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# Prescription Opioids and Heroin Abuse in New Mexico: SWOT Analyses of Possible Policies/ Interventions and the way forward

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**PRESCRIPTION OPIOIDS AND HEROIN ABUSE IN NEW MEXICO:  
SWOT ANALYSES OF POSSIBLE POLICIES/INTERVENTIONS  
AND THE WAY FORWARD**

**BY**

**Ali Abbasi**

BACHELOR'S IN SOCIAL SCIENCE,  
INTERNATIONAL RELATIONS, 2013

THESIS

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**Prescription Opioids and Heroin Abuse in New Mexico: SWOT Analyses  
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**B.S., Social Sciences, International Relations, SZABIST, 2013**

**M.P.A., Public Administration, University of New Mexico, 2018**

**Abstract**

Throughout the last decade or so, Opioid related fatalities are at all-time high in the United States. New Mexico's problem with Opioids abuse is not a new phenomenon and a large number of New Mexicans are losing their lives almost on a daily basis. The paper highlights the alarming situation of overdose deaths caused specifically by the abuse of Prescription Opioids and Heroin which, in 2016 alone have taken 347 lives in New Mexico. Policy makers along with other stakeholders play a vital part in shaping the politics along with other interventions which can help tackle the epidemic. The paper provides analysis of state policies along with other initiatives taken to tackle the Opioids epidemic in New Mexico. After an in-depth analysis of the situation in the state, the paper will conduct strengths, weaknesses, opportunities and threats (SWOT) analysis of possible interventions and policies aimed at addressing rising overdose deaths caused by Prescription Opioids and Heroin. Recommended interventions include, Creation of Prescription Opioids and Heroin crisis Action Team, Implementation of Alternative to Opiates program within the healthcare setting, Heroin Assisted Treatments as well as considering Opioid Use Disorder as a qualifying condition for accessing Medical Cannabis. Rising unnatural deaths caused by this epidemic is severe and all the stakeholders in New Mexico must call for desperate measures to deal with such desperate times.

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## Introduction

According to a report by President's Commission on Combating Drug Addiction and Opioid crisis, in 2016, 64,000 Americans lost their lives to drug abuse. Currently, the state of New Mexico is ranked number 12<sup>th</sup> in the country in terms of overdose deaths linked to drug abuse. The purpose of this paper is to understand the prescription Opioids and Heroin crisis in New Mexico and what has led to aggravate this issue in the state.

Once the problem is highlighted, the paper will turn the attention to current strategies, policies, interventions implemented in the state aiming at dealing with prescription opioids and heroin crisis. Finally, by analyzing data and current practices, it will provide recommendations concerning how existing practices can be modified as well as how evidence-based practices implemented elsewhere, if implemented in New Mexico can help the cause in addressing the issue of increasing overdose deaths caused by Prescribed opioids and Heroin.

In this paper, the overdose death data records are accessed through but not limited to New Mexico indicator-based information system (NMIBIS) along with several other sources including; Center for Disease Control and Prevention (CDC); New Mexico Department of Health (NMDOH); and several other open sources including Drug Enforcement Agency (DEA); National Institute of Health (NIH); Substance Abuse and Mental Health Services Administration (SAMHSA); Center for Medicare and Medicaid services (CMS) and Office of the Medical Investigator (OMI). The data provides all the information regarding overdose death rates, type of opioid involved, as well as information including the demographics like age, gender, ethnicity etc.

Analyzing the data will provide the resources to identify the problem at its root, and by investigating the abuse of prescribed Opioids as well as illicit opioid Heroin, the severity of the

issue leading to high levels of overdose deaths in the state will be revealed. By understanding the issues and its implications on New Mexico and by conducting SWOT analysis of possible policies and interventions, the paper will conclude by providing recommendations to curb the ongoing prescription Opioid and Heroin crisis. This document will provide policy makers a foundation of developing policies and formalizing interventions that are needed to address this issue.

## **Literature Review**

### **What are Opioids?**

Opioids derived from opium are a class of drug that are used to treat pain. Opioid medications work by binding to specific opioid receptors in the brain, spinal cord, and gastrointestinal tract. Pain relievers which are legally available through doctor's prescription (hydrocodone, oxycodone, morphine and many others), heroin (an illicit opioid) and fentanyl (a form of synthetic opioid) are some of the examples. The way opioids work is simple, they alleviate the pain signal to the brain which in turn leads to reduction in pain (National Institute of Drug Abuse, n.d).

### **Categories of Opioids**

Center for Disease Control and Prevention (CDC) Injury Center consider deaths and nonfatal overdoses in four categories of opioids including:

1. **Natural opioids** (including codeine and morphine) and **semi-synthetic opioids** (medications like hydrocodone, oxycodone)
2. **Methadone** (a synthetic opioid)
3. **Synthetic opioids** other than methadone (drugs like fentanyl)
4. **Heroin**, an illicit (illegally made) opioid produced from morphine.

These categories are important to understand the type of Opioids involved in overdose deaths. The paper will focus on the data using CDC injury center approach of classifying the opioid involvement in causing overdose deaths in New Mexico over the period of last ten years.

### **Opioid Crisis**

The severity of the drug abuse crisis in the United States is taking more than 175 deaths every day with 64,000 deaths in 2016. Alarmingly, 43,000 out of these 64,000 deaths were caused by Opioid Use Disorder (OUD). (Christie, Baker, Cooper, Kennedy, Madras & Bondi, 2017).

It is imperative to understand the underlying cause of Opioids abuse. When taken as prescribed for a limited amount of time, Opioids are useful in relieving pain. However, the problem arises when they are misused and taken in high quantity. Opioids tend to create a euphoric feeling which then, gives birth to addictive behaviors. This addictive behavior is further aggravated when a person on Opioid medication develops tolerance towards the drug and experiences withdrawal symptoms such as body aches and nausea. People abuse Opioids not just to get euphoric feelings but to get relief from such withdrawal symptoms. Dependence on Opioids in particular is considered to be as a chronic, brain-based disorder with a high potential for relapse (Timko, Schultz, Cucciare, Vittorio & Garrison, 2016). The current Opioid epidemic in the United States is the outcome of the misuse and addiction of Opioids in all forms.

Awuah, Okyere, Curi and Pon and Stern (2016) blamed the crisis on increasing number of prescriptions dispensed leading to increasing number of overdose deaths. Their research highlighted the role of fewer safe pharmacologic options for managing pain and how this has led to increasing use of opioids along with the increasing opioid related mortalities (p.24). The trend



of increasing overdose deaths with increased prescribing of medications has been an ongoing issue which must be dealt with in order to contain the crisis.

The Opioid crisis in the United States is causing high societal cost and negatively affecting our communities. A study conducted in 2011 estimates the total societal costs of prescription opioid abuse at \$55.7 billion in 2007. The figure comprised of workplace costs estimated at \$25.6 billion (46%), \$25.0 billion (45%) accounts for health care costs, along with criminal justice costs mainly comprising of correctional facility and law enforcement which accounted for \$5.1 billion (9%) (Birnbaum, Cleveland, Roland, Schiller, Waldman, White, 2011, p.657). The figure provides the picture for policy makers to understand the magnitude of the adverse outcomes caused by the crisis and also highlight the need for addressing the issue which is significantly burdening our economy.

As the focus of the paper will be on overdose deaths caused specifically due to the abuse of Prescription opioids along with Heroin, the following section provides deeper understanding on the abuse and misuse of these two categories and how the issue is resulting in an increasing overdose death rate across the Nation as well as in New Mexico.

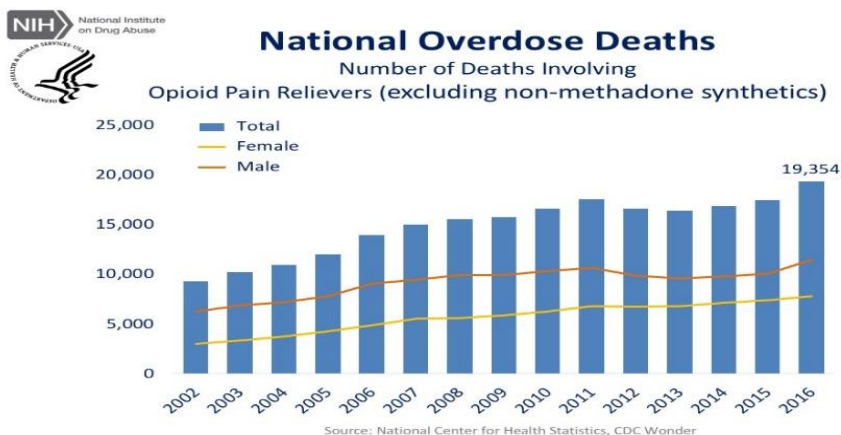
**Prescribed Opioids.** Prescribed opioids or prescription pain relievers are medications recommended by physicians to the patients for treating pain usually more moderate to severe. Opioids contains chemicals which help relax the body and alleviate pain which is why they are used as medications (NIDA, n.d). Often, opioids are prescribed to treat severe pain and medical conditions followed by surgery, accidents or condition like cancer. Prescribed opioid helps patients to alleviate and manage their pain correctly if taken as prescribed. Despite being obtained through prescription, increasing fatalities associated with opioid painkillers has led to concerns about their misuse and abuse (Ferris, Lynskey, Morley & Winstock, 2017).

America's problem with prescription Opioids has been a growing concern for the past several decades. "Prescription opioid medications has surged across the United States over the last two decades which led to some inadvertent consequences causing fatal overdoses from these drugs climbing from 4,000 in 1999 to more than 14,000 in 2014 (Stanhope, 2018). The amount of opioid prescribed in the US peaked in 2010 and has been in decline since then. However, it is also important to highlight here that the recent figures of the number of prescribed opioids are three time higher than what it was in 1999. Prescribers wrote nearly a quarter of a billion opioid prescriptions in 2013-2017 which is enough for every American adult to have their own bottle of pills (CDC, n.d).

In order to find a cure for the Opioid crisis, it is important to acknowledge that the way pain is treated must be changed, where only those who are in pain actually have access to Opioids. Additionally, interventions to reduce non-medical uses leading to overdose deaths should also be taken.

