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Applied Policy Project:

Addressing the Opioid Crisis in Indian Country

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List of Acronyms and Abbreviations

American Indian and Alaskan Native (AI/AN)

Centers for Disease Control (CDC)

Emergency Department (ED)

U.S. Department of Health and Human Services (HHS)

Indian Health Service (IHS)

Medication-Assisted Treatment (MAT)

Memorandum of Understanding (MOU)

National Congress of American Indians (NCAI)

National Institute of Drug Abuse (NIDA)

Prescription Drug Monitoring Program (PDMP)

Substance Abuse and Mental Health Administration (SAMHSA)

Indian Country: this term is commonly used in legal reference to American Indian and Alaskan Native land holdings or statistical areas, such as reservations. This report uses the term "Indian Country" because it focuses on the population of American Indians and Alaskan Natives with tribal connections in traditional land areas.

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The Opioid Crisis in Indian Country

EXECUTIVE SUMMARY:

American Indians and Alaskan Natives are seeing some of the worst effects of the opioid crisis—a nationwide drug epidemic of increasing rates of addiction and overdose of prescription opioids or illicit drugs such as heroin. This epidemic is disproportionately affecting tribal communities. In 2015, AI/AN individuals ages 45-54 were most likely to experience an opioid-related death of any age and racial demographic, a 380 percent increase since 1999. The opioid crisis impacts nearly every aspect of a community, from crime rates and infectious diseases to newborn health and secondary trauma. This report synthesizes background literature, proposes several policy alternatives, and analyzes those alternatives on the criteria of 1) effectiveness at reducing opioid addiction and death 2) cost 3) administrative feasibility and 4) tribal sovereignty.

The National Congress of American Indians, as the largest, oldest, and most representative American Indian and Alaskan Native organization is uniquely situated to recommend policy solutions directly to tribal leaders and their communities. This report explores the some of the most common approaches to preventing opioid addiction and death, including:

1) Let Present Trends Continue: Prescription Drug Monitoring Programs
2) Implement a Naloxone Bystander Training Program
3) Increase Medication-Assisted Treatment Referral from Emergency Room
4) Adopt a Healing to Wellness Court

Evaluating policy options according to criteria, this report recommends that NCAI's tribal constituents implement Option 3. Medication Assisted Treatment connects opioid overdose patients directly from the Emergency Department into treatment and counseling.

PROBLEM STATEMENT:

A disproportionate number of American Indians and Alaskan Natives die each year as a result of the illicit or prescription opioid overdoses, and many others suffer from opioid substance use disorder. While death rates from drug overdoses increased 200 percent in the last 16 years among the general population, they have increased 325 percent for rural populations and 500 percent for American Indians and Alaskan Natives (AI/AN).[1] These deaths for the most part are driven by misconceptions about the safety of opioid prescriptions, underlying mental health problems, and by the increasing availability of the drug (SAMHSA, 2016). Additionally, the Centers for Disease Control notes that because of misidentification of race in data, information on AI/AN deaths could vary by as much as 35 percentage points.

As of 2015, 1,625 American Indians and Alaskan Natives have died from prescription opioid or heroin-related overdoses since 1999. If this trend continues, a total of 3,875 will die by 2026 (See Appendix D for calculation).

Opioid addiction and death has profound consequences for the economy, maternal and infant health, health care and emergency response systems, and law enforcement. Opioid over-prescription and addiction may be linked to trauma, often prevalent in tribal communities. Tribes themselves are already implementing policies to combat the crisis. Native Tribes like the Muckleshoot in Washington and the White Earth in Minnesota have begun developing programs on harm reduction and culturally relevant treatment. Current efforts also include federal programs like the Indian Health Service's Prescription Monitoring Program. The National Congress of American Indians' Policy Research Center released a brief on the opioid crisis in June of 2017, and tribal leaders have been requesting more research and policy options that would work for their governments. This report addresses policy options for tribes to combat illicit and prescription opioid use and mortality on their reservations.

[1] AI/AN is the abbreviated term for this population, which is measured by the U.S. Census to include indigenous peoples of Alaska and the lower 48 States.

BACKGROUND:

Impact of Opioids on American Indians

Widespread addiction to prescription opioids and heroin has swept across the nation in the last decade, and nowhere has the crisis hit harder than in Indian Country. Opioid addiction and death has profound consequences for the economy, maternal and infant health, health care and emergency response systems, and law enforcement.

Many data sources leave American Indians and Alaskan Natives out of the narrative, as reports on opioid-related deaths often only show Non-Hispanic White, Black, and Hispanic demographics.[2] Data pulled from the CDC, however, shows the disproportionate impact on this population. In 2014, American Indians had 3.7 heroin-related and 8.4 opioid-related deaths per 100,000 people, higher than any other racial group for opioids (See Appendix C: Graph 1). As of 2015, Native Americans had 1.1 percent of opioid deaths, while they had a 0.9 percent share of the total population (CDC, 2016).[3] This means Native Americans have a higher share of opioid deaths than their share of the population. As with other populations, the opioid epidemic hit many tribal communities only in the last decade, with few overdose deaths before 2009 (See Appendix C: Graph 2). Distinguishing between age groups, in 2015, AI/AN individuals 45-54 were most likely to experience an opioid-related death, a 380 percent increase since 1999. Only Whites ages 25-34 surpassed the total number of deaths for AI/AN in the same category. On the other hand, AI/AN were less likely to see an increase in deaths for the youngest age category (15-24) since 1999, with the lowest percent change for that group of any other race (CDC, 2016).

American Indians live in diverse environments: there are 573 federally recognized tribes across over 326 tribal lands and reservations, with an uncounted hundreds of thousands of American Indians living in urban areas. For this reason, many of the problems and barriers to treatment will vary tribe by tribe. There are also many challenges to collecting data on rates of addiction and death for American Indians and Alaskan Natives, as well as uncertainty about the external validity of many studies conducted among non-Natives. The Centers for Disease Control notes that because of misidentification of race in data, information on AI/AN could vary by as much as 35 percentage points. One study that sought to measure the prevalence of newborn opioid withdrawal for AI/AN population used hospital records to measure that AI/AN rates are higher than any other racial group (Atwell et al. 2016). However, because this was collected using state-level data, tribes in other areas of the country, like the southwest, remote areas like Alaska, or in coastal urban centers, may not benefit from this robust but localized study.

American Indians are concentrated in 26 states, including Alaska (Spector, 2000). Appendix C: Figure 1 shows the states with the highest age-adjusted rates of opioid deaths in 2016 for the general population and indicates the location of Native American reservations and tribal statistical areas using the U.S. Census definition. The states with the darkest blue are where the number of opioid

[2] Including: Kaiser Family Foundation (2016), M Alexander (2017)
[3] CDC data compiled by Andrew Witherspoon for Axiom

deaths are still increasing, using the most recent data. This suggests some of the areas of the country[4] for which American Indian populations would be especially vulnerable, given the climate for other populations as well.

Opioid Addiction and its Consequences

Opioids come in two forms: prescription opioids such as OxyCotin, Percocet, and Vicodin, and illegal drugs such as heroin, sometimes combined with fentanyl, which can either be injected, snorted, or smoked. For opioid drug users, withdrawal symptoms like sweating, shaking, fevers and chills, will begin after the user stops taking the drug. Symptoms may go away within a week but cravings can remain for years (DiConsiglio, 2013). In 2012, approximately 2.4 million people aged 12 or older used prescription drugs nonmedically for the first time, but only 26 percent of illicit drug users report that their first use was with prescription drugs. Men aged 24-54 have the highest overdose rates, but rates for women in the same age category are accelerating (SAMHSA).

People in rural areas are more than twice as likely to overdose as those living in cities, and teens, young adults, and veterans are more vulnerable (SAMHSA). Drug use demographics intersect with demographics for American Indians, who are more likely to live in rural areas, have a high youth population, and have a high proportion of veterans. For all drugs, American Indians show a high rate of lifetime abuse (64.7 percent),[5] past year illicit drug use (27.6), and current non-medical prescription drug abuse (6.2) (SAMHSA). In 2010, American Indians had the highest rate of drug-induced mortality, which accounted for 17 percent of deaths, and the use of OxyCotin by American Indian high school students is double the national average (SAMHSA, 2016).

A Dangerous Trend

Recently, fentanyl, which is a short-acting synthetic opioid, has emerged as a dangerous new trend in illicit drugs. The National Drug Early Warning System released a report in 2015 on fentanyl and fentanyl analogs using community sites, news and media scans, and national indicators. The DEA reports that clandestine-produced fentanyl, which can be sold in a white powder format similar to cocaine or powdered heroin, is likely contributing to the 700 deaths from this synthetic between 2013-2014. Even a small amount can be fatal (NDEWS, 2015).

