



The Opioid Crisis in North Carolina: Can the Crisis be Contained?

Senior Project

In partial fulfillment of the requirements for
The Esther G. Maynor Honors College
University of North Carolina at Pembroke

By

Sara C. Baxley
Department of Biology
December 2, 2022

Sara C Baxley

Sara Catherine Baxley
Honors College Scholar

12/08/2022

Date

Corey Rae Pomykacz, Ph.D.

Dr. Corey Pomykacz
Faculty Mentor

12/12/2022

Date

Joshua Kalin Busman, Ph.D.
Senior Project Coordinator

Date

Acknowledgments

I would like to thank Dr. Corey Pomykacz for her willingness to mentor me with this project, the Maynor's Honors College for providing a driving force to pursue a research topic, and for Jordan Sims, Jennifer Baggett, N.P., NEMSIS, and Hoke County EMS for their help in acquiring data for this project.

Abstract

The opioid crisis has affected millions of lives across the United States. North Carolina has also been subject to the destruction that the opioid crisis has reigned on its citizens. With the emergence of the COVID-19 pandemic, a mental health crisis exacerbated the effects of the opioid crisis resulting in rising numbers of fatal and nonfatal overdoses. Through the use of numerous acts and implementing programs, North Carolina has attempted to reduce the effect of the opioid crisis and maintain the health of its citizens. This essay will address the data supported by the CDC while acknowledging common causes of the opioid crisis, treatments, programs established to combat the crisis, and what is being done to contain the crisis.

The Opioid Crisis in North Carolina: Can the Crisis be Contained?

Opioid overdoses, and subsequent deaths, are among the leading causes of death in the United States. Opioids are a type of drug class that consists of highly addictive drugs such as heroin, fentanyl, synthetic fentanyl, morphine, and prescription opioids such as hydrocodone and Percocet. Opioids were initially meant for short-term use in acute pain management, but misuse and over-prescription of opioids can cause dependence, which can eventually lead to overdose and death. Not all overdoses lead to fatalities, but it is entirely plausible for an overdose to cause death. Although North Carolina has initiated many programs and acts to combat the opioid crisis, due to the emergence of COVID-19 in the year 2020, it is hypothesized that there was an increase in the incidence of fatal and nonfatal opioid overdoses between the years 2020 and 2021.

According to the Centers for Disease Control, the opioid crisis began in the early 1990s and can be separated into three distinct waves. The first wave started in the early 1990s with the increase in the prescription of opioid medications such as morphine, codeine, and oxycodone. The second wave took place in the year 2010 when there was an overwhelming increase in the use of heroin. The third wave started in the year 2013 when there was an increase in opioid overdoses attributed to synthetic opioids such as fentanyl and Tramadol (Centers for Disease Control and Prevention, 2022). Opioids serve as opioid-receptor agonists and cause symptoms such as respiratory and central nervous system (CNS) depression, eventually leading to respiratory and cardiac arrest if not properly treated. Emergency medical service providers are trained to assess and treat individuals by reversing these

4 Baxley

symptoms through the use of bag-valve masks, nasopharyngeal airway adjuncts, oropharyngeal airway adjuncts, and the administration of the medication naloxone.

Naloxone, also known by its brand name NARCAN®, is a competitive opioid antagonist. Naloxone competes with opioids at the receptor site and blocks the effects of the opioid on the receptor. Naloxone is fast-acting and can be administered in multiple ways including intranasally, intramuscularly, intravenously, and intraosseously. While naloxone is helpful in the treatment of opioid overdoses, it can cause acute withdrawal symptoms that include body chills, nausea, vomiting, restlessness, weakness, and diarrhea either when given too rapidly or when given to an individual who uses opioids regularly. Due to the frequent administration of naloxone by EMS agencies, EMS data serves as a great resource for documenting overdoses, opioid and nonopioid related. Hoke County EMS, located in Hoke County, North Carolina administered Narcan a total of 225 times during the year 2021. Of the 124 overdoses documented in the year 2021 through primary impression breakdown, 11 were heroin overdoses, 48 were opioid-related, seven were caused by synthetic narcotics, and 58 overdoses were categorized as unspecified. Approximately 47.6% of overdoses were known opioid-related overdoses; due to factors such as patient dishonesty and lack of overdose witnesses, unspecified overdoses could encompass opioid and non-opioid overdoses.