Prescription opioids use is associated with several serious health risks, and it is essential to carefully consider the risks while using such medications. Dangers include Opioid use disorder (addiction), overdoses, and eventually death. From 1999 to 2016, more than 200,000 people died in the United States from overdoses related to prescription opioids. Overdose deaths involving prescription opioids were five times higher in 2016 compared to what they were in 1999 (CDC).

The figure below illustrates the national overdose deaths caused by prescription pain relievers from 2002 to 2016. The figure leaves out the non-methadone synthesis due to deaths caused by illicitly manufactured Fentanyl, to accurately reflect overdose deaths by prescribed opioids.

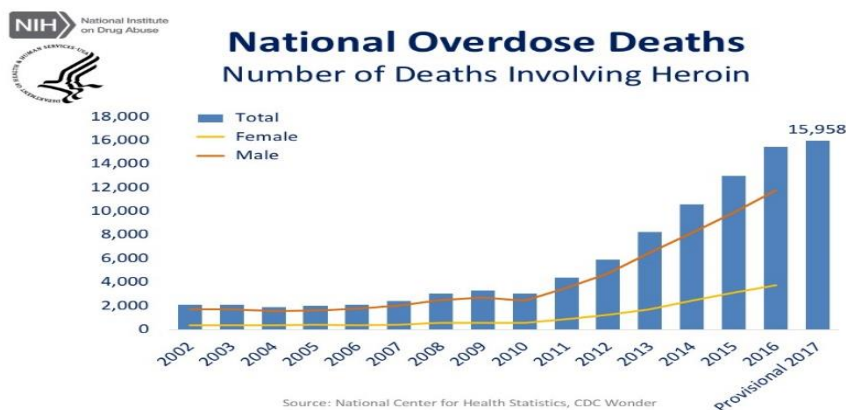


**Figure 1: National Overdose deaths involving Opioid Pain Relievers**  
*Retrieved from National Institute of Drug database (2018)*

**Heroin (Illicit Opioid).** Heroin, an illegal, highly addictive drug processed from morphine, is a naturally occurring substance extracted from the seed pod of certain varieties of poppy plants (NIDA, n.d). Over-prescription of licit opioids over the period of last two decades fueled the rapid surge in non-prescribed opioids - resulting in a large number of overdose deaths. Furthermore, the availability of low-cost illegal Heroin and illicitly manufactured fentanyl made the situation even worse and contributed in causing the current opioid epidemic.

Interestingly, there is also a significant amount of evidence which suggests that there is causal relationship between abuse of prescribed opioids and use of Heroin. A study concluded that almost 80% of persons who recently began using heroin had nonmedically used prescription opioids before. (Balding, Compton & Jones, 2016).

The figure below provides a snapshot of the current number of overdose deaths caused specifically by Heroin. The chart clearly depicts the increasing trends in terms of overdose deaths caused by heroin in the US and highlights the need to address the issue, since the overdose deaths increased more than seven-fold over the last fifteen years.



**Figure 2: Number of Overdose deaths caused by Heroin, US 2002-2017**  
*Retrieved from National Institute of Drug database (2018)*

### **Defining the Problem in New Mexico**

The paper will now delve into understanding the growing prescription Opioids and Heroin epidemic in New Mexico. To do this, it is imperative to review the history of prescription Opioids and Heroin abuse in New Mexico and understand what caused the problem to aggravate and how it has affected the local population.

### **Factors Contributing to the Current Epidemic**

Over the last decade, New Mexico has been a victim of an increasing rate of overdose deaths caused by prescription Opioid pain relievers and Heroin. This is not just the problem of New Mexico but has been an ongoing crisis for the whole Nation. Prescription Opioids are widely abused, and the role played by clinician's prescribing practices, pharmaceutical companies' aggressive strategies, and other socio-economic factors leading to increase in diversion and abuse is significant. This victimization can be attributed to several factors which are mentioned below:

**Prescribing Opioids to chronic non-cancer patients.** The patterns of rising overdose deaths over the past 20 years can be attributed to the liberalization of laws governing the prescribing of opioids for the treatment of chronic non-cancer pain by the state medical boards in the late 1990s (Boswell, Grider, Helm, Janata, Manchikanti & Pampati, 2012). Over prescribing of pain medications due to changing practices in the late 1990s clearly shows the increasing trend of over dose deaths with increased prescribing in New Mexico. Physicians prescribing higher opioid dosage and the consistent trend of prescribing to non-cancer patients over the past few decades contributed significantly in fueling the crisis.

**Aggressive marketing by pharmaceutical companies.** The marketing strategies to promote Opioid pain relievers since the late 1990s, when Opioids started being prescribed for chronic conditions other than cancer, played a significant role in aiding the crisis of overdose deaths. Regulations shifts largely driven by extremely weak evidence suggesting opioids are not only highly effective, but also safe for chronic non-cancer pain have facilitated overuse of Opioids. The scientific evidence for the effectiveness of opioids for chronic non-cancer pain even after more than two decades remains unclear. (Manchikanti et.al, p.9, 2012). Such evidence suggests that profiting from the sale of Opioids was given more importance by pharmaceutical companies over people's life.

The extensive marketing and promotion of the Opioids by the pharmaceutical companies have resulted in increased sales of Opioids (Zee, 2009). Los Angeles Times investigated aggressive marketing strategies of Purdue Pharma, maker of OxyContin, how they mislead doctors about the longer pain relief which was longer and better than the competitors in the market. A research published in *Jama Internal Medicine* inspected the relationship between Pharmaceutical companies providing meals to physicians and staff comparing it with the amount

of their product being prescribed. The findings of the study highlights that as the number of meals being provided by a pharmaceutical company to a physician and their staff increased, physicians tend to prescribe more of their product (Lopez, 2018).

A pharmaceutical company 'Purdue Pharma' which have been given a lawsuit by New Mexico along with several other states was recently uncovered about the knowledge of its Opioids being abused and misused. Despite the company's knowledge about one of its product 'OxyContin' which was crushed and snorted for narcotic use, Purdue Pharma still promoted it as less addictive (Meier, 2018). Such aggressive advertising to promote the brand and persuading doctors to prescribe highly addictive, dangerous opioids, have turned patients into drug addicts for pharmaceuticals corporate profit (Hallinan, 2017, p.5). The role played by Pharmaceutical companies throughout the late 1990s aimed at taking people's pain and suffering away did the opposite. Large number of people have lost their lives, and more lives are threatened due to similar practices of Pharmaceutical companies.

**Role of clinicians.** Physicians played a significant role in prescribing Opioids in large amounts since the late 1990s, mainly to relieve their patients from pain. This led to increased availability of prescription Opioids throughout the last decade, resulting in more people getting addicted to the drugs. When they couldn't afford or access prescription Opioids, they turned to Heroin, a cheaper alternative readily available on the streets of New Mexico. In New Mexico, clinicians inappropriate prescribing practices caused the deaths of large number of New Mexicans. Many patients who were prescribed Opioids are either addicted to them or have overdosed on them or shifted to Heroin.

Because of the lack of alternatives to Opioids for relieving pain, it was understandable for physicians to prescribe Opioids. However, the problem arose due to lack of physician training,

prescribing high dosage and their inability to identify other risk factors among the patients which make them more vulnerable to abuse, addiction and eventually overdose death.

**Socio-economic factors and the dire health situation of New Mexicans.** New Mexico is among the states which suffers from interrelated and complex socio-economic problems such as poverty, unemployment, fewer job opportunities, alcohol and drug abuse, mental health disorders, homelessness, and high crime rate. It is imperative to highlight that people with addictions often have other medical conditions, including mental health issues, along with a variety of socioeconomic problems such as joblessness, homelessness, and family turmoil. (Lopez, 2018). The crisis is not only fueled with high prescribing rates by clinicians or pharmaceutical companies' aggressive strategies, but other socioeconomic factors in New Mexico are also contributing to the crisis and making the situation worse.

A study concluded that opioid-related decedents had multiple substances in their blood at the time of death. Alcohol is the most predominant element found more frequently in opiate (i.e., heroin and opioid) deaths than any other substance. The study also emphasized on the fact that causes of deaths are multifactorial, due to physicians prescribing behaviors along with patient's non-medical use patterns and systematic failings (Cochella, Dasgupta, Fakata, Fine, Fishman, Peppin & Webster, 2011).

Similarly, a paper titled 'Prescription Opioid Abuse in Chronic Pain: A Review of Opioid Abuse Predictors and Strategies to Curb Opioid Abuse' identified several risk factors which are contributing to opioid abuse and misuse. Important factors highlighted include inability of physicians to identify at-risk pain patients, family history of drug and substance abuse, high levels of pain disability among patients and unemployment. Likewise, the prevalent of Prescription opioid use disorder tends to be more among, incarcerated population, cigarette

smokers, male and white race, people with posttraumatic stress disorder. Self-reported cravings also cause the misuse of prescribed opioids (Sehgal, Manchikanti & Smith, p.71 2012).

New Mexico's crisis presents a similar picture where the presence of most of these factors highlighted above are fueling the epidemic. Family history of addiction, abuse of alcohol (80% drug abusers abuse alcohol), unemployment, poverty, high incarcerated population, high percentage of people with Post Traumatic Stress Disorder and high drug supply, along with many other factors, are constantly leading to an increase in overdose death rate in the state.