Life expectancy in the United States fell last year, likely due to increased deaths from opioid overdoses. This is the first time since the 1960s that life expectancy has fallen two years in a row. The number of deaths from opioid overdoses rose from 2015 to 2016, increasing from 33,000 to 42,200 (Hedegaard, 2017). Last year, the Rio Arraba County of New Mexico, where many Pueblo communities such as the Pojoaque reside, had the highest rate of drug overdoses in the United States, with 81.4 deaths per 100,000. Even remote areas like the Alaskan area of Yukon-Kuskokwem, with less than 25,000 residents, has over 500 Alaskan Natives who are addicted to opioids (Associated Press, 2017).

In addition to the cost of human lives, the opioid crisis has a major financial toll on communities and in the nation. Nonmedical use of opioid pain relievers cost U.S. insurance companies up to $72.4 million a year (SAMHSA). A recent statement from the White House Council of Economic Advisors estimated the cost of the opioid epidemic to the nation in terms of health care and law

[4] Excludes Alaska

[5] of the total AI/AN population, 64.7 report at least one incident of drug abuse in their lifetime

enforcement spending as well as lost productivity. They found that opioid abuse and death cost the nation nearly $504 billion in 2015, amending a previous estimate of only $78.5 billion.

As with any public health or drug addiction issue, the impact of one American Indian user seeking treatment has positive externalities on the rest of the population. Spillover effects to society like decreased crime, increased workforce productivity, and lower health care costs impact non-users. One nationwide estimate—excluding the cost of potential lives lost—found that these negative externalities alone cost the country $55.6 billion in 2007 (Birnbaum, 2011). Many tribes realize that the impact of opioid use disorder is not contained only within the Native population. In November of 2017, the Swinomish Tribe opened a treatment facility on their reservation in Washington that has the capacity to treat 400 Indian and non-Indian patients, providing a valuable resource to the surrounding county as well.

Finally, research by Christopher Ruhm examined two possible explanations of the opioid crisis, that either "deaths of despair" or drug environments led to the staggering amount of deaths in the country. Deaths of despair occur as a result of broader socioeconomic distress from declining wealth in a community. However, the study found that opioids were prevalent among many counties with or without economic distress (Ruhm, 2018). This may suggest that economically distressed areas like many Native American reservations can tackle the opioid crisis head-on, even without resources to address underlying issues of economic decline.

Trends in Over-Prescription of Opioids

For any population, effectively responding to the opioid crisis should ideally encompass both the supply and demand side of the epidemic. A number of states have implemented supply-side policies such as a mandatory 5-day limit on prescriptions for doctors to distribute opioids for first time patients. Literature on the benefits and harms of prescribing opioids conclude that physicians should avoid the routine prescription of opioids for a patient with acute exacerbation of chronic noncancer pain seen in the Emergency Department (Cantrill, 2012). If they are prescribed, the physician should consider the patient's likelihood of misuse, abuse, or diversion and prescribe the lowest practical dosage for a short amount of time (Cantrill, 2012). A follow-up study in 2014 found similar results in Emergency Departments in California and Florida (Hasegawa et al. 2014).

According to a study on prescription opioid use among patients, Prescription Monitoring Programs (PMPs) work well for physicians concerned about drug diversion[6] or doctor shopping[7]. These programs monitor which patients have used opioids, and require coordination across health care systems so are often implemented on the state level. PMPs also work effectively in closed prescribing systems like the Veteran's Administration and require access by law enforcement to utilize their ability to identify trends (Cantrill, 2012). The Indian Health Service has many similarities with the Veteran's Administration, suggesting this study's relevance to Native American population as well, although no studies have been performed with the IHS. Cantrill found no studies that directly evaluated the real-time effect of voluntary access to a Prescription Monitoring Program on

[6] obtaining prescriptions through non-medical means such as through friends or buying prescriptions of the street.

[7] visiting multiple doctors in order to acquire opioid prescriptions

the prescribing practices of emergency physicians. Issues with existing research on PMPs include timeliness, interstate communication, or legislative delays and underfunding (Cantrill, 2012).

Nonmedical use of prescription opioids peaked in 2012, after efforts at curtailing the supply of prescriptions resulted in all 50 states developing prescription-monitoring programs. While prescription opioid abuse has fallen in recent years, deaths continue to rise, signaling that original prescription abusers have turned increasingly to heroin and fentanyl (Singer, 2017). These drugs are more dangerous, and more likely to result in a fatal overdose. Using data from 2006-2015, researchers found that about one fewer person per 100,000 was dying from prescription opioid abuse, but only in exchange for about 4 out of 100,000 deaths from heroin (Sullum, 2016). Implementation of PDMPs in tribal health care systems remains unclear.

Seeking Treatment

The demand side of drug addiction can be addressed by reducing the fatality of overdoses or to treat addiction, and there are a number of proven methods for both. Naloxone, also sometimes known as the brand name Narcan, is a narcotic overdose reversal drug that sells for a relatively low price—approximately $60 to $80 per 2-dose rescue kit (Davis, 2015). It is also effective at reversing overdoses. Wampler in 2011 assessed a mortality rate 48 hours after patients received Naloxone to reverse opioid overdose, and also assessed the survival rate for patients who refused transportation to a hospital. He studied 592 patients and found that none of them died within the 48-hour time limit, and only 9 died within duration of 30 days, those from repeated overdoses (Wampler, 2011).

Generational Consequences
Drug abuse has serious consequences for mothers and children. Women who use opioids during pregnancy had higher odds of threatened preterm labor, early onset delivery, poor fetal growth, and stillbirth. Users were more likely to have an extended hospital stay and to die before discharge from the hospital. Opioid use during pregnancy is also costly: one estimate shows $5,616 per hospitalization of woman who uses opioids. Source: Whitean et al (2014).

Paramedics, law enforcement, or bystanders must administer Naloxone quickly as damage to the brain and other organs increases the longer the victim remains hypoxic. Opioid overdoses take several hours in which respiration is slowly depressed before the victim is dead (Davis, 2013). A study published in *Addiction* found that bystanders were not always willing to intervene. For bystanders without Naloxone, they must call 911 to summon the first responders who will administer the drug, but bystanders only call about 30 percent of the time (Tobin, 2005).[8] Seal et al. surveyed overdose bystanders and found that 87 percent were willing and able to safely administer naloxone in an overdose situation (2003). This may suggest that bystanders with naloxone are more likely to intervene, but evidence is inconclusive.

The country is still fighting stigmas around the use of naloxone or Narcan, and research is conflicted. Some research had established that the availability of naloxone does not encourage drug usage,[9] (Bazazi, 2010). Support for harm reduction often signals to the public support for drug abuse

[8] From a sample of 397 self-selecting individuals. Selection bias may lead to understated evidence because all the participants Tobin recruited expressed willingness to conduct HIV prevention outreach as a part of another study. However, Tobin cites other research that produce similar estimates of calling 911
[9] Literature review (cited) also cites Maxwell, 2006; Seal 2005; and Wagner 2010

due to negative social associations with drug users and the prevailing philosophy of abstinence in limiting drug dependence (Bazazi, 2010). However, a report recently released by Doleac and Mukherjee (2018) sampled the expansion of laws providing for Naloxone and found that the availability of Naloxone presents a moral hazard: it decreases the risk of dangerous behaviors. They found that in the Midwest region especially, there was a 14 percent increase in opioid-related deaths after the implementation of Naloxone programs (Doleac and Mukherjee, 2018).

Literature on the opioid epidemic supports medication-assisted treatment, which researchers agree helps combat the addictive nature of drug use. MAT uses medications that suppress withdrawal symptoms without causing a high—such as buprenorphine, methadone, and extended release naltrexone. They have been proven to reduce opioid use, overdose deaths, criminal activity, and infectious disease transmission (NIDA, 2016). For the general population, we know that MAT therapies are underutilized: of the 2.5 million Americans using opioids in 2012, fewer than 1 million were receiving treatment (NIDA, 2016). These are also effective at reducing opioid-related deaths. After buprenorphine became available in Baltimore, heroin overdose deaths reduced by 37 percent (Schwartz et al., 2013). This data is supported by a study from France that saw a 79 percent decrease in heroin deaths over a five year period when buprenorphine treatment was introduced (Auriacombe et al., 2004). Additionally, treatment of opioid-dependent women with buprenorphine or methadone reduces symptoms of neonatal abstinence syndrome and length of hospital stay for women and their babies (NIDA). Both of these studies were conducted in urban areas, and further studies should verify these results among other populations.