Opioid overdoses are not a new occurrence, but with the emergence of the COVID-19 pandemic in 2020, individuals were expected to stay indoors and isolate for protection from the deadly respiratory virus. Sadly, where physical isolation leads, social isolation typically follows. Individuals who suffer from poor mental

health are at an increased risk of substance abuse; social isolation has been shown to worsen the effects of poor mental health and can cause an increase in the incidence of opioid overdose, fatal and nonfatal. Similarly, patients who suffer from an opioid-use disorder have a higher likelihood of psychological and mental health issues, further exacerbating their opioid use (Henry et al, 2020). In an attempt to battle the opioid crisis while also following strict social distancing guidelines, many developments were made in the field of addiction and mental health services.

Telehealth, healthcare access through telecommunication devices, has become a normal practice and is focused on providing healthcare access to people remotely; this can safeguard against the spread of COVID-19 while also allowing individuals to seek medical treatment from the safety of their own homes (Henry et al, 2020).

Unfortunately, the number of telehealth practitioners has not increased and access to telehealth services is limited in rural areas due to a lack of internet and telephone connection. Further research is being conducted to determine the specific categories of mental health that can affect an individual's likelihood of opioid overdose; these include but are not limited to socioeconomic status, comorbidities, genetic predisposition, and a previous history of substance abuse.

Access to opioids can be both legal and illegal. Opioids are commonly prescribed for pain management by medical professionals. The dispensing of prescription opioids by medical practitioners in the United States reached a peak in 2012 with a total of 255,207,954 opioid prescriptions and has steadily declined, however, dispensing rates can vary across state and local levels. Although the United States has decreased the prescription and dispensing of opioids, some areas

still have high rates of prescription opioid dispensing and continue to suffer through the opioid crisis. Opioids can also be bought and sold on the black market. For example, heroin and illicitly manufactured fentanyl are two common opioids that are used. These drugs are typically distributed illegally, however, there is pure, medically manufactured fentanyl that is used in hospital pain management.

In the year 2020, 38,048 people died from an overdose, with 31,594 people dying from an overdose with at least one opioid drug involved (Centers for Disease Control and Prevention, 2022). 27.9% of overdose deaths in 2020 were attributed to illicitly-manufactured fentanyl. 48.1% of all overdose deaths were attributed to the use of opioids without stimulant use while 34.9% of overdose deaths were attributed to an opioid combined with a stimulant. 70.2% of all overdose deaths reported by the CDC were males, while only 29.8% of overdose deaths were females. White, non-Hispanic individuals have the highest percentage of overdose deaths at 70%, with black, non-Hispanic individuals following at 18.1% (Centers for Disease Control and Prevention, 2022).

North Carolina shows to be an accurate representation of the national data obtained by the CDC. In 2020, 2,957 North Carolinians lost their lives to a fatal overdose. 2,554 deaths were attributed to at least one opioid and 25.7% of all overdose deaths were caused by illicitly-manufactured fentanyl alone. 46.5% of opioid overdose deaths were attributed strictly to opioids while 39.8% of overdose deaths were attributed to the use of an opioid and a stimulant. 16.5% of overdose deaths were attributed to prescription opioid use, 19.1% of deaths were attributed to heroin use, and 73.1% of deaths were attributed to the use of fentanyl (Centers

for Disease Control and Prevention, 2022).

There was a 24% significant increase in the amount of suspected opioid overdoses between January 2019 and January 2020. North Carolina only experienced an 8% increase in suspected opioid overdoses during this time frame. Between January 2020 and January 2021, there was a 31% overall increase in all suspected drug overdoses in the nation, with 36 out of 40 reported states showing an increase in drug overdose rates. North Carolina experienced a significant increase in suspected opioid deaths with a whopping 43% increase. Kentucky, Michigan, Alabama, Vermont, and the District of Columbia were the only areas that surpassed North Carolina in the increase of overall suspected drug overdoses (Centers for Disease Control and Prevention, 2022).