### **Impact of Opioid and Heroin Epidemic in the State of New Mexico**

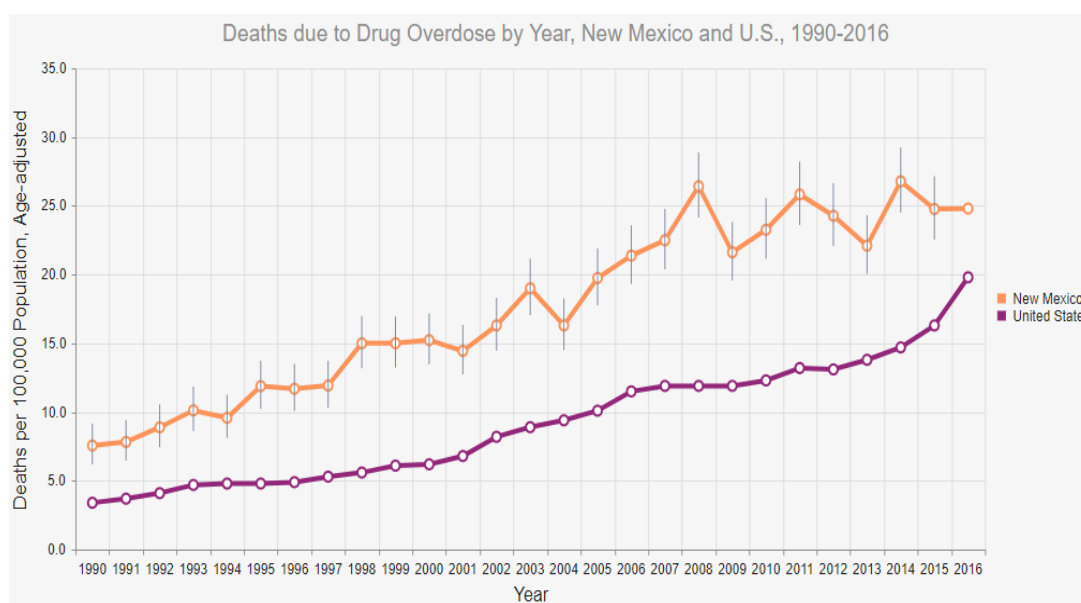
New Mexico is among the states where prescription opioid and heroin related mortality is a major concern. In 2012 there were twelve states in the United States that had more opioid prescriptions than it did citizens and New Mexico is among one of them (Nolan & Amico 2016). The state's comparison with the nation in terms of drug overdose death rate presents an alarming picture.

Emily Kaltenbach, state director, Drug Policy Alliance (DPA) stated in the New Mexico's state legislature interim committee's report that "Prescription drugs and Heroin are the primary causes of overdose deaths nationwide and in New Mexico" (NM GOV, 2017). Policy reforms in the state are needed to be approached thoughtfully and changes in the current practices are needed in the state more than ever so that the issue of Prescription Opioids and Heroin abuse and addiction leading to mortality can be dealt with.

Figure 3 below, illustrates that there has been a constant increase in the drug overdose death rates in New Mexico from 1990 to 2016 (an increase from 7.7 deaths per 100,000 people in 1990 to 24.8 deaths in 2016). On the average, the United states death rate increased from 3.4 deaths per 100,000 people in 1990 to 16.3 deaths (NMDOH, 2017). Preventing opioid abuse and



continuing the need for treatment along with controlling the supply of illegal opioids particularly Heroin and Illicitly manufactured fentanyl is important in order to curtail the crisis (Aleshire, Gladden, Rudd & Zibbell, 2016). The trend over the last few decades highlights the severity of the issue and similarly expresses the need for addressing the epidemic of drug overdose deaths caused by Prescribed opioids and Heroin.



**Figure 3: Drug overdose death rates, US vs NM 1990-2016**

*Retrieved from database of New Mexico Department of Health, New Mexico Indicator-based information system, 2018*

In 2015, New Mexico was ranked 8th in the nation for highest percentage of drug overdose deaths going down significantly from 2<sup>nd</sup> throughout the nation in 2014. The most recent ranking for 2018 by CDC shows New Mexico ranked 12<sup>th</sup> in the nation in terms of overdose deaths rates. (CDC, 2018). Implementation of several programs throughout the state and enacting new policies and interventions played a major part in the decline in the ranking for overdose deaths in New Mexico.

On the other hand, some argue that New Mexico hasn't done much to deal with the crisis. Despite being recognized as a frontrunner in the nation in implementing effective policies, New Mexico still needs to show progress in achieving the trend of decreasing overdose and related deaths. New Mexico's problem to Opioid abuse and addiction should be dealt with highest priority and much reforms are needed at the community, local and state level.

**Impact on different New Mexico counties.** According to 'New Mexico Substance Abuse Epidemiology Profile', Bernalillo county has highest number of drug overdose deaths with 923 deaths in total from 2012 to 2016. Total number of deaths in New Mexico from 2012 to 2016 has a staggering figure of 2,465 deaths. This means that in 1,825 days, 2,465 people died in New Mexico due to drug overdose. (NMDOH, 2017). Simply, there has been a drug related fatality in New Mexico every 18 hour.

Rio Arriba County also considered as a heroin capital of the country had highest drug overdose death rate (85.8 deaths per 100,000) during 2011-2015. This county has seen the problem of Opioid addiction decade before the entire nation. Overdose deaths in the New Mexico county with the highest death rate (Rio Arriba) were 89.9 deaths per 100,000 population. However, New Mexico's rate (24.8) continues to remain higher than the most recently announced national rate (16.3) per 100,000 population reported for 2016. (NMDOH, 2017).

It is important to draw attention to the fact that despite higher age adjusted death rates, the total number of deaths need to be taken into consideration when prioritizing resource distribution or policies enactment. For instance, Rio Arriba county may have highest death rates on average, but Bernalillo county with high population percentage and more overdose deaths number might get more resources and funding to deal with the crisis than Rio Arriba county.

**Impact on gender and specific ethnicities.** According to a report by Department of Health (2017), Hispanic population have the highest number overdose deaths at 26.9 deaths per 100,000, followed by Whites at 23.6 deaths and Blacks with 22.6 deaths per 100,000. Asian and Pacific Islanders have the least amount of overdose deaths among all ethnicities in New Mexico with averaging 5.7 deaths. Approaching the problem by keeping different ethnicities in mind would help provide better resource allocation and effective policy making in terms of dealing with the problem.

Table 1 below derived from New Mexico's substance abuse epidemiology report from 2017, present the figures from Office of Medical Investigator's data on unintentional overdose deaths from 2012 to 2016. The data categorizes male, female, along with type of drug involved that is prescribed or illicit. With the actual numbers, the graph below shows the average rate and provide comparisons among different categories of drugs involved in overdose.

**Table 1: Unintentional drug overdose deaths and rate among genders in New Mexico, 2012-2016**

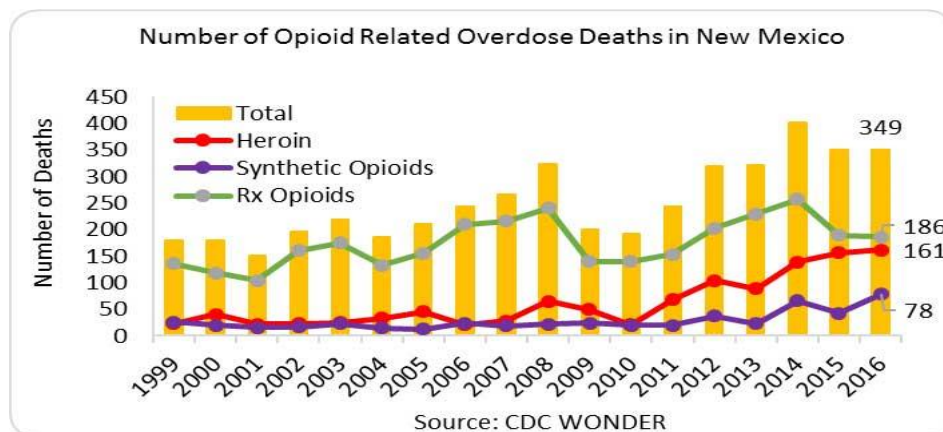
County	Deaths						Rates*					Total
	Sex		Overdose Type			Total	Sex		Overdose Type			
	Male	Female	Illicit	Rx	Both		Male	Female	Illicit	Rx	Both	
Bernalillo	528	255	332	290	158	783	31.7	14.6	9.8	8.5	4.7	23.1
Catron	0	3	0	3	0	3	0.0	83	0.0	38.7	0.0	38.7
Chaves	29	24	28	19	6	53	19.2	16.0	9.0	6.5	2.1	17.6
Cibola	14	7	9	9	3	21	19.9	9.3	6.8	6.1	2.1	15.0
Colfax	13	3	6	5	5	16	42.7	10.4	11.1	7.3	8.9	27.3
Curry	15	10	4	15	5	25	11.1	9.3	1.6	6.5	1.9	10.4
De Baca	1	0	0	1	0	1	37.0	0.0	0.0	18.0	0.0	18.0
Dona Ana	91	49	53	56	30	140	19.6	10.0	5.6	5.9	3.1	14.7
Eddy	33	17	23	16	11	50	24.7	13.2	9.0	5.8	4.3	19.1
Grant	18	11	10	17	1	29	33.9	19.0	9.0	15.1	1.2	26.4
Guadalupe	3	4	5	1	1	7	21.2	44.2	22.6	4.3	2.9	29.8
Harding	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
Hidalgo	4	4	2	6	0	8	39.1	34	6.7	30.1	0.0	36.8
Lea	24	21	20	23	2	45	13.9	14.3	6.4	7.2	0.6	14.1
Lincoln	15	18	9	22	2	33	35.9	44.8	13.7	25.1	2.0	40.7
Los Alamos	5	4	2	7	0	9	13.3	8.4	2.9	7.7	0.0	10.7
Luna	6	7	4	8	1	13	12.4	13.6	4.9	7.4	0.6	12.9
McKinley	19	9	11	12	5	28	13.0	5.1	3.2	4.2	1.5	8.9
Mora	3	2	2	2	1	5	27.1	25.6	9.1	11.0	6.0	26.1
Otero	32	24	19	30	7	56	20.4	15.5	6.6	9.5	2.0	18.0
Quay	2	8	2	5	3	10	5.4	38.3	2.6	13.0	6.8	22.3
Rio Arriba	106	36	65	35	42	142	120.3	40.2	37.0	18.8	24.6	80.4
Roosevelt	9	5	3	10	0	14	18.5	10.9	3.0	10.8	0.0	14.7
Sandoval	70	38	35	54	17	108	22.3	10.9	5.7	7.8	2.7	16.6
San Juan	52	32	29	44	9	84	16.8	10.4	4.6	7.1	1.6	13.6
San Miguel	22	17	11	20	8	39	36.0	27.9	9.1	16.5	6.4	32.0
Santa Fe	119	62	75	66	40	181	36.2	18.4	11.9	9.3	6.2	27.4
Sierra	11	10	9	10	2	21	45.8	30.6	19.7	13.7	4.7	38.0
Socorro	10	3	8	2	3	13	24.1	8.6	10.1	2.5	4.0	16.6
Taos	25	12	11	17	9	37	35.5	13.5	8.6	10.1	5.8	24.6
Torrance	11	7	7	9	2	18	26.4	19.0	9.6	9.4	3.7	22.7
Union	1	0	0	1	0	1	7.7	0.0	0.0	4.5	0.0	4.5
Valencia	53	17	32	25	13	70	28.5	9.0	8.8	6.6	3.5	18.9
Total	1,344	719	826	840	386	2,063	27.3	14.1	8.4	8.3	3.9	20.7