Table 1: FDA-Approved Drug Uses in MAT

Medication	Mechanism of action	Route of administration	Dosing frequency	Available through
Methadone	Full agonist	Available in pill, liquid, and wafer forms	Daily	Opioid treatment program
Buprenorphine	Partial agonist	Pill or film (placed inside the cheek or under the tongue)	Daily	Any prescriber with the appropriate waiver
		Implant (inserted beneath the skin)	Every six months	
Naltrexone	Antagonist	Oral formulations	Daily	Any health care provider with prescribing authority
		Extended-release injectable formulation	Monthly	

Source: Pew Charitable Trust

The ability for health policy makers to provide MAT to their constituents depends on the type of facility they have access to. Table 1 shows the three primary opioid agonist medications and the facility they are available through. The highly effective agonist methadone is only available through federally-approved opioid treatment programs which are not available in every state.

Patients who take one of the above medications to treat opioid use disorder are not replacing one drug with another, as some public discourse describes. Instead, these medications treat the psychiatric conditions of addiction. Buprenorphine and methadone have extended releases that are not associated with the same rush or "high" as heroin or other opioids, and if a patient attempts to use opiates, the high of other drugs is suppressed (NIDA, 2018). A lack of education on the true nature of medication-assisted treatment raises political barriers, and stigma continues to exist around the country.

The Importance of Cultural Competency

American Indians and Alaskan Natives, like other demographics in economically distressed conditions, are susceptible to trauma and adverse childhood experiences, which are known to lead to higher risk of addiction and other behavioral and mental problems later in life. These include childhood experiences with alcoholism, addiction, domestic abuse, emotional abuse, incarceration of a family member, and physical or sexual abuse which exacerbate susceptibility to drug abuse (Vestal, 2016). American Indians in particular are subject to a type of intergenerational trauma, also known as historical trauma. Native Americans over the age of 30 are only one generation away from the boarding school era, where Native Americans were forcibly removed from their homes and forced to assimilate into Anglo-Saxon American culture (del Vecchio, 2015). American Indians today who have managed to maintain their culture are rising above the negative impacts of colonialism and finding healing in tradition. Treatment systems that account for this are more effective.

Cultural competency is paramount in approaching treatment for American Indians and Alaskan Natives. There is a direct relationship between culture and health, because culture often influences health beliefs and practices. For example, patients who are dissatisfied with their treatment are less likely to stay in treatment (Flowers, 2005).[10] Culture looks different for different tribes according to spirituality, language, health beliefs, and skin color; it even varies between families within tribes. Cultural competency is a skill that health care practitioners can use, not to apply one approach to everyone, but to understand how different approaches may be needed. American Indians sometimes practice both traditional ceremonies and Christianity, or speak English and their Native language. Not matter the patient, it is important to avoid stereotyping (Flowers, 2005).

In addition, interventions should consider practicing trauma-informed care, which approaches healthcare through the understanding of the influences of trauma and behavioral health on outcomes. A study by Mathematica Research Center found that the existing literature was mainly qualitative and small in scale.[11] Despite falling short of Western scientific measurements, there's ongoing debate about whether traditional healing should be measured through scientific methods that have historically been monopolized by non-indigenous researchers (Henderson, 2009). One finding was that group-based therapy sessions were used with success to break patterns of isolation and negative thinking (Lechner, 2016). Another study used a quasi-experimental method to analyze the effectiveness of the culturally-informed *Cherokee Talking Circle*, a program designed to reduce substance abuse in teens, and found it to be statistically more effective[12] at reducing substance abuse immediately following and in a 90-day follow-up (Lowe et al. 2012).

Concepts of Justice

In addition to medical treatment options, policy makers must consider how to treat individuals convicted of an opioid-related drug offense. One such option is a drug court. Developed in states during the 1980s, drug courts aim to decrease overcrowding in jails and hold offenders accountable

[10] For example, physical health could be impacted by the perceived trustworthiness of a provider, like when patients are referred to physical therapy after an accident. Willingness to continue treatment is likely more sensitive for behavioral health like drug treatment.
[11] They specifically cite Pole, Gone, and Kulkarni (2008)
[12] 13 point difference on the Total Symptom Severity Scale

for overcoming addiction through the authority of a judicial court of law. Many American Indian and Alaskan Native leaders began working with the Department of Justice to implement drug courts within tribal governments, and 22 tribal courts piloted the program in 1997.

Drug courts have been shown to increase the enrollment in and completion of drug treatment programs, thereby reducing the number of future drug arrests (Marlowe and Carey, 2012; Brun et al., 2012; Carey et al., 2010). They also hold individuals accountable through a judicially-supervised process that often includes regular drug testing, case management, and community-based resources. Data from the National Institute of Justice reports that drug courts lower costs compared to criminal justice system processing and by reducing recidivism. Long-term outcomes are reported to save the public $6,744 per program participant. For traditional drug courts to succeed, there should be strong assessment and treatment, and even then factors such as current drug trends and market supply will impact the effectiveness (JNIJ, 2018).

Another factor that contributes to the variability in drug court results is the personal relationship with the judge, and that individual's approach an treatment of each participant. This personal influence is all the more important in a tribal setting because that judge is often a respected community member and sometimes a spiritual guide for participants as well.

Conclusion

Opioid-related deaths for American Indians and Alaskan Native communities are disproportionately high, multifaceted, and increasing in severity. At the same time, there are large gaps in existing research about local and regional problems, and misidentification of race in death reports may have underestimated the crisis. Current solutions focus on curtailing both the supply and demand side of the opioid addiction, practicing harm reduction techniques, offering treatment to those addicted, and reintegrating users into the community. More research is needed on how well these solutions work in Indian Country.

CRITERIA

Each of the alternatives below will be evaluated using the following criteria. Comparing the options using uniform criteria allows for an evidence-based recommendation. The ultimate goal of each alternative is to address the problem of the opioid crisis in Native American communities, and this report will analyze which alternative will do so most effectively. Each alternative is targeted at the tribal council, so considerations on administrative feasibility and cost are important to consider. Finally, many of the solutions for the opioid crisis do not take into account the unique spiritual and cultural importance and history of tribal sovereignty. I defined four criteria that take into account the most pressing needs of these policy issues, which list as follows:

1. Effectiveness at Reducing Opioid Overdoses and Addiction
2. Cost
3. Administrative Feasibility
4. Tribal Sovereignty

Each criteria will be quantified where possible, or ranked on the scale described. The criteria are described below as well as the extent to which they address the problem statement.

1. **Effectiveness at Reducing Opioid Overdoses and Addiction:** The following two criteria address the effectiveness at combating the opioid epidemic, both through overdose deaths avoided and decreased opioid use. These criteria will be described both qualitatively and quantitatively.
    a. **Reducing Overdose Deaths:** Does the policy have *limited, sufficient, high, or very high* likelihood of effectively reducing opioid overdose deaths? This measurement addresses the most pressing need of the cost of human lives, but it is important to also consider if the proposed alternatives sustain effectiveness over the long term. A policy that reduces deaths in the short term should only be effective if that results in a long term reduction of deaths as well.
    b. **Decreasing Opioid Use:** Does the policy have *limited, sufficient, high, or very high* likelihood of reducing opioid use? Like reducing deaths, this policy should be evaluated for its sustainability as well.

2. **Cost:** How much would each program cost? This analysis will quantify estimated costs of each program and weigh them against the net annual benefits. An appendix will be provided including these estimates and a sensitivity analysis. A discussion of who pays for the cost will also be listed, with emphasis on cost paid by the tribes.

3. **Administrative feasibility:** Does implementing the proposed policy present *low, considerable, or high* administrative feasibility? This will be evaluated quantitatively based on staffing considerations, legal burdens, implementation time, and the skill and coordination needed to ensure effective implementation.

4. **Tribal sovereignty:** Due to the importance of tribal sovereignty this criteria will ensure that their political independence and traditional lifeways are considered.
    a. **Political autonomy:** Does the proposed alternative do a poor, fair, or excellent job of furthering the tribes' goals of political agency?
    b. **Traditional spirituality and culture**: Does the proposed alternative do a poor, fair, or excellent job of incorporating the tribes' traditional lifeways?

ALTERNATIVES

Four policy alternatives are presented here to combat the opioid crisis in Indian Country. The goal is to provide an objective analysis that will represent the needs of the National Congress of American Indians and the American Indian and Alaskan Native tribes they represent. The goal of the recommended options should be to assist the tribal community members under the influence of prescription and illicit opioids. These solutions should address both the long and short term and seek to curb fatalities due to overdoses as well as addiction. These are based on best practices from tribes, conversations with Yvette Robideaux, and conversations with other experts on the opioid crisis such as Christopher Ruhm.