North Carolina, and the United States as a whole, have attempted to combat the opioid crisis by implementing programs and acts to have harsher punishment for drug dealers and to provide training for law enforcement and other public service professionals who encounter individuals who struggle with mental health and substance abuse. In June 2016, North Carolina issued a statewide standing order approving the public distribution of naloxone to untrained individuals due to the high prevalence of opioid overdoses. North Carolina has permitted pharmacies to distribute naloxone to individuals with a high risk of opioid overdose, to close family and friends of individuals at risk of opioid overdose, and to people in the general public who could assist a person in need. North Carolina was the third state to approve a naloxone standing order and more are soon to follow (Syringe and Naloxone Access, n.d.).

North Carolina has also initiated the Strengthen Opioid Misuse Prevention (STOP) Act. The STOP act was put into action in 2017 and puts a limit to the amount of prescription opioid medication that is prescribed to acutely injured or ill patients (with a five to seven-day fill limit), requires a review of a patient's 12-month medical history to determine if there are signs of substance abuse or opioid misuse, and that physician associate (P.A.s) and nurse practitioners (N.P.s) must consult with a supervising physician before prescribing any opioid medications (*Summary of NC's New Opioids law, the STOP Act*, n.d.). North Carolina has also implemented the Heroin and Opioid Prevention and Enforcement (HOPE) Act in 2018 to allow law enforcement officers to quickly access information regarding illegal and legal drug distribution, harsher punishment for healthcare workers who steal prescription medication, ensure that fentanyl is considered under drug-trafficking law, and that funding is provided for addiction services. Due to fentanyl being a relatively new drug to grace the United States, the Synthetic Opioid Control Act (2017) was also implemented to further ensure that dealers in synthetic fentanyl are punished under the full extent of the law (Opioid epidemic with the North Carolina Department of Justice, 2020). Training programs such as the Crisis Intervention Team (CIT) program have been training law enforcement professionals as well as other first responders in the appropriate training regarding individuals suffering from mental health or substance abuse issues. Many EMS agencies are utilizing this program so that crisis de-escalation can be utilized rather than extensive measures such as pharmacological and physical sedation.

The United States, and subsequently North Carolina, continue to suffer from the effects of the opioid crisis, however, the efforts and implementation of programs that focus on the betterment of mental health, harsher punishment of drug trafficking, and the limiting the prescription and dispensing of opioids has benefited the state greatly. The COVID-19 pandemic proved a negative effect on the mental health of the nation and increased the use of opioids when physical and social isolation reigned. Further research is needed to determine other factors that can increase an individual's risk of developing a substance abuse disorder as well as increasing funding for projects that are focused on the improvement of mental health and addiction. The opioid crisis continues, but improvements have been made to help contain it.

References

Centers for Disease Control and Prevention. (2022, November 30). *DOSE dashboard: Nonfatal overdose data*. Centers for Disease Control and Prevention. Retrieved November 30, 2022, from <https://www.cdc.gov/drugoverdose/nonfatal/dashboard/index.html>

Centers for Disease Control and Prevention. (2022, June 27). *SUDORS dashboard: Fatal overdose data*. Centers for Disease Control and Prevention. Retrieved December 1, 2022, from <https://www.cdc.gov/drugoverdose/fatal/dashboard/index.html>

Centers for Disease Control and Prevention. (2022, June 1). *Understanding the opioid overdose epidemic*. Centers for Disease Control and Prevention. Retrieved December 1, 2022, from <https://www.cdc.gov/opioids/basics/epidemic.html>

Henry, B. F., Mandavia, A. D., Paschen-Wolff, M. M., Hunt, T., Humensky, J. L., Wu, E., Pincus, H. A., Nunes, E. V., Levin, F. R., & El-Bassel, N. (2020). Covid-19, mental health, and opioid use disorder: Old and new public health crises intertwine. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12(S1). <https://doi.org/10.1037/tra0000660>

Opioid epidemic with the North Carolina Department of Justice. NCDOJ. (2020, January 8). Retrieved December 1, 2022, from <https://ncdoj.gov/responding-to-crime/opioid-epidemic/>

Summary of NC's New Opioids law, the STOP Act. North Carolina Medical Board. (n.d.). Retrieved December 2, 2022, from <https://www.ncmedboard.org/resources-information/professional-resources/publications/forum-newsletter/notice/new-summary-of-ncs-new-opioids-law-the-stop-act>

Syringe and Naloxone Access. NCDHHS. (n.d.). Retrieved December 1, 2022, from <https://www.ncdhhs.gov/about/departments-initiatives/overdose-epidemic/syringe-and-naloxone-access>