*Retrieved from New Mexico Substance abuse epidemiology report (2017); OMI death files; UNM-GPS population files; SAES*

It is important to recognize the limitations that are attached with the numbers because these categories are mutually exclusive and determining the exact drug causing the fatality is not easy due to involvement of more than one substance. It is also vital to acknowledge that to craft appropriate policies, it is imperative to determine whether the overdose is either due to prescribed or illicit Opioid. For instance, policies can be established looking at the factor of only blaming oxycodone as a culprit in overdose deaths, but the death might have been caused by illicitly manufactured Fentanyl.

This approach will help policy maker and other stakeholders in ensuring that enough resources are diverted towards law enforcement in dealing with the issue of controlling the supply of illicitly manufactured Fentanyl rather than limiting the number of prescribed pain medication for terminally ill patients who without the medications, would have a higher tendency to switch to illicit opioids like heroin.

Figure 4 below illustrates the number of Opioid related fatalities looking specifically at Heroin, Synthetic and Prescribed Opioids. It highlights the trends from 1999 to 2016 showing that prescription opioids related death increased throughout from 1999 and peaked in 2014 at 257 deaths but since then has been on a decline with the figures of 2016 showing 186 deaths in New Mexico caused specifically by prescribed Opioids. Heroin on the other hand has seen a spike in the recent years and the graph shows the highest number of deaths involving heroin surpassed previous years death with 161 deaths in 2016 alone.



**Figure 4: Overdose Deaths involving Heroin, Synthetic Opioids and Rx Opioids New Mexico 1999-2016**

*Retrieved from National Institute of Drug database (2018)*

Prescription Opioids is a major cause for this epidemic in New Mexico. According to New Mexico Department of Health (2017), 53% of drug overdose deaths involved Prescription drugs, 33% involved illicit drugs along with 14% involving both types. The most common drugs as indicated by Medical examiner data were prescription opioids (e.g., methadone, oxycodone, morphine 48%), heroin (34%), tranquilizers/muscle relaxants (23%), cocaine (17%), methamphetamine (16%) and antidepressants (12%) (not mutually exclusive) (NMDOH, 2017).

Deaths caused by Heroin as well as synthetic Opioids has seen a surge in the recent years causing significant numbers of overdose deaths in the state of New Mexico. The number of overdose deaths caused by heroin slightly increased from 2015 from 156 deaths to 161 deaths in 2016. National Survey on Drug Use and Health in 2014 and 2015 estimates the number of past year heroin users among New Mexico adults to be 3,000. Interestingly, 9,649 people enrolled in the department of health's syringe services program in 2016, where 6,976 people indicated heroin use(Gallagher, 2018). The estimates clearly suggest that number of heroin users are

miscalculated, and it is important to identify the right numbers in order to incorporate right policies and interventions to deal with the heroin crisis.

### **Interventions to Curb Prescription Opioid and Heroin Crisis in New Mexico: Policy Analysis**

This section will evaluate the effectiveness of current state policies and other intervention within the state along with identifying and assessing policies implemented in other states and countries which can benefit New Mexico's situation. It will focus on the results of findings and will provide the decision makers with the recommendations in terms of effective policies that will work towards eliminating the plague of Prescription Opioids as well as Heroin abuse in state of New Mexico.

In 2015, news accounts related to prescription painkillers and heroin abuse were as abundant as stories relating to Climate change, Ebola and Measles (Wallis, 2016). President Obama addressed the issue of Opioid abuse with expansive policy reforms and new measures meant to combat harms caused by opioids, including \$1.1 billion in future funding. (Fazio, 2017). Trump administration in late 2017 declared Opioid crisis a public health emergency, since then, major agendas of the administration focused on stopping china for illegal drug trafficking and a developing a vaccine for addiction which is still in its early stages. It is fair to argue that with almost a year since the new administration declared opioid crisis a national emergency, nothing significant has been done at the federal level to deal with the crisis.

Looking back on the crisis in the state, New Mexico state legislature provides information regarding the legislations which were implemented in the state along with those which were not executed. With the help of the data, this section will focus on studying current

state policies, monitor some significant interventions and will offer recommendations to achieve the over-arching goal of reducing the overdose deaths caused by prescribed pain relievers and Heroin.

### **New Mexico State Legislations to Address Overdose Deaths caused by Prescription Opioids and Heroin**

It is important to acknowledge the reforms in state laws which are focused on improving healthcare and physicians' practices regarding prescribing Opioid medication while also keeping the aspect of allowing Opioids for effective pain management. New Mexico state legislature mandated several policies to address the issue of prescription Opioid and Heroin abuse and addiction.

**Senate bill 263: opioid prescription monitoring (52nd legislature - state of New Mexico - second session, 2016, introduced by: Richard C. Martinez).** With the implementation of this bill in the state, prescription monitoring programs (PMPs) were modified and strengthened to better address the issue of prescription Opioid abuse in the state of New Mexico. Starting 2017, the state mandated all prescribers to have access to the data base and integrate the system in all clinical settings around the state. New Mexico is among the only two states, that ensured all 6 measures which National Safety Council highlighted as important aspect to deal with the crisis of opioid overdose deaths. Strengthening PMPs was one of those aspect which was addressed with the passing of senate bill 263.

***PMPs and how they work in New Mexico.*** An online electronic data base system administered by New Mexico Board of Pharmacy tracks the dispensing and prescribing of controlled substances. PMPs enacted in New Mexico's first started collecting data beginning of 2005. PMP provides practitioners, pharmacists and other authorized user with the ability to

review patient's history with the main emphasis on preventing overdose deaths, abuse and addiction caused by controlled substances. Supported by evidence, prescription drug monitoring programs (PMPs) reduce the amount and number of drugs prescribed, particularly opioids (Chang, 2016; Fisher, 2012; Rasubala, 2015; Rutkow, 2015 & Wastila, 2012)

In New Mexico, all laws and regulations concerning the PMPs are administered and enforced by New Mexico Board of Pharmacies. Prescribers can register online and access patient reports containing the history of medications which the patients had and are currently using. Reports help in identifying 'doctor shopping', help evaluate therapies, monitor compliance with patient treatment agreements (contracts), along with recognizing possible altered prescriptions (NM Board of Pharmacy, 2015).

New Mexico is among the states that mandates all prescribers to register with the PMPs. This resulted in a significant change in term of prescribing practices. Evident by research states which have effectively implemented prescription monitoring programs within their vicinity appears to have smaller increases in opioid misuse along with fewer opioid related hospital admissions per year compare to states without prescription monitoring programs (Reifler 2012 & Reisman 2009).

New Mexico Department of Health's overdose prevention first quarter of 2018 shows that total number of controlled substance patients in New Mexico for the first quarter of 2017 were 274,956 which reduced to 253,069 by the first quarter of 2018. Report also shows that number of people receiving Opioids also declined by 9.9% from 191,173 to 172,187 patients in 2017 and 2018 respectively. (NMDOH, 2018).

**House bill 277: administration of Opioid antagonists (52nd legislature - state of New Mexico - second session, 2016); Senate bill 262: administration of Opioid antagonists (52nd**

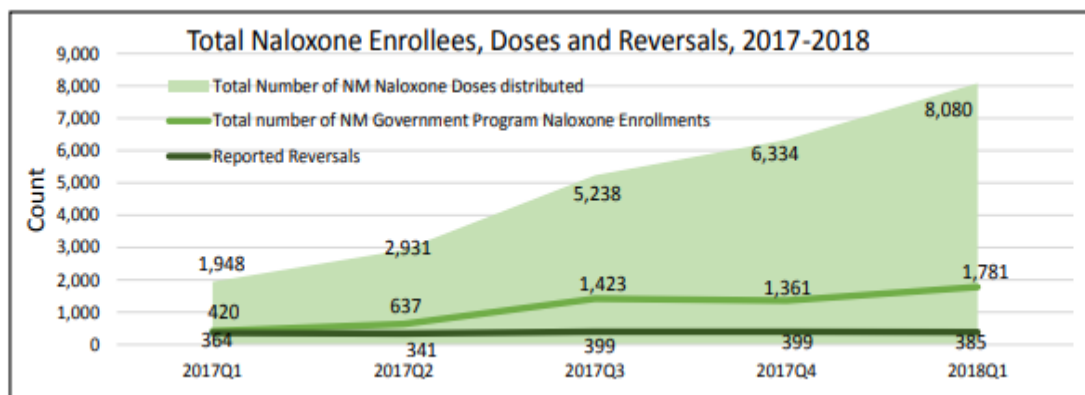


**legislature - state of New Mexico - second session, 2016) & House bill 370: Opioid overdose education (53rd legislature - state of New Mexico - first session, 2017).** The amended section of bill mandates that Opioid treatment centers must provide the patients with education regarding Opioid abuse and overdoses, as well as educate patients on the use of naloxone (opioid antagonist). It also ensures that inmates diagnosed with opioid use disorder at correctional facilities shall be provided with Opioid overdose educations as well as doses of naloxone along with the prescription for naloxone at time of release from correctional facility. The bill also mandates that all law enforcement officers shall carry naloxone all the time when on duty to deal with overdose incident. New Mexico became the first state to pass such legislation in the country.