These four policy alternatives represent a breadth of evidence-based interventions. As communities continue to battle the opioid crisis there are a number of stakeholders to involve, including state-level policy makers, law enforcement, the behavioral health care system, and the justice system. These options were chosen to survey a variety of intervention mechanisms for tribal leaders with the desire to immediately act on an ongoing opioid crisis.

1. Let Present Trends Continue
2. Decrease Opioid-Related Deaths Through a Naloxone Bystander Program
3. Increase Medication-Assisted Treatment Referral from the Emergency Room
4. Adapt a Healing to Wellness Drug Court for Opiate-Related Offenses

Option 1: Let Present Trends Continue: Prescription Drug Monitoring Programs

What would happen if tribes let present trends continue? This option first and foremost measures the present trends in opioid abuse among AI/AN communities, but also presents the known impacts of new regulations on Prescription Drug Monitoring Program. In June 2016, along with other HHS initiatives, IHS released its State Prescription Monitoring Programs policy to ensure best pain management practices and define the participation of the Indian Health Service within state efforts (IHS, 2016).

Prescription Drug Monitoring Programs are state-based electronic systems that track medications dispersed from registered pharmacies. This helps flag individuals who may be misusing, abusing, or diverting prescription opioids for illicit purposes and, depending on the state, may lead to intervention. The new policy requires that an MOU be signed between the Area Director of IHS and the state in which IHS facilities are located. Clinic and Pharmacy Directors need to ensure that monitoring practices are appropriately adhered to and that all prescribers register with a PDMP (IHS, 2016).

Regional Collaboration
Many regional Indian Health Service offices, like the Great Plains, have already formed task forces that meet weekly to discuss efforts to combat the opioid crisis, including collaboration with SAMHSA and HRSA. This program has been implemented in order to provide appropriate management of care, identify patients who may have an opioid abuse problem, and prevent illicit diversion of opioids. The National Congress of American Indians has already identified collaboration with tribes as a crucial next step in addressing the opioid crisis (NCAI, 2017).

Research has established that the implementation of a prescription-monitoring program is associated with a 30 percent reduction in the prescribing of opioids by providers (Bao et al., 2016).[13] However, because the data only reports on a correlation, it's unclear that the prescription monitoring program itself is what drives the decrease in opioid prescription. Even less clear is how closely associated a reduction in prescriptions is with reduction in death, and some research suggests that PDMPs actually encourage illicit opioid users to turn towards heroin (Sullum, 2016).

Additionally, the IHS regulation does not itself implement a new PMDP, but partners with existing state initiatives, and more information is needed on how effectively that partnership translates into outcomes. The Veterans Administration, the other federal-healthcare system besides the IHS, implemented a similar guidance structure to assist with PDMP in 2013. A study by the VA is currently being conducted to asses the factors that contribute to use of state PDMPs among VA clinics, results of which should also inform IHS policy makers (VA, 2016). An analysis of frequently cited studies on state PDMPs found that there is no evidence-based consensus on their effectiveness (Finley et al., 2017).

Finally, prescription opioid and heroin deaths have been on the rise in AI/AN communities since 2009. Based on a 10-year projection of current trends, 242 Native Americans will die from opioid-related causes in the year 2026, bringing the total deaths since 2000 to 3,434 (See Appendix D).

[13] Specifically, they found a reduction in Schedule II opioid prescribing from 5.5 to 3.7 percent in the probability of prescribing during an office visit, before and after PDMP implementation

ANALYSIS

Effectiveness: Current research disagrees whether prescription monitoring programs are effective at reducing the number of opioids prescribed, and decreases in illicit opioid use and deaths are still more uncertain. Because of this high degree of uncertainty, this analysis will not estimate any change in the rate of opioid-related deaths due to PDMPs. Current trends show that the rate at which AI/AN die due to opioid-related overdoses will continue to rise at the rate of 8 additional deaths per year on average (See Appendix D).

Cost: Costs for this program for tribes and for the Indian Health Service are not significant.

Administrative feasibility: Efforts to implement this option should be minimal. IHS directors have a clear framework for signing MOUs with the states and all roles are clearly defined. If a region choses to implement a task force on the opioid crisis, frameworks for collaboration are also generally in place.

Tribal Sovereignty: This option works at the federal level, and thus there is limited opportunity for tribal political autonomy except through potential collaboration with IHS. Similarly, traditional culture has not been incorporated in this nation-wide program.

LET PRESENT TRENDS CONTINUE

Effectiveness at reducing opioid deaths	Cost	Administrative Feasibility	Tribal sovereignty
Opioid Deaths Increase at 8 percent per year	Minimal Overall Cost	High	Fair *Political Autonomy*
			Poor *Traditional culture*

Option 2: Implement a Naloxone Bystander Training Program

Tribes should increase the number of community members trained to administer a life-saving overdose reversal drug by hosting trainings for all tribal employees. In this alternative, Narcan would be widely distributed to the community at certain tribal offices, health centers, events, and delivered to homes on request in order to achieve harm reduction strategies. Indian Health Service has already implemented a program newly requiring Bureau of Indian Affairs officers to carry naloxone and be trained to administer the drug. This program would further saturate tribal communities with individuals capable of intervening in an overdose situation.

Tribal communities are known for having a high number of individuals employed in government positions, meaning a significant portion of the community will have this skill. Bystanders without Naloxone only call 911 in an overdose situation 30 percent of the time, limiting the ability of first responders to administer the drug (Tobin, 2004). Increasing the number of individual community members willing and capable of intervening in a critical overdose situation should help tribes decrease the number of deaths from opioid overdose.

A template for these trainings exists at the federal level. The Indian Health Service, along with its recent collaboration with BIA officers to dispense Narcan, has developed training materials and toolkits.[14] First responders should have resources, and community members are usually able to access prescriptions for Narcan from local pharmacies if a tribe does not yet have approval to distribute widely to the community.

In addition to convening meetings for training to administer Naloxone, this option also considers the needs of community members who may be feeling the effects of secondary trauma. During the training, the tribe may offer traditional ceremony or other customary gatherings in order for its members to cope with the impact of loss within the community. This type of community-based healing may strengthen bystanders' willingness to intervene, deter other individuals from turning to drugs to cope, and motivate community members to battle the opioid crisis from the ground up.

ANALYSIS

Effectiveness: Using reported numbers from the Muckleshoot reservation, the Naloxone bystander training and distribution program was associated in about 15 overdose reversals per year after implementation. This analysis will assume that there is a short-term positive effect of lives saved. Using research by Doleac and Mukherjee (2018), we don't see any long-term significant reduction in opioid mortality for the state-level adaptation of Naloxone laws.[15] One important caution is that this effect may vary by region, and that tribes in the Midwest might have as high as a 14 percent increase in opioid-related deaths after implementing Naloxone access laws.

Cost: Over the course of 10 years this program is estimated to cost $862,000 These costs account for costs to tribes as well as costs to the federal government through grant programs. See Appendix A.

[14] Video: https://www.youtube.com/watch?v=KcjF9Iw0iuw

[15] Urban areas had no increase or decrease in mortality, and for rural areas the effect on mortality was not statistically significant

Administrative Feasibility: This option ranks high in administrative feasibility. Resources have already been distributed to most tribal law enforcement, and the tribal council can easily find a day to administer the training. Tribal leaders can enact this program in a short time span. Distribution of Narcan has already begun in many tribal communities, and should be easy to adopt in communities who have not yet done so.

Tribal sovereignty: This option is community-based and relies on a network of tribal members caring for one another. While traditional ceremonies are not inherently a part of this program, the tribe has the ability to incorporate them in order to address secondary trauma. The quick implementation period is also because the tribe has political autonomy over this intervention.

IMPLEMENT A NALOXONE BYSTANDER TRAINING PROGRAM

Effective at reducing opioid deaths	Cost	Administrative Feasibility	Tribal sovereignty
Short term reduction in deaths	$117,500 *One year*	High	Excellent *Political Autonomy*
Long term no reduction in deaths	*$*862,000 *10 years*		Fair *Traditional culture*

Option 3: Increase Medication-Assisted Treatment from Emergency Room

This option will describe several best practices for administering the medication-assisted treatment buprenorphine to patients who are admitted to the emergency room for opioid-related overdoses. This program is called emergency-room based suboxone bridging, which uses extended-release drugs that do not cause a high to bridge patients into long-term treatment. Importantly, it also involves counseling with a mental health professional for a whole-patient approach. Users can be referred to treatment directly from the Emergency Department if taken in for an overdose.

