opioid use disorder: A scoping review. *Annals of Internal Medicine* 2017;166(4):268–278. [PubMed: 27919103]
 46. Jacklin K, Kinoshameg P. Developing a participatory aboriginal health research project: “Only if it’s going to mean something”. *Journal of Empirical Research on Human Research Ethics* 2008;3(2):53–67. [PubMed: 19385745]
 47. Corroon JM, Jr, Mischley LK, Sexton M. Cannabis as a substitute for prescription drugs - A cross-sectional study. *Journal of Pain Research* 2017;10:989–998. [PubMed: 28496355]
 48. Lucas P, Walsh Z. Medical cannabis access, use, and substitution for prescription opioids and other substances: A survey of authorized medical cannabis patients. *International Journal of Drug Policy* 2017;42:30–35. [PubMed: 28189912]
 49. Blum K, Fetterman SL, & Pascaros P. Peyote, a potential ethnopharmacological agent for alcoholism and other drug dependencies: Possible biochemical rationale. *Clinical Toxicology* 1977;11:459–472. [PubMed: 201426]
 50. Bart G. Maintenance medication for opiate addiction: the foundation of recovery. *Journal of Addictive Diseases* 2012;31(3):207–225. [PubMed: 22873183]
 51. American Society of Addiction Medicine. Treating opioid addiction as a chronic disease. In.
 52. Woods J, Joseph H. Stigma from the viewpoint of the patient. *Journal of Addictive Diseases* 2015;34(2–3):238–247. [PubMed: 26076048]
 53. Woods JS, Joseph H. Reducing stigma through education to enhance medication-assisted recovery. *Journal of Addictive Diseases* 2012;31(3):226–235. [PubMed: 22873184]
 54. Aletraris L, Edmond MB, Paino M, Fields D, Roman PM. Counselor training and attitudes toward pharmacotherapies for opioid use disorder. *Substance Abuse* 2016;37(1):47–53. [PubMed: 26168816]
 55. Knudsen HK, Ducharme LJ, Roman PM, Link T. Buprenorphine diffusion: The attitudes of substance abuse treatment counselors. *Journal of Substance Abuse Treatment* 2005;29(2):95–106. [PubMed: 16135338]
 56. Rieckmann T, Kovas AE, McFarland BH, Abraham AJ. Counselor attitudes toward the use of buprenorphine in substance abuse treatment: A multi-level modeling approach. *Journal of Substance Abuse Treatment* 2011;41(4):374–385. [PubMed: 21821379]
 57. Maremmani I, Pani PP, Pacini M, Perugi G. Substance use and quality of life over 12 months among buprenorphine maintenance-treated and methadone maintenance-treated heroin-addicted patients. *Journal of Substance Abuse Treatment* 2007;33(1):91–98. [PubMed: 17588494]
 58. Mitchell SG, Gryczynski J, Schwartz RP, Myers CP, O’Grady KE, Olsen YK, et al. Changes in quality of life following buprenorphine treatment: Relationship with treatment retention and illicit opioid use. *Journal of Psychoactive Drugs* 2015;47(2):149–157. [PubMed: 25950595]
 59. Copenhaver MM, Bruce RD, Altice FL. Behavioral counseling content for optimizing the use of buprenorphine for treatment of opioid dependence in community-based settings: A review of the empirical evidence. *American Journal of Drug and Alcohol Abuse* 2007;33(5):643–654. [PubMed: 17891657]
 60. Carroll KM, Weiss RD. The role of behavioral interventions in buprenorphine maintenance treatment: A review. *American Journal of Psychiatry* 2017;174(8):738–747.
 61. Pecoraro A, Ma M, Woody GE. The science and practice of medication-assisted treatments for opioid dependence. *Substance Use & Misuse* 2012;47(8–9):1026–1040. [PubMed: 22676570]

62. Fiedeldej-Van Dijk C, Rowan M, Dell C, Mushquash C, Hopkins C, Fornssler B, et al. Honoring Indigenous culture-as-intervention: Development and validity of the Native Wellness Assessment. *Journal of Ethnicity in Substance Abuse* 2017;16(2):181–218. [PubMed: 26980712]

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Table 1

Research questions for medication assisted treatment for opioid use disorders with American Indian / Alaska Native communities

1. Scope of the problem

- What are risk and protective factors for OUDs (including biological, social, and environmental factors)?
- What is the impact of prescription opioids and other prescription medications on the development of OUDs?
- How do different types of communities (e.g., reservation vs non-reservation; rural vs. urban) differ in terms of OUDs and treatment options?
- How does sex/gender influence OUD and treatment needs?

2. Existing approaches

- What are Native communities and clinics already doing to prevent and treat OUDs? Are there existing successful efforts that can be adapted and disseminated widely?
- What can be learned from MAT research with Indigenous populations internationally?

3. Research partnership considerations

- What are the most promising funding opportunities for developing research partnerships with Native tribes and clinics?
- How can researchers best support Native communities interested in adopting, expanding, or assessing MAT services?
- What are best practices for engaging tribal leaders, providers, traditional healers, community members, and patients in research?

4. Implementation barriers and facilitators

- What are the most important barriers/facilitators for MAT adoption, implementation, and sustained use?
- How might existing implementation strategies be adapted to aid communities in MAT implementation?
- How do existing health services, treatment funding, and healthcare policies impact MAT implementation among AI/ANs?

5. Beliefs and attitudes

- What do providers, community members, and opioid users already know or believe about MAT?
- What attitudes and preferences do communities and individuals have about medication for behavioral problems, including MAT? What is the role of culture, traditional medicine, and spirituality in these attitudes and preferences?
- What is the role of stigma in beliefs about attitudes about MAT?
- What factors contribute to changing attitudes about MAT?
- How do expectations about MAT differ between providers, patients, family members, and community members?

6. Treatment access

- What are the most promising ways to increase access to MAT?
- How might technological approaches expand the reach of MAT (e.g., telehealth, mobile apps)?
- How might MAT access be improved for AI/ANs at non-Native clinics?
- How can MAT be more accessible for those who migrate between reservation and urban areas, or who are transitioning to a different level of care?

7. Workforce/training

- How might more providers be trained to prescribe MAT?
- What are efficient ways for tribes to train tribal members to be professional and support staff working in MAT settings?
- How can tribal communities better collaborate with pharmacies to distribute MAT?
- What additional training should be provided to MAT prescribers?

8. Treatment development and integration

- How can MAT be integrated with traditional healing, spirituality, cultural factors, and/or ceremonies?

- How can existing MAT programs be adapted for use with AI/AN populations (both pan-tribal and for specific tribes/communities)?
- How can MAT be conceptualized as part of broad holistic services, encompassing multiple aspects of wellness (e.g., family wellness, housing, financial considerations)?
- What essential services are needed for patients interested in tapering off MAT?

9. Effectiveness/outcomes

- What are outcomes of MAT vs. treatment-as-usual or abstinence-only models?
- What are the best measures to track the range of outcomes important to communities (including spirituality, cultural identity, quality of life, and holistic wellness)?
- How might cultural components of treatment contribute to improved outcomes?