New Mexico house bill 370 ‘Opioid Overdose Education’ which became effective of July 1, 2017 is the first highly tailored naloxone legislation in the United States aimed at reducing drug overdose deaths by targeting those populations that are most likely to be affected (Katzman et al., 2017). It is also important to evaluate the effectiveness of this legislation to fully understand the impact on patients and societies across New Mexico.

Figure 5 below show the most recent data of the impact of naloxone legislation in the state. There has been a constant increase in the dose distribution which is part of New Mexico’s department of health ‘Harm Reduction Program’ service. The number increased from 1,948 counts of doses in the first quarter of 2017 to 8,080 counts in 2018 (NMDOH, 2018). Enrollments in such programs also saw an increase in the state and the number of reported reversals from naloxone also saw a slight increase. Similarly, increasing distribution of naloxone alone will not solve the overdose death problem and with high cost and lower shelf of naloxone,

it can become expensive for a state like New Mexico with limited resources to afford such expenses.



**Figure 5: Naloxone Enrollees, Doses and Reversals, 2017-18**

*Retrieved from NMDOH overdose prevention quarterly measures report (2018Q1)*

**Senate bill 215: pain management advisory council changes (50th legislature - state of New Mexico - second session, 2012).** This bill signed into law in 2012, brought several changes specifically at containing prescription Opioid abuse in the state of New Mexico. One aspect of the bill is the creation of ‘Prescription drug Misuse and Overdose Prevention and Pain Management Advisory Council’ working for New Mexico Department of Health to provide state with recommendations of tackling the issue. The second aspect of bill mandates the requirement for continuing prescriber education for treatment of non-cancer pain management which will help prevent the crisis in future with better prescribing practices.

**House memorial 56: study heroin-assisted treatment (53rd legislature - state of New Mexico - second session, 2018, introduced) & Senate joint memorial 15: study efficacy of naprapathic medicine (53rd legislature - state of New Mexico - second session, 2018).** State of New Mexico over the past few years have been working diligently to address the prescription

Opioid overdose deaths. This memorial is an example where the state has shown desire to look for alternative method of treatments other than Opioids to deal with pain. Several other agendas have been considered in the state legislature including, House Memorial 61 which calls for February 23<sup>rd</sup> as ‘ChoosePT’ day where state emphasized on ‘Physical Therapy’ and the role therapist play in decreasing Opioid addiction by using therapy to manage pain rather than using Opioids.

### **Failed Legislations**

Several legislations were introduced over the last decade to address the prescription Opioids and Heroin abuse/addiction in New Mexico which were not taken into consideration by the state. Some significant failed legislations worth mentioning includes:

**House bill 241: Opioid abuse prevention & assisted treatment (52nd legislature - state of New Mexico - second session, 2016).** One aspect of the bill calls for a clause stating health insurers ‘shall provide coverage for at least one abuse-deterrent Opioid for each Opioid analgesic active ingredient’. The expenses on naloxone or distribution of antidote can be reduced, if health insurers are brought on board to provide at least one-abuse deterrent. The passage of this legislation would have allowed the correctional facilities to intervene with those population segment, who alternatively would not have opted for the treatment. Having the correctional facilities providing medicated-assisted treatment could have potentially benefited the state since the existence of opioid use disorder is high among incarcerated population in New Mexico.

**House bill 294: reclassify dihydrocodeinone as schedule ii (52nd legislature - state of New Mexico - first session, 2015).** New Mexico currently considers Hydrocodone as schedule II drug, but the combination of this drug with other ingredients are included to be a part of schedule III. Though FDA reclassified the combinations of Hydrocodone as a schedule II drug, the

implementation of this bill would have aligned New Mexico with the Federal Controlled Substance Act. Hydrocodone is among the most frequently prescribed drug because of which it has high tendency to get abused. “In 2004, the United States used 99% of the global supply of the Opioid hydrocodone, according to the 2005 report from the International Narcotics Control Board” (Manchikanti, 2007). Such prescribing practices provides a matching picture of how increased prescribing lead to higher overdose deaths over time.

Prescription Monitoring Programs in the state have played an astonishing role in reducing the amount of prescription medications dispensed. However, the state needs to invest in and consider options for controlling drugs that have higher potential for abuse and are responsible for high number of deaths. Legislations similar to HB 294 should be considered vital in terms of dealing with Prescription Opioid crisis in the state of New Mexico.

### **Impact of Legislations**

There has been a stability in the rate of overdose death rates in the state since 2014 which can be attributed to implementation of several state and federal guidelines, laws, regulations, along with education and advocacy programs. Prescription Monitoring Program, broader access to medicated assisted treatments, naloxone program and other prevention strategies are playing significant role in addressing the State's opioid crisis.

In the most recent reports from New Mexico department of health, there is a 5% decline in Opioids prescribed in the state with 63% of providers using prescription monitoring program. With the implementation of stronger prescription laws, 'doctor shopping' saw a significant decline. The number of patients with overlapping Opioid prescriptions from different prescribers decreased by 13 percent from 2016 to 2017 (NMDOH, p.2, 2018).

Controlling prescription medication has been considered a well-played tactic to reduce overdose death rates in New Mexico but it is important to acknowledge that the process takes time. 2016 mortality data shows a slight increase of overdose death from 493 to 497 in 2016 with the increase in population as well as maintaining the average rate to be at 24.8 deaths per 100,000. The governor of New Mexico also became the first in the US to sign the law, making law enforcement officers to carry naloxone on duty and requiring pharmacists to dispense this drug without prescription.

### **Recommendations**

Enaction of several legislations and state level interventions including the implementation of prescription monitoring programs across all clinical settings, legislation to fund the wide-dispensing of the Naloxone along with requiring law enforcement to carry naloxone, as well as aiding those seeking help from opioid use disorder to be free from involvement in criminal justice system have been effective strategies considered by the state.

Despite the efforts, New Mexico still suffers from higher number of fatal overdoses and the legislature continues to receive extensive testimony from residents and health and social service providers regarding the problem and how the insufficiency of vital resources to meet the demand resulting from the problem is affecting the communities (Ruiloba, 2018). The current scenario presents a need for an effective policy intervention.

This section provides recommendations for the policy makers to introduce certain laws into the legislature along with certain evidence-based practices implemented in other states and countries which, if implemented in New Mexico might help tackle the crisis. By using strategic planning technique for assessing the Strengths, Weaknesses, Opportunities and Threats (SWOT)

of possible policies and interventions, introduction of proposed measures will be justified. This will help create the roadmap for addressing the crisis in the state of New Mexico.

### **Creation of New Mexico's Prescription Opioid and Heroin Action Team**

New Mexico is among the state where the state does not mandate the use of any specific body tasked with addressing the problem of prescription opioid and heroin abuse and addiction. The need for a separate entity tasked specifically to target the issue of prescription opioids and heroin crisis is important to curb the problem.

House Memorial 12 (Died) in 2018 regular session introduced by Patricio Ruiloba highlighted the current opioid related issues in the state and highlighted, “there is no single entity that bears the responsibility for leading and coordinating the state’s response to opioid use disorder crisis”. The memorial suggested the need to create an “opioid crisis subcommittee” to address the crisis and make recommendations to the legislature by the end of year 2018 (NM GOV, 2018). Creation of an action team working specifically towards eliminating the crisis similar to Governor Kasich of Ohio’s team might prove beneficial for New Mexico.

Governor Kasich of Ohio in 2011 created Governor’s Cabinet Opiate Action Team which implemented several multi-faceted strategies to deal with high overdose deaths in the state of Ohio. Similarly, King County in Washington convened a task force named ‘Heroin and Prescription Opiate taskforce to address the rising fatalities caused by these licit opioids and Heroin in the county. The taskforce in king county published the report in 2016 emphasizing on long and short-term strategies to avert opioid use disorder, overdose, along with enhancing access and other supportive services for those facing the crisis (p.1).

New Mexico can follow the footsteps of Ohio’s Opiate Action Team, as well as King’s County, Seattle, ‘Heroin and Prescription taskforce’. The team can be solely responsible in

promoting responsible opioid use, prevent addiction, reducing the number of fatal overdoses, and improve treatment access to all underserved areas and other supportive services for individuals experiencing OUD.

The role and responsibilities taken up by the task force can include, but not limited to the table below.

<b>Table 2</b>		
<i>Role of New Mexico's Prescription opioids and Heroin crisis Action Team</i>		
<b><u>Prevention</u></b>	<b><u>Expansion of Medicated-assisted Treatments</u></b>	<b><u>Expand Access to Naloxone for Overdose prevention</u></b>
<p>Raise Awareness of the adverse effects including overdose</p> <p>Identify OUD through PMPs at early stages</p> <p>Youth drug Prevention</p> <p>Promotes safe storage and Disposal</p>	<p>Ensuring and promoting use of Buprenorphine along with methadone to all underserved areas of NM</p> <p>Implement evidence-based treatment strategies including HAT and Oversee supervised consumption sites (SCS)</p> <p>Work on eliminating logistical and political barriers in terms of getting people treatment access.</p>	<p>Aim to reduce overdose deaths with naloxone distribution</p> <p>Aware community of naloxone uses and access points</p> <p>Evaluate the effectiveness</p>
<p><b><u>Data Driven solutions to deal with the Epidemic</u></b></p> <p>Using technology and data to study the future trends</p> <p>Ensuring that data is shared in real time across all departments</p> <p>Model of Telesphora.</p>	<p><b><u>Lead efforts</u></b> to curb Heroin and Rx abuse partnering with Department of Health; Department of Public Safety; Board of Pharmacy; Insurers; etc.</p>	<p><b><u>Identify</u></b> more evidence-based solutions to address the Epidemic in the state and report directly to state legislature every 6 months about the accomplishments</p>

Additionally, the task of Action team could implement data-driven solutions with the help of machine learning, specifically for prevention, treatment and the usage of opioids (Three of five main agendas of HHS). Using model similar to Telesphora, where the team used a unique blend of human-centered design working with big data to create a platform that uses real-time open-access data and machine learning to predict the occurrence of future mortalities in New Haven, Connecticut (Lindberg, 2018). The task force can follow the example of such model to focus on preventive strategies through predicting future trends to avoid overdoses and better ambulatory services which might prevent future overdose deaths.