The White Earth Ojibwe tribe has a program that works to administer medication assisted treatment directly from the emergency room. This program involves an opioid withdrawal medication, a 10-minute counseling session, and a referral. This model was recently studied in a randomized control trial that showed administering buprenorphine directly from the ED doubles the number of patients in treatment 2 months later (D'Onofrio et al., 2017). Researchers followed up with patients 2 months, 6 months, and one year later, and 75 percent of patients who received a brief intervention, referral, and medication were still engaged in treatment. All groups, including only referral and brief intervention groups, had about more than half of participants remain in treatment at 6 and 12 months (D'Onofrio et al., 2017).

The second part of this intervention involves referral to a local treatment program to help opioid users detox through Medication-Assisted Treatment (MAT) and counseling. Many tribes already have drug treatment programs in place that need to adapt to the opioid crisis. For opioid use disorder, treatment comes in Stage I: detoxification and Stage II: stabilization and maintenance. Stage I involves the use of opioid agonist medications such as methadone or buprenorphine and can be performed inpatient or outpatient, depending on the individual (BJA, 2018). Case managers should look at family support and safety concerns in order to determine treatment approach. Stage II attempts to reduce cravings, prevent relapse, and restore the patient to normal life (BJA, 2018). Evidence supports using medication during this stage as well. Because this stage emphasizes counseling, tribes have the opportunity to incorporate Native traditions and advocate for staff who are trained in cultural competency in order to increase patient retention in treatment.

American Indians and Alaskan Natives do not always have access to health services. Individual tribal members who have trouble getting to the emergency department may still be at risk if this program is implemented. The effectiveness of a referral to MAT is also going to depend on the scope of health care access for an individual tribe, but AI/AN individuals have 100 percent health care coverage through the Indian Health Services. If a tribal member needs to access services that are not offered at an IHS facility, they will need to fill out a Medicaid reimbursement and seek treatment at another hospital.

ANALYSIS

Effectiveness: Data shows that the emergency-room based suboxone bridging into MAT is significantly effective at decreasing opioid-related deaths. Evidence on the effectiveness varies from a 37 percent reduction in deaths to a 79 percent reduction in deaths, and for this analysis we will use the 37 percent effectiveness. This number, based on a study in Baltimore, is most frequently cited and uses data from the city that at that time had the highest increase in opioid-related deaths. Although

treatments in rural areas and among minority populations tend to be less effective than in urban areas, we will assume that the emergency room referral and the incorporation of culturally competent staff resulted in steady treatment uptake.

Cost: Over the course of 10 years this program is estimated to cost $1,400,000 to treat 50 patients. These costs account for costs to tribes as well as costs to the federal government through grant programs. They include the cost of a cultural coordinator to integrate cultural competency practices but do not include the upfront costs of an entirely new treatment facility. See Appendix A.

Administrative Feasibility: Ease of administration for a tribe will depend on the health care environment. For tribes with direct administration of an IHS facility and a referral treatment center nearby, administrative feasibility will be high. For tribes who rely on a federally-operated IHS facility and have limited access to other service providers, a pilot program of this kind will be difficult to administer at all.

Tribal Sovereignty: Political autonomy over this intervention again varies based on the health care structure of a given tribe. Tribes with ownership over their IHS facility or strong partnerships with neighboring hospitals will have a excellent amount of political autonomy, but even tribes with more complex administrative structures could still have a fair degree of input into this program. Traditional culture also ranks fair-excellent if referral can be made to an existing tribally-operated drug treatment program or to a culturally-informed health system. Behavioral health programs such as MAT have a high potential to meaningfully incorporate tribal customs and traditional approaches to healing.

INCREASE MEDICATION-ASSISTED TREATMENT FROM EMERGENCY ROOM

<table>
<tr><th>Effective at reducing opioid deaths</th><th>Cost</th><th>Administrative Feasibility</th><th>Tribal sovereignty</th></tr>
<tr><td rowspan="2">37 percent reduction in deaths</td><td>$200,000
One year</td><td rowspan="2">Varies</td><td>Fair
Political Autonomy</td></tr>
<tr><td>$1,400,000
10 years</td><td>Excellent
Traditional culture</td></tr>
</table>

Option 4: Adapt a Healing to Wellness Drug Court for Opiate-Related Offenses

The tribe should offer a Healing to Wellness drug court that offers a waiver of the charges if drug offenders fulfill a curriculum focused on reintegration into the community through traditional healing. This option would target individuals who have been charged by tribal law enforcement for an opioid-related crime. Tribal court judges oversee the program with the help of a case manager that works directly with the individual offenders. This option is based after the drug court program by the Penobscot tribe in Maine, who have modeled their program along four phases that correspond to the four directions and four ceremonial plants (see Appendix C, Figure 2).

More than 120 wellness courts operate in tribes across 26 states, helping people with addiction make a recovery through traditional native practices. A report on psychiatric practices and cultural practices highlighted that traditional medicine can be more effective than conventional treatment alone (Shore, 2015). The Penobscot tribe in Maine, one of the states hit hardest by the opioid crisis, has been running their program for 5 years and has only had one person end up back in jail (Spector, 2018). Drug courts in the United States have developed uniform characteristics and benchmarks, but tribal courts can tailor their programs more closely to the spiritual needs of their tribal members. In addition to offering unique cultural practices, tribal drug courts must also adapt to the opioid crisis. Ultimately the priorities of the tribe, resource constraints, local laws and governance, and traditional customs will dictate how a tribe implements a Healing to Wellness Court (BJA, 2014).

Healing to Wellness Courts are designed to reintegrate the offender into the community. The Judge or Magistrate has the flexibility to tailor the program not only to the traditions and beliefs of their tribe, but also to each individual offender. The program can improve mental health outcomes as well, by looking at comorbidity of substance abuse with other issues of trauma.

One major limitation of this program is that there is no available research on evidence-based practices. While we can borrow from evidence in other drug courts or theories of indigenous healing, the Office of Justice Programs acknowledges that, "what works in a non-tribal community may not work in Indian Country," (BJA, 2014).

ANALYSIS

Effectiveness: There is currently no data available on the effectiveness of Healing to Wellness courts on opioid deaths or use.

Cost: Over the course of 10 years this program is estimated to cost $36,000 to operate. These costs account for costs to tribes as well as costs to the federal government through grant programs. They include the cost of a case manager to integrate Native traditions but do not include the upfront costs of an entirely new court building. See Appendix A.

Administrative Feasibility: Healing to Wellness courts exist in 120 different tribes, adapted by consensus with the tribal government and incorporating unique cultural practices. For those tribes, their judicial system should adapt to new practices for opioid-related offenses if their court has not already done so. New Healing to Wellness courts will have to undergo a comprehensive development of legal code, often with the approval of the Department of Justice. All tribal drug

courts put a substantive effort into each individual in their programs, including case management and periodic drug testing.

Tribal Sovereignty: Healing to Wellness courts were developed by tribal leaders for their people and are administered by tribal officials. Although new systems need to be approved by the Department of Justice, tribes have full jurisdiction over the proceedings, from conviction to the decision to drop the charges. Tribal court systems are widely recognized as a primary example of the expression of the political sovereignty of tribal governments. Healing to Wellness courts also present an opportunity to incorporate traditional healing into a curriculum, often guided by the judge, an elder, or a cultural coordinator who works with the tribe. Participants can undergo ceremonial healing rituals and participate in traditions. The court structure itself can also be made to fit the traditional values of Native American culture, by placing emphasis on reintegration into society, responsibility, and continual spiritual growth.

ADAPT A HEALING TO WELLNESS COURT FOR OPIATE-RELATED OFFENSES

Effective at reducing opioid deaths	Cost	Administrative Feasibility	Tribal sovereignty
No available data	$36,000 *One year*	Considerable	Excellent *Political Autonomy*
	*$*247,750 *10 years*		Excellent *Traditional culture*

Evaluating Options:

In order to evaluate the policy options, I have created the following outcomes matrix that weighs each alternative against the criteria. For each criterion, I've evaluated the policy option based on available data that would apply to *all* tribes: any given tribe can use this template to apply their own analysis for their community.

OUTCOMES MATRIX

	Effective at reducing opioid deaths	Cost	Administrative Feasibility	Tribal sovereignty
Option 1: Let Present Trends Continue	Deaths increase at 8 percent per year	Baseline: no extra cost	High	Poor
Option 2: Nalaxone Bystander Training	No long-term reduction in deaths	$862,000	High	Fair/ Excellent
Option 3: Medication Assisted Treatment	**37 percent reduction in deaths**	**$1,421,600**	**Varies**	**Fair/ Excellent**
Option 4: Healing to Wellness Court	No available data	$247,750	Considerable	Excellent

Criteria will be weighted heavily in terms of effectiveness. Based on the outcomes matrix, Option 3, the medication-assisted treatment, ranks most high in terms of effectiveness, but also the most in terms of cost. Options 1 and 2 are both administratively feasible, while all options except Option 1 rank well on tribal sovereignty.

RECOMMENDATION: OPTION 3

This analysis recommends Option 3: implement medication-assisted treatment referral from the emergency room. This option provides the highest likelihood in reduction of deaths and addiction in the long term. Tribes should model a program similar to what White Earth Nation implemented by bridging emergency room overdose patients directly into long-term medication treatment and counseling, specifically through a professional who is familiar with Native culture. This option efficiently uses the existing personnel in the emergency department, and could benefit tribal members and surrounding community members alike.

Some of the challenges associated with MAT include cost, administrative feasibility, and stigma. Tribes will need to invest $190,000 in the first year and nearly $1,421,000 over 10 years. However, Appendix A calculates the benefits of implementing this program and finds that over 10 years, based on the value of lives saved, this program will benefit a tribe by nearly $1.2 trillion.[16] Administrative feasibility is going to vary depending on the health care environment, which this analysis discusses in the implementation section. Finally, the stigma surrounding Medication Assisted Treatment is that it replaces one addiction with another, or that those individuals who suffer from addiction are not deserving of treatment in the first place. As discussed in the background, the medications associated with this treatment do not cause a high—they repress the withdrawal symptoms and make it such that if a user were to try the same opiate drug again, there would be no high. MAT also offers counseling to treat comorbidity with other mental health and addiction symptoms, and provides drug testing for accountability throughout the process. Treating opioid substance use does not just benefit the addicted individual but reduces criminal activity, infectious disease, neonatal abstinence syndrome, and other societal benefits.

Not only has this option been widely acknowledged by research to be the most effective long-term solution for the opioid crisis generally, but Medication Assisted Treatment also works in tribal communities. The Swinomish community's recently opened treatment facility in Washington uses an open door policy that means non-Native opioid users rely on their services as the number one provider in the area. Addiction does not stop at the reservation boundary: Native nations have the power to positively affect the communities around them.

Because of these strengths, and because this option is most directly geared towards reducing deaths in the long term, the benefits of Medication-Assisted Treatment outweigh the costs. Even though other options are more administratively feasible and less expensive, this option will best address community needs.

This recommendation has two important qualifications. First, research indicates that high access to medication-assisted treatment in addition to Naloxone access means that Naloxone access will result in a long-term decrease in opioid deaths. In other words, those whose lives are saved by Naloxone need access to follow-up care and a way out of addiction. **Tribes are not recommended to implement the Naloxone bystander program without first providing access to medication-assisted treatment.**

[16] calculated based on federal standards for the value of a statistical life: see Appendix A

Additionally, some tribes will face difficulty in implementing the Medication Assisted Treatment program due to the current healthcare environment, as discussed in the next section. For some tribes, Option 4: Healing to Wellness Courts may be more attractive as an intervention. These programs have the potential to reintegrate opioid users into the community effectively, so it's important that tribes measure the outcomes of their program. **If, after 2 years, the Healing to Wellness Court is more than 37 percent effective at reducing deaths due to opioid use, a tribe could continue to administer Option 4.**

IMPLEMENTATION GUIDELINES

Policies that work with American Indians and Alaskan Natives will inherently be difficult to describe and implement universally. Each tribal nation is different and requires a unique focus for implementation to be effective. Population, land mass, existing treatment programs, financial resources, and administrative capacity will impact the result of any intervention. This analysis acknowledges these challenges in implementing and sustaining effective opioid abuse prevention programs. For Medication Assisted Treatment specifically, tribes must navigate a variety of healthcare environments depending on their authority within the system. The following section lists some considerations for implementation under different environments for each tribe, and is by no means exhaustive.

- *Tribal-owned IHS Clinics*: work with the Executive Director to implement recommended emergency room policies and track medical records. This option is the easiest for tribes to administer since they have direct authority and access to all resources.
- *Federally-owned IHS Clinics*: collaborate with the Indian Health Service and seek federal approval for recommended changes. You may also need to establish a system for transferring records and referrals if the treatment center is not also under IHS authority.
- *Opioid Treatment Programs*: obtain licensing from the state in which this federally-certified treatment program is located. These facilities are credited with some of the best care for opioid use disorder, but are rarely available in rural areas.
- *Tribal Drug Treatment Programs*: adapt existing tribal drug treatment programs to recommendations for opioid abuse. Systems from other drug treatment needs may be in place, but approval for new opioid-suppressant medications and transition of patient records may be difficult.

Tribal leaders know their own communities best and have decades of experience collaborating with federal and private institutions. Establishing a connection between emergency health systems and treatment options, not to mention creating new treatment facilities, requires a great amount of planning and commitment. Regardless of available resources, every tribe should consider two implementation strategies: collaboration and political autonomy.

Collaborating with state and local resources, national organizations like NCAI, and other tribes will help increase administrative capacity for a given tribe. There are plenty of ongoing collaborative efforts at the federal level as well, such as IHS's Heroin, Opioids, and Pain Efforts (HOPE) Committee. Through IHS, tribes are encouraged to develop and submit a Tribal Action Plan to address important angles of the opioid crisis and to strategize for long-term grant applications. Many tribes have formed or made use of regional action committees in collaboration with local health systems, neighboring tribes, state government, and federal agencies.

Political autonomy describes ownership over a given response. Native nations have the capacity and power to assess local prevention strategies, mobilize resources, and engage state and local partners. The opioid crisis affects different regions in different ways and local leaders are best suited to tackle to aspects of the issue most prominent in their communities. We also know that traditional customs have a place in response to a crisis of this kind: whether through addressing secondary trauma, encouraging patient retention, or reintegrating opioid users into the community. Indian Country has continually innovated new ways of using old customs to strengthen community.

CONCLUSION

While much more can be learned about the successes of these various programs at a local and regional level, medication assisted treatment should be the focus of ongoing efforts. By bridging patients into treatment directly from the emergency room, this policy increases the number of patients in treatment up to a year later and thereby reduces opioid addiction and death. Through counseling, this option also strengthens Native identity over more Western detox options. Tribes have already begun to successfully implement treatment programs that treat their communities as well as the surrounding region. Finally, the net benefits of Medication Assisted Treatment are valued at $1.2 trillion over the course of 10 years.

To reduce opioid addiction and death in Indian Country, this report *strongly* recommends implementing Medication Assisted Treatment in tribal communities.

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APPENDIX

Appendix A: Benefit-Cost Analysis

EXECUTIVE SUMMARY: In order to evaluate policy alternatives that decrease the harmful impacts of the opioid crisis in Indian Country, I conduct a Benefit Cost Analysis. Using best estimates I will outline the costs in adapting these programs and the monetized benefits. The three alternatives are a naloxone bystander training and distribution program, a medication-assisted treatment program, and a healing to wellness drug court. This memo outlines several key assumptions and describes methodology for determining a final recommendation.

This analysis will focus on solutions implemented by one tribe over a 10 year period, but the scope of the benefits may extend to the United States and not just within one tribe.

Option 1: Nalaxone Bystander Training Program Costs

Cost Assumptions		Source
Number of employees serving as trainers	2	Interviews (estimate)
Number of tribal employees in attendance	30	Interviews (estimate)
Number of other individuals in attendance	10	Interviews (estimate)
Number of hours in training	5	Interviews (estimate)
Hourly wage of trainer(s)	22.35	Median wage nationally: Social Security Administration
Hourly wage	22.35	Median wage nationally: Social Security Administration
Units of Narcan/Nalaxone (yearly)	1488	Interviews, SAMHSA Case Study
Cost per unit of Narcan	79	Literature: Davis, 2015
Facility expenses	60	National rate for office space
Hourly wage of grant writer/administrator	30	Sector estimate between 25 and 100 per hour
Hours spent upfront administration	116	Literature: Hippel, 2015

We can assume Narcan has a nearly 100% chance of saving lives in an overdose situation (Wampler, 2011). Literature that surveys individuals who have been a bystander in an overdose situation found that without Nalaxone, bystanders were only willing to call the police 30% of the time, but with Narcan, 87% of them were willing and able to safely administer the drug (Seal et al. 2003, Tobin 2004). However, there is a great degree of uncertainty as to how many of the bystanders trained through this program would actually witness an overdose. According to the Muckleshoot tribe, there have been 30 reported reversals in 2.5 years since the beginning of the bystander program. The tribe notes that there are likely more that are unreported, and estimates of underreporting in opioid overdose situations suggest 24% (Ruhm, 2017). However, we don't know how many of those individuals who experienced overdose reversals are likely to return to drugs and another potentially fatal situation. Additionally, some of these reversals could be one individual with multiple overdoses over a year. Thus, we estimate that about 14.8 lives would be saved for the first year of this program. All estimates for this analysis account for set up costs of a grant writer: if an individual tribe is able to procure a grant for the program, that is considered a transfer.