#### **New Mexican Doctors can Beat the Opioid Epidemic (ALTO)**

With 42 percent of visits to Emergency Departments (ED) being attributed to pain, the ED could be an efficient and effective venue for reducing and preventing the amount of opioid related overdoses, while also reducing the strain these visits create on the health care system (Cantrill et al., 2012; Noble et al., 2007). As highlighted earlier, from 2012 to 2016, there has been a constant rise in the emergency department visit in the state of New Mexico related to Opioids. Emergency departments can be an important venue for doctors to address the issue, since they are considered as a starting point for a path to opioid addiction and abuse.

Emergency Department dataset is collected in New Mexico in accordance with the state law. Looking at the data from New Mexico's Substance Abuse Epidemiology report, Table 3 below illustrates the opioid-related emergency department visit within the state between 2012 and 2016.



**Table 3: Opioid Overdose Related Emergency Department Visits and Rates\* by Race/Ethnicity and County, New Mexico, 2012-2016**

County	Emergency Department Visits						Rates*					
	American Indian	Asian/Pacific Islander	Black	Hispanic	White	All Races	American Indian	Asian/Pacific Islander	Black	Hispanic	White	All Races
Bernalillo	116	64	58	846	1,013	2,482	77.7	64.9	57.1	51.7	76.0	72.8
Catron	0	0	0	0	4	4	0.0	0.0	0.0	0.0	32.0	24.4
Chaves	0	2	1	57	93	163	0.0	87.7	14.3	35.2	65.8	50.8
Cibola	5	2	0	38	10	65	9.6	220.6	0.0	73.9	36.7	47.3
Colfax	0	0	0	25	20	47	0.0	0.0	0.0	79.3	71.2	74.2
Curry	0	0	4	15	33	62	0.0	0.0	19.8	17.6	25.4	25.2
De Baca	0	0	0	3	0	3	0.0	0.0	0.0	84.1	0.0	35.6
Dona Ana	0	1	10	272	277	584	0.0	7.0	60.0	40.9	90.6	57.5
Eddy	1	0	4	50	94	153	32.4	0.0	94.7	38.1	65.1	54.4
Grant	0	0	3	61	79	144	0.0	0.0	258.8	89.2	112.5	101.5
Guadalupe	0	0	0	4	1	5	0.0	0.0	0.0	23.2	22.8	22.6
Harding	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
Hidalgo	0	0	0	9	10	19	0.0	0.0	0.0	69.9	96.4	81.1
Lea	0	1	7	56	65	130	0.0	42.4	54.8	32.9	48.9	38.8
Lincoln	0	0	1	7	34	47	0.0	0.0	110.8	22.6	59.8	46.8
Los Alamos	0	0	0	9	29	44	0.0	0.0	0.0	60.4	42.3	48.3
Luna	0	1	0	17	37	55	0.0	113.5	0.0	22.0	92.9	43.4
McKinley	20	2	1	29	22	84	7.3	80.7	13.8	62.1	56.6	23.8
Mora	0	0	0	15	4	20	0.0	0.0	0.0	82.9	215.8	95.5
Otero	8	0	3	18	62	101	47.8	0.0	26.8	16.1	36.4	31.3
Quay	0	0	0	8	10	18	0.0	0.0	0.0	45.7	56.6	45.9
Rio Arriba	18	0	1	252	98	406	64.5	0.0	88.1	180.4	462.6	207.8
Roosevelt	0	1	0	4	14	21	0.0	106.4	0.0	10.7	27.7	23.7
Sandoval	73	0	2	45	144	264	31.3	0.0	22.4	37.5	54.6	42.5
San Juan	0	0	0	156	30	190	0.0	0.0	0.0	142.8	121.8	135.2
San Miguel	29	6	1	110	169	360	34.2	47.7	5.6	43.2	56.5	52.4
Santa Fe	8	0	10	378	386	844	41.8	0.0	128.5	100.3	151.6	118.3
Sierra	2	0	0	5	29	39	247.2	0.0	0.0	32.1	66.7	66.2
Socorro	10	0	0	23	27	68	111.5	0.0	0.0	54.2	86.4	80.6
Taos	13	0	2	141	48	205	136.2	0.0	226.6	156.2	97.8	130.3
Torrance	0	2	1	14	20	43	0.0	475.9	70.4	42.5	48.3	55.7
Union	0	0	0	5	3	8	0.0	0.0	0.0	55.6	28.9	39.8
Valencia	4	4	3	79	106	243	28.8	155.7	57.5	35.4	80.7	64.2
New Mexico	307	86	112	2,754	2,974	6,928	33.5	47.3	49.9	57.0	74.1	66.9

*Source: NMDOH BVRHS death files and UNM-GPS population files; SAES*

One example of how the venue of EDs in New Mexico can be used to curb the prevalent of opioid abuse is by adopting the model of Saint Joseph's Medical Center in Patterson New Jersey known as ALTO (Alternative to Opiates Program). The program initiated in 2016 aimed at reducing the Opioids use by using alternative treatment methods. Some of these included: treating back pain patients with trigger-point injections, providing ultrasound-guided nerve blocks for bone-fracture patients, and also treating patients with kidney stones by using methods not requiring the use of opioids to tailor patients' pain management needs (ALTO, n.d). This presents a successful example of introducing alternative to Opioids medication and treatment methods that can be adopted to reduce the use of Opioids.

The ALTO initiative resulted in the reduction of use of Opioids medication by 38 percent in just five months and treated over more than 300 patients using the above-mentioned alternative ways of treating pain with significant results at the success rate of 75% at Saint Joseph Medical Center (ALTO, n.d). The hospital not only focused on reducing the use of opioids while treating acute pain during the visits but also worked on several multifaceted strategies like connecting patients with physical therapy and pain management specialists to work on stopping acute pain becoming a severe one.

Looking at the dataset in figure 7 regarding emergency department visits related to opioids, from 2012 to 2016, there were 6928 visits in total. There has also been an increasing trend over the past few years from an average increase of 48.2 visits per 100,000 people in 2010 to 76.7 visits per 100,000 in 2016 (NMIBS, 2018). The venue of emergency departments for Hospitals in New Mexico can implement ALTO model within the healthcare setting. This can only be made possible if physicians are trained enough and are determined to reduce the opioid abuse and addiction in the state.

Following the success of ALTO in New Jersey, ALTO has also been praised by both state and national level with “Two new bipartisan bills in Congress are highlighting it as well, aiming to set up a nationwide demo and study the results” (Khemlani, 2018). Policy makers in the state can direct the state department of health study the model of ALTO and ensure such methods and guidelines are implemented in the emergency department all over the state. This can be done by bringing emergency department medical directors, physicians’ group, pharmacist and healthcare administrators on board. Implementation of ALTO will help the cause of preventing opioid use and will eventually help bring the number fatalities caused due to prescribed opioid down in future.

Implementing such programs comes with certain limitations. One problem is health insurance companies not willing to pay for non-opioid medications and the bigger problem is patients do not want to pay out of pocket for the medications. Importantly, physicians are not trained enough or does not have desire and willingness to spend more time on patients due to busy Emergency departments as well as incapability of healthcare organization to implement the model of ALTO due to scarce resources (limited physicians). Such limitations are needed to be addressed by the people in authority and programs like ALTO must be implemented across healthcare setting in New Mexico in order to contain the epidemic of fatalities caused by Prescribed Opioids.

<b>Table 4</b> <b><i>SWOT Analysis: Alternative to Opiates Program (ALTO)</i></b>	
<b>Analysis Objectives:</b> The objective of this SWOT analysis is to highlight the implications of alternative to Opiates strategy as implemented by Saint Joseph’s Medical Center in Patterson New Jersey. The analysis will suggest whether ALTO can be an effective approach for reducing Prescription opioid and heroin abuse eventually leading to fewer overdose deaths in future, if implemented across Emergency departments in New Mexico.	
<b>Strengths</b>	<b>Weaknesses</b>
Using non-opioid methods to relieve pain at Emergency Departments in hospitals would lead to less abuse and addiction to opioids Prevent fatal overdose due to prescription opioids Venue can be used to raise awareness about opioid addiction Can prevent acute pain from becoming a chronic pain without opioid dependency	Health insurers will not pay for non-opioid medication Patients not willing to pay for out of pocket medication costs Healthcare Emergency Departments not equipped with enough trained physicians Limited willingness of physicians and Emergency department staff

<p><b>Opportunities</b></p> <p>Since the model is under consideration at federal level, funding to initiate ALTO in NM can be secured</p> <p>Considering high societal, economical costs of opioid abuse, implementing ALTO model in Emergency departments would still be cost effective</p> <p>As the program matures, addressing chronic pain can be the next step without opioid dependency</p> <p>Less use of opioids will lead to less insurance costs, since they won't be paying for expensive medications at emergency departments</p>	<p><b>Threats</b></p> <p>Illicit drug supply will always be a threat, because consumption of Opioids cannot be controlled outside the emergency departments</p> <p>Health insurers and Pharmaceutical companies might not come on board</p> <p>Patients not agreeing to ALTO methods of treatment and their preference for opioid prescription might impact the effectiveness of this intervention</p>
<p><b>Analysis</b></p> <p>Emergency Departments across New Mexico can follow the footsteps of Saint Joseph's Medical Center by implementing measures like ALTO within the healthcare settings. Looking at the analysis, it is evident that New Mexico can benefit from the implication of such measure. Despite some limitations, implementation of ALTO can benefit New Mexico in dealing with the crisis.</p>	

### **Heroin Assisted treatments (HAT)**

Medicated-assisted treatments are considered as promising evidence-based approach in which medications along with behavioral and counselling therapies are provided to tackle opioid abuse and addiction. "In New Mexico, an annual average of about 3,000 individuals aged 12 or older (0.18% of all individuals in this age group) in 2014–2015 had used heroin in the past year" (SAMHSA, 2017). Another recommendation, which has been introduced in the state of New Mexico's 2018 legislative session in form of Memorial, is studying the effectiveness of Heroin-assisted treatments which proves to be an effective strategy to deal with heroin crisis. Such treatments have been implemented in many countries like Switzerland, Canada, Germany, Netherlands and Denmark.