Option 1: Nalaxone Bystander Training Program Benefits

Benefit Assumptions		Source
Chance of bystander-led overdose reversals in first year	14.88	Estimate and Literature (Wampler, 2011 and Seal et al. 2003)
VSL (million)	9.4	White House CEA: HHS average

This estimate and other estimates use a value of a statistical life as the primary cost. this estimate is taken from an analysis of the White House Council of Economic Advisor's report on the costs of the opioid crisis. In that estimate, they used different VSL depending on age category. Since that data is not available to us we'll use the HHS VSL estimate, which is standard for health-related analysis. As discussed in the main analysis, literature by Doleac found no long term reduction in opioid deaths for Naloxone programs as implemented by states. Although this estimate is recently published, we'll assume that the moral hazard of decreased risk applies to these overdose situations and estimate that after one year, the long-term effects will be zero.

Option 2: Medication-Assisted Treatment Program Costs

Cost Assumptions		Source
Hospital staff average wage	35	Literature-based estimate: (Johnson, 2015)
Number of staff involved	2	Literature-based estimate: (Johnson, 2015)
Hours spent inpatient	50	Literature-based estimate: (Johnson, 2015)
Medication expenditures (yearly)	500	Literature-based estimate: (Johnson, 2015)
Number of patients	50	Estimate (Muckleshoot example)
Salary of grant writer/administrator	30	Sector Estimate between 25 and 100
Hours spent upfront administration	116	Literature: Hippel (2015)
Salary for cultural coordinator	14	Sector estimate
Hours worked per week	37	Standard work week

Estimates of the annual per patient cost of a methodone treatment clinic were multiplied by an estimate of a number of patients based on one tribe's experience. The program expenses mainly accrue within a health care setting, so there may be transfers between the tribe and whatever institution runs the hospital (federal, tribal, private). The costs is based on an estimate from Johnson, 2015 that the per-patient yearly cost of methadone treatment was $4,000.

Option 2: Medication-Assisted Treatment Program Benefits

Benefit Assumptions		Source
Number of patients in need contact with program	50	Estimate: Muckleshoot example
Effectiveness (reduced deaths)	0.27	Schwatz et al. 2013, adjusted
VSL (milions)	9.4	White House CEA: HHS estimate

There is little available data on the effectiveness of MAT in rural areas, but one widely cited study looked at the introduction of buprenorphine in Boston. They found that after MAT became available heroin overdose deaths fell by 37% (Schwartz et al. 2013). This alternative thus assumes that the effectiveness is reduced by 10 percent when applied to Native American communities because of a lack of cultural competency. The status quo for this option is that MAT is completely

unavailable before implementation, so the implementation of the program decreases deaths by 27% of the baseline.

Option 3: Healing to Wellness Court Costs

Cost Assumptions		Source
Salary for case manager	36	Sector average between 33 and 40 per hour
Hours worked per week	37	Standard
Salary for Judge per year	80,000	Sector average, low estimate
Salary for clerk per year	20,000	Sector average
Time spent on H2W Court	0.3	Estimate
Office space rental (yearly)	720	National office rental average
Yearly item expenses	150	Estimate: includes ceremonial items and office supplies
Upfront item expenses	300	Estimate: includes ceremonial items and office supplies
Salary of grant writer/ administrator	30	Sector estimate between 25 and 100
Hours spent upfront administration	116	Literature: Hippel 2015

Estimates on Healing to Wellness Court include the salaries of courtroom personnel, including the judge or magistrate and a clerk. These are then divided assuming that these personnel spend about 30 percent of their time on Healing to Wellness activities and not other tribal court responsibilities. The average salaries, office spaces, and upfront costs of applying to grants are all based on sector averages. The time personnel spend on Healing to Wellness specifically and the cost of office supplies are estimated. Costs do not account for changes in costs depending on the number of individuals enrolled in the program. Costs also do not account for the facility and building expenses of an entirely new court building.

RESULTS: The Benefit-Cost Analysis of Opioid Treatment potentials for tribal communities found that the option with the highest net benefits was Option 3: Cultural Coordinator. Table 2 summarizes major estimates of costs and benefits for each alternative.

Table 3: Net Benefits

	Total Costs	Total Benefits (millions)	Net Benefits
Option 1: Nalaxone Bystander Program	$862,000	$130	$129,859,000
Option 2: Medication-Assisted Treatment	$1,421,600	$1,221.4	$1,219,979,000
Option 3: Healing to Wellness Court	$253,000	Unknown	Unknown

In the end, the Nalaxone Bystander Program had the lowest cost of $862,000, while the medication-assisted treatment program had over $1,400,000 in costs over a 10-year program. While the Nalaxone Bystander Program had some measurable benefits, the benefits of the Medication Assisted

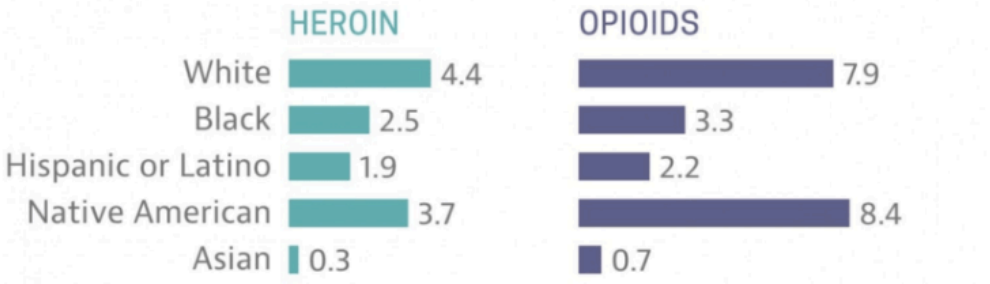
Treatment option was approximately $1,220 million, making the net benefit of a Medication Assisted Treatment for one tribe is over $1,200 million.

Sensitivity Analysis

There are many limitations of this data. The actual effects of medication-assisted treatment and of a healing to wellness court are difficult to quantify, and the numbers will change based on the marginal number of opioid users in a community. To test this, I ran a sensitivity analysis. This involved changing the key assumptions of the benefits compared to the next best option. The Naloxone Bystander Program was assumed to have a 14.88 percent effectiveness in the short term: even if the program was 100 percent effective in the short term, Medication Assisted Treatment still surpassed Option 2 in overall benefits. Key assumptions about long term benefits of Naloxone would have to change in order for this option to be recommended under any sensitivity analysis.

Appendix B: Graphs and Charts

Graph 1: Overdose Deaths by Race in 2014 (per 100,000 people)