A paper published in The British Journal of Psychiatry ‘Heroin-assisted treatment for Opioid Dependence: Randomized controlled trial’ by Christian Haseen, Uwe Verthein, Peter Degkwitz and Juergen Berger, conducted largest randomized control trial comprising of 1015 people, where the results suggested that such treatments prove to be more effective for those with opioid dependence and continue using heroin while being treated at other medicated assisted treatments (methadone). They also emphasized that despite risks, it should be considered for treatment under medical supervision (Haseen, et al.,2007). New Mexico’s overdose death rates caused by Heroin are increasing every year and so there is an urgent need to fight Heroin addiction under medical supervision.

House memorial 56 titled ‘Study Heroin Assisted-treatments’ introduced by Deborah Armstrong in a recent state legislative session provided the snapshot of the severity of Heroin abuse and addiction along with the fatalities, which according to National Institute of Drug Abuse were 161 in 2016. It also emphasized on how similar treatments in other parts of the world brought improvements in terms of dealing with the overdose death rates related to Heroin.

Heroin assisted treatments can be a good initiative in New Mexico, following the footsteps of certain European countries along with Canada. Several of these countries launched safe injection sites, where injectable medical grade heroin is provided to those struggling with Heroin addiction. United States does not allow Heroin Assisted Treatment practices within its boundaries, but the current crisis situation in the United States and New Mexico demands different measures. Heroin Assisted Treatments for those patients where other methods of treatment have failed, might prove to be an effective strategy and by considering such measures, New Mexico becoming the first state to implement such practices can set an example for other states to follow in order to curtail heroin overdose deaths.

Wim van den Brink, a professor of psychiatry and addiction at the University of Amsterdam, Netherlands highlighted the results of several studies conducted in conjunction with using heroin as a method of treatment for patients where other methods of treatment has failed. Supervised heroin consumption is considered feasible, safe, and effective option for bringing improvements in physical health, mental status, and social functioning along with reduction in criminal behaviors (Van Brink, et al., 2003). The studies also highlighted the benefits derived from Heroin assisted treatments in terms of reducing stigma associated with heroin as well as being cost effective.

Treating heroin addiction without the stigma can prove to be beneficial for New Mexico in order to deal with the overdose death crisis. In the past, heroin addiction has been stigmatized and tabooed. Embracing medication-assisted treatments recently shows that society is now looking at the problem differently. Addiction is now considered as a medical condition instead of a moral failure (Lopez, 2017). Treating addiction with acceptance in the society, under medical supervision and by providing safe injection sites, state can provide heroin addicted patients with treatment access, that might lead to fewer overdose deaths caused by Heroin in New Mexico.

The state of New Mexico desired the need to study the effectiveness of such heroin assisted treatment centers in the recent state legislative session introduced by Deborah Armstrong. Initiating Heroin-assisted treatments at all state-funded treatment centers (MAT) might prove beneficial to curb the rising overdose deaths in the state as highlighted by a study conducted in Germany. The researchers conducted a 2-year study where 515 participants addicted to Heroin were treated with medical grade heroin. 278 people over the period of 24 months were retained which is 54.8% retention rate. The results of the study suggest that Heroin Assisted treatment were associated with long term improvements in physical as well as mental

health and also lead to reduction of illicit drug use along with higher retention rates ( Bonorden-Kleij, Degkwitz, Dilg, Haasen, Köhler , Passie, Soyka , Tanger & Vogel, 2008). If such treatment measures were adopted in the state, some of the overdose deaths caused by heroin could have been avoided.

There are several limitations that can reduce the effectiveness of Heroin Assisted Treatments (HAT) and might affect the acceptability of the initiative at state level. One limitation is the loss of treatment benefits after the end of treatment. A recent study conducted in 2016 examined the implications on patients who were provided one year of heroin assisted treatment. A follow-up study was conducted three months after the end of treatment to identify whether the benefits have sustained or not. The results of the study suggest that end of HAT lead to increased use of street heroin among patients (Ansseau, Charlier. Deblire, Demaret, Dubois, Lemaitre, Litran, Magoga Quertemont, 2016). This limitation might create hurdle in introducing such measures at the policy level in New Mexico.

Another study conducted in Switzerland by Franziska Güttinger & Patrick Gschwend in 2003 followed up on a six year long Heroin Assisted treatment. Despite some benefits highlighted by the authors, the results of the study “showed an increase in unemployment and reliance on social benefits” (Gschwend & Guttinger, 2003), among those who were treated at the heroin-assisted treatment centers. Looking at it from a policy maker’s perspective, it is important to weigh all the costs and benefits associated with the introduction of HAT in New Mexico.

SWOT analysis below provides a picture of how the implication of Heroin Assisted treatments in New Mexico would benefit the state in order to curtail the issue of Heroin Abuse and Addiction. It highlights the strengths that will be the benefits derived with the introduction along with opportunities which will further support the implication of HAT across New Mexico.

The analysis also provides the snapshot of weaknesses (negative factors that might hinder adaptations of the measure) and threats (external factors that might negatively affect the introduction of such intervention) associated with the introduction of HAT. Investing resources to consider the initiative as a pilot program in Rio Arriba county, where average overdose drug deaths is four times more than the average deaths of New Mexico, might prove beneficial for the state in curtailing the overdose deaths. If the intervention has positive results, it can be expanded across whole state.

<b>Table 5:</b> <b><i>SWOT Analysis: Heroin Assisted Treatment</i></b>	
<b>Analysis Objectives:</b> The objective of this SWOT analysis is to highlight whether the introduction of Heroin Assisted Treatment centers or Safe Injectable Sites across New Mexico is a feasible, effective and cost-effective strategy for reducing drug use and drug-related harm among long-term heroin users in New Mexico for whom other treatment programs have failed.	
<b>Strengths</b>	<b>Weaknesses</b>
Retention Rates in HAT are much higher compare to methadone or other medicated-assisted treatment. Heroin-assisted treatment reduces illicit drug use Heroin-assisted treatment improves health and quality of life Heroin-assisted treatment reduces crime Heroin-assisted treatment is cost effective, in that the cost-savings from the benefits attributable to HAT far outweigh the cost of program operation over the long run Lead to decline in overdose fatalities caused by heroin	A long term study in Switzerland shows HAT leads to increase in unemployment and reliance on social benefits in long run.( Franziska Güttinger & Patrick Gschwend, 2003) Once study suggested the loss of treatment benefits once treatment ends after 12 months Cannot control free heroin-seekers



<p><b>Opportunities</b></p> <p>Heroin-assisted treatment can provide opportunities for other treatments including abstinence</p> <p>Heroin-assisted treatment can reduce the black market for other illicit drugs along with heroin</p> <p>Threat of HIV can be contained with less needle exchange</p> <p>Reduce the stigmatization attached with Heroin and people will consider Heroin addiction as a disease or a medical condition</p> <p>Using other evidence-based techniques like physical therapies, Reiki, Ibogaine etc. can be implemented alongside with HAT</p>	<p><b>Threats</b></p> <p>Changing political dynamics in New Mexico, Upcoming legislators might not approve of the initiative</p> <p>Illicit drug supply will always be a threat, because consumption of Heroin cannot be controlled outside the medically supervised treatment setting</p> <p>Federal government still does not approve of Heroin Assisted treatments, state can face backlash from Feds</p> <p>Prescription opioid abuse leading to heroin will always be a threat, as long as there is Rx abuse people will initiate heroin</p>
<p><b>Analysis</b></p> <p>Heroin crisis in New Mexico is severe and in 2016 alone 161 people lost their lives due to overdose on Heroin which has been on a rise since 2010. With stricter prescription laws in the recent years, inaccessibility to prescribed medications will lead to many people shifting towards illegal street heroin which will eventually lead to higher overdose deaths in the coming years. Many studies highlight the benefits that can be derived with the implication of HAT. To tackle the issue, supervised heroin consumption sites might prove beneficial to avoid future deaths caused by heroin. Looking at the SWOT analysis, it is evident that New Mexico can benefit from having Heroin Assisted Treatment centers across the state since the Strengths and opportunities outweigh the weakness and threats.</p>	

### **Treating Opioid Use Disorder with Medical Cannabis**

Senate memorial 55 and House memorial 67 introduced in the most recent legislative session in 2018 titled ‘Medical Marijuana & Opioid Use Disorder’ have been passed in both houses of the state where the Department of health has been requested to consider opioid use disorder as qualifying condition to access medical cannabis. The department secretary denied the request blaming in on little evidence supporting the positive effects of cannabis on those with the opioid use disorder (Oxford, 2018). In 2017, New Mexico Governor also vetoed a house bill 537 titled ‘Public Peace, Health, Safety & Welfare Medical Marijuana Changes’ which would have

considered opiate use disorder as a qualifying condition, stating that Medical Cannabis board does not have a capacity to enroll large number of qualifying patients to access cannabis.

Despite the measure not approved at the state level, large number of studies highlight the effectiveness of using cannabis in addressing the problem of Opiate Use Disorder and overdose deaths. A study 'Emerging Evidence for Cannabis' Role in Opioid Use Disorder' articulates that opioid withdrawal symptoms can be eased with cannabis, it helps in reducing opioid consumption, reduce cravings, prevent relapse, along with improved treatment retention, and overdose deaths. (Wiese & Wilson-Poe, 2018). States that have legalized both medical and adult use cannabis show a significant reduction opioid consumption along with opioid related overdose deaths. Despite the fact, it is still early to conclude the effects of legalization for adult use since such the interventions are fairly new and the long-term impact is yet to be studied.