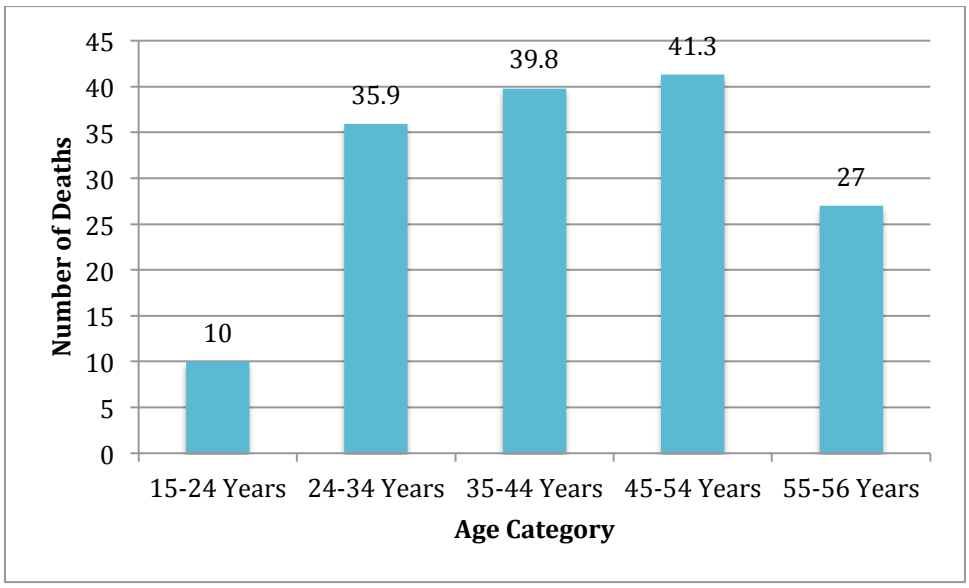


Source: CDC, 2016

Graph 2: AI/AN increases in death rates 2000-2015

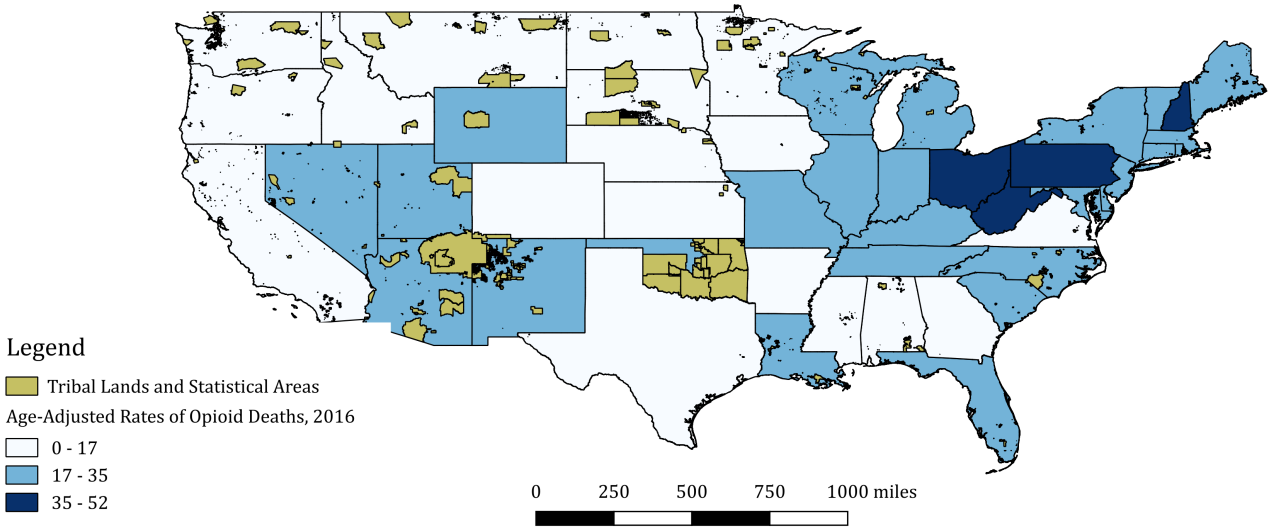
Source: CDC, 2015
*Rates per 100,000 people

Graph 3: AI/AN Opioid Deaths by Age Group, 2015



Source: CDC, 2016

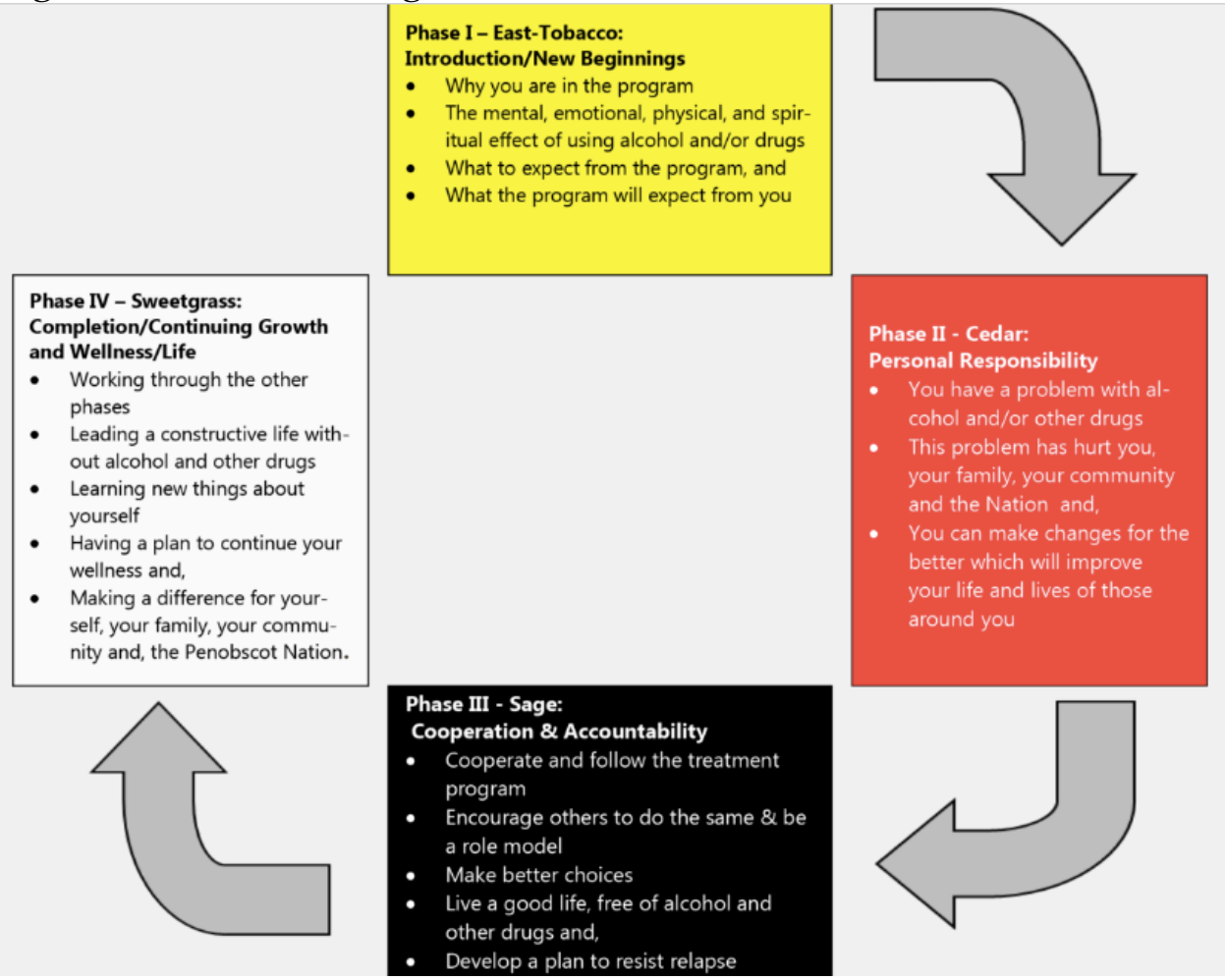
Figure 1: Map of Rates of Opioid-related Fatalities and Tribal Lands, 2016



Source: CDC, 2017; U.S. Census

The data above shows the states for which, as of 2016, the rate of opioid-related fatalities was increasing from the previous year. This therefore highlights which areas of the country have the highest need for policy intervention and whether they correlate with easily visible Native American lands and statistical areas.

Figure 2: Model of Healing to Wellness Court



Source: Penobscot Nation

Appendix D: Estimated AI/AN Opioid Deaths

Methodology

Unfortunately, many of the studies that describe opioid deaths by race exclude American Indians and Alaskan Natives from that population section. For the purposes of this report, data from the CDC listing opioid related deaths, as compiled by Andrew Whiteman for Axiom, was used. The data listed number of deaths from both prescription and illicit opioids, including heroin. It was originally split into age categories, and the table above combines deaths in each age category to calculate the total for each year, and then total the number since 1999 in the right-hand column. I also calculated the percentage change from year to year, and found the average increase year to year to be 8 deaths, and after 2015 data the number of deaths per year is calculated using that estimate.

Thus, as of 2015, 1,625 American Indians and Alaskan Natives have died from prescription opioid or heroin-related overdoses since 1999. At the 2016 estimated rate, that number will reach 3,434 by the year 2026 if no action is taken to combat the crisis. Also recall that the CDC estimates a 35 percent variability in reporting for American Indian and Alaskan Native data.

Table 1: Number of AI/AN Deaths Since 1999

Year	Per Year Deaths	Total Deaths
1999	33.9	33.9
2000	31.6	65.5
2001	38	103.5
2002	53.7	157.2
2003	66.2	223.4
2004	87.7	311.1
2005	82.1	393.2
2006	97.1	490.3
2007	99.6	589.9
2008	112.4	702.3
2009	124.1	826.4
2010	120.5	946.9
2011	128.7	1075.6
2012	136.3	1211.9
2013	136.1	1348
2014	150.5	1498.5
2015	154	1652.5
2016	162	1815
2017	170	1985
2018	178	2163
2019	186	2349
2020	194	2543
2021	202	2745
2022	210	2955
2023	218	3173
2024	226	3399
2025	234	3633
2026	242	3875

*Perscription and Illicit combined, deaths defined by CDC
Source: CDC, 2016