California in 1996 approved medical cannabis which lead to significant decline in opioid consumption. Marcus A. Bachhuber, Brendan Saloner, Chinazo O. Cunningham and C L. Barry compared the presence of state medical cannabis laws and Opioid Overdose mortality, the finding of their study suggested states with medical cannabis laws had a 24.8% lower mean annual opioid overdose mortality rate compared with states without medical cannabis laws” (Bachhuber et al., 2014). Mortalities related to opiate use disorder is alarming in New Mexico and measures to promote the use of cannabis in treating opiate use disorder could play a significant role in preventing the deaths.

Ian M. Adams, Anthony P. Reeve, Sarah S. Stith and Jacob M. Vigil conducted a cohort study to highlight the associations between medical cannabis and prescription opioid use among chronic pain patients in New Mexico between 2010 and 2015. The goal of the study was to determine the cessation and reduction of use of prescription pain relievers due to enrollment in

Medical Cannabis Program compared with the other group of similar characteristics but not enrolled on Medical Cannabis Program (MCP). The result of the study after 21-month observation indicates that MCP enrollment was associated with over 80% of reduction in prescription opioid use along with 40% completely gave up opioid use replacing it with cannabis. (Adams, Reeve, Stith & Vigil, 2017). Lack of research on cannabis is mainly associated due to federal restrictions and consideration of cannabis as a controlled substance, despite that this study in New Mexico proves that cannabis can play an important part in tackling the issue.

Cannabis is associated with reducing the harm and risk of overdose caused by Opioid Use Disorder and current evidence along with several states opting to consider OUD as a qualifying condition to enroll for Medical Cannabis suggests that it can be considered as an option. New Jersey added opiate use disorder to the list of qualifying conditions for enrollment in the state's medical cannabis program (Wiese & Wilson-Poe, 2018). State of Pennsylvania also followed New Jersey's footsteps along with New York and Illinois considering the option as well.

Despite several studies stressing on the benefits of Medical Cannabis to treat Opioid Use Disorder, it is imperative to highlight certain limitations that may hinder the policy makers in New Mexico to consider cannabis as a medication to treat opiate use disorder. One limitation is limited long-term evidence proving the effectiveness of cannabis to treat opiate use disorder as emphasized by New Mexico's Department of Health secretary.

Numerous studies focused on the credibility of Cannabis and questions, whether any positive associations exist between cannabis and treatment for Opioid Use Disorder. One study published in the American Journal of Psychiatry depicts that cannabis use increases rather than decreases the risk of developing prescription opioid use disorders (2017). Another recent

publication, in the February 2018 issue of Addictive Behaviors, concludes that “cannabis use strengthens, rather than weakens, the relationships between pain and depression and pain and anxiety” (Barbosa-leiker, Bigand, Cuttler, Gogulski, Oluqoye, Roberts & Wilson, 2018). Most importantly, cannabis is considered by some, ‘A gateway Drug’ indicating, marijuana use potentially leads to the use of more hazardous illegal substances. (DeSimone, p.149, 1998). Despite being labelled as a gateway drug, and recent literature highlighting the benefits derived along with many states considering cannabis as an alternative option opened doors for more research on the matter.

Prescription Opioids and Heroin related fatalities have taken its toll on New Mexican societies. Medical use of Cannabis might prove to be a suitable option for the state to deal with the current epidemic. Policy maker needs to weigh all the costs and benefits associated with allowing the use of Medical Cannabis to treat the condition of Opioid Use Disorder. The SWOT analysis below provides a snapshot of the implications of the initiative, if considered by the policy makers in the state. It is important to emphasize that further research must be conducted to study the benefits of allowing medical cannabis for opioid use disorder along with future consideration of cannabis as part of doctors prescribing practices if proven effective as alternative to Opioids.

<b>Table 6</b> <b>SWOT Analysis: Treating Opioid Use Disorder with Medical Cannabis</b>	
<b>Analysis Objectives:</b> The objective of this SWOT analysis is to highlight the implications of considering Opioid Use Disorder as qualifying condition to enroll in Medical Cannabis Program. It will provide policy makers with a snapshot of benefits derived from such intervention, along with certain negative consequences, which will aid policy makers in making informed decisions.	
<b>Strengths</b>	<b>Weaknesses</b>
<p>Cannabis, as evident is a safe alternative can reduce opioid related Over Dose</p> <p>Cannabis reduces opioid withdrawal symptoms, leading to improved health, social functioning and quality of life</p> <p>States with Medical Cannabis laws have almost 25% lower Opioid related mortality rate</p> <p>Will lead to decrease in Medicare part D, prescription drug cost spending</p> <p>Cannabis use can lead to decline in overdose fatalities caused by Prescription opioids and heroin</p>	<p>Lack of research in the matter of the study mainly due to federal restrictions, one study concludes ‘Cannabis use lead to increase rather than decrease OUD’</p> <p>Cannabis still considered as schedule I controlled substance, and some argue that using cannabis to treat OUD is replacing one addiction with another</p> <p>Frequent use carries risk of addiction along with short-term memory loss</p> <p>Data suggests states with legal cannabis laws have high automobile accidents rates compared to other states</p> <p>Marijuana is considered by some, as a gateway drug for other illicit drugs</p>
<b>Opportunities</b>	<b>Threats</b>
<p>Medical cannabis might benefit rural areas of NM with lack of treatment centers to treat OUD</p> <p>Medical use may reduce illicit marijuana use along with black market for other illicit drugs</p> <p>Dispensary purchases are not covered by health insurance plans, which will lead to less health insurance costs</p> <p>Medical Cannabis use will reduce stigma and will encourage more patients to seek OUD treatments</p> <p>Considering OUD as qualifying condition will open door for future consideration of adult use legalization, that can be a source of revenue booster for state</p>	<p>Changing political dynamics in New Mexico, Upcoming legislators might not approve of the initiative</p> <p>Illicit drug supply will always be a threat, consumption of non-medical cannabis cannot be controlled</p> <p>Federal government still regards cannabis as Schedule I controlled substance, state can face backlash from Federal government</p> <p>Affordability will be a problem since insurers do not cover dispensary purchases</p>
<b>Analysis</b>	
New Mexico was ranked 2 <sup>nd</sup> in the country in 2014 for highest overdose deaths, and opioids were involved in many of those deaths. Several studies highlight the benefits that can be derived with considering OUD as a qualifying condition to enroll in Medical Cannabis program and how it eventually leads to reduction in overdose deaths caused by Opioids. Policy	

makers need to weigh all the benefits and costs associated with the implication of such measure to decide what is best for New Mexicans. Looking at the SWOT analysis, it is imperative that despite having some disadvantages associated with considering such policy, containing overdose deaths should be dealt with the highest priority and enough evidence suggests that Cannabis can play a part in reducing overdose deaths caused by opioids. Implication of this policy would result in reduction in prescription opioids and heroin associated abuse and addiction along with reduction in overdose deaths.

In New Mexico, medical cannabis program participation grows by hundreds of patients every month, and there are currently 58,782 active patients in New Mexico with the highest number of 29504 patients with Post-traumatic stress disorder and second being patients with chronic pain conditions” (NMDOH, 2018). Policy makers in the state need to find ways to accommodate growing number of eligible patients and give significant emphasis on those seeking Cannabis to treat Opioid Use Disorder. This is a matter of utmost concern and state of New Mexico need to consider the option within a regulated system to deal with prescription opioid abuse and heroin crisis leading to large number of overdose deaths.

**Effectiveness of Medical cannabis to treat opiate use disorder can provide opportunity to consider cannabis as part of doctor’s prescribing practices in future.** Last section of the paper highlighted the strengths, weaknesses, opportunities and threats associated with considering medical cannabis to treat the condition of opiate use disorder. If medical cannabis use provides positive results, state of New Mexico can adopt measures to ensure healthcare organizations play their part in addressing the crisis by considering medical cannabis as a replacement for opiates and by creating an environment where cannabis becomes a part of physicians prescribing practices. Looking at the current scenario, around 85% of recent medical school graduates receive no education about cannabis throughout their training, residencies, or fellowships” (Awad, Bierut, Dufault, Evanoff & Quan, 2007). This is mainly due to federal restrictions since cannabis is considered as a schedule, I controlled substance.

In New Mexico currently, Physician referral is required to enroll in Medical Cannabis Program due to certain chronic conditions like cancer. Though patients self-manage the frequency, potency and type of cannabis used. Healthcare providers in New Mexico can adopt measures within the healthcare setting requiring physicians to administer the frequency, potency and type of cannabis used by the patients who have Opioid Use Disorder.

With the growing concern for abuse of overdose caused by prescription pain relievers, researchers at the University of Michigan reported that medical cannabis may be an alternative to more common prescription painkillers for some individuals when national health leaders are asking the medical community to cut back on prescribing opioids such as Vicodin and OxyContin (Steinborn, 2018 p.3). State along with healthcare organizations within the state need to consider alternative measures that would enable hospitals and physicians to dedicate more efforts in training and studying the benefits of medical cannabis. By prescribing cannabis as an alternative to opioids, better fitting the needs of different patients with different medical conditions, physicians can play a part in addressing the problem of opioid use disorder in the state.

### **Conclusion**

The research of this paper highlights the alarming situation related to prescription Opioids and Heroin abuse in New Mexico. The purpose of this paper was to get a deeper understanding of the issue, by providing a historical review of the crisis and by analyzing the policy interventions of the state government. This research establishes the dire situation of drug abuse in the state and how it is affecting the local communities. By delving into the impact of this issue, the paper also highlighted the challenges that the policy makers and people who are trying to resolve this issue are facing. Based on the research, the recommendations provide a

framework for some key interventions that the government and policy makers can take to address the issue.

While this document and the recommendations mentioned can provide a ‘starting point’ to the policy makers, it is important to note that other stakeholders such as big pharmaceutical companies who benefit from the prescription Opioid medication might be a hurdle in bringing about change. Another limitation of this research is the challenge of helping those who are already addicted. New Mexico has scarce resources and budget to deal with the large number of people with Opioid use disorder. At the end of the day, a very extensive and aggressive strategy is required by the government to address the ongoing drug abuse crisis and it should make efforts to bring all stakeholder on board. Only then, the recommendations suggested in this paper and the existing interventions, efforts and policies will be most effective.



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