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## Three Waves: The United States Opioid Crisis

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Three Waves: The United States Opioid Crisis

An Honors Thesis

Presented to

The Faculty of the Department of Science, Technology, and Society

Colby College

In partial fulfillment of the requirements for the

Degree of Bachelor of Arts

By

Ryan Santoro

Waterville, Maine

Spring Semester 2022

## Table of Contents

<i>Acknowledgments</i> .....	<b>3</b>
<i>Abstract</i> .....	<b>4</b>
<i>Preface</i> .....	<b>5</b>
<i>Introduction</i> .....	<b>8</b>
<i>Literature Review</i> .....	<b>11</b>
<i>How Addiction Works</i> .....	<b>13</b>
<i>Origins of the Opioid Crisis</i> .....	<b>15</b>
<i>Wave 1: The Marketing of Oxycontin</i> .....	<b>17</b>
<i>Analysis of Poster Advertisement</i> .....	<b>18</b>
<i>Analysis of Video Advertisement</i> .....	<b>20</b>
<i>Economic Impact</i> .....	<b>23</b>
<i>Wave 2: Heroin Abuse</i> .....	<b>24</b>
<i>Wave 3: Synthetic Opioids/Fentanyl</i> .....	<b>25</b>
<i>Underrepresentation of Data</i> .....	<b>27</b>
<i>Effects of the COVID-19 Pandemic</i> .....	<b>28</b>
<i>A Fourth Wave? Opioid Abuse Coupled with Mental Health Struggles</i> .....	<b>30</b>
<i>Case Study: Massachusetts</i> .....	<b>32</b>
<i>Glorification in Pop Culture</i> .....	<b>33</b>
<i>Conclusion</i> .....	<b>34</b>
<i>Works Cited</i> .....	<b>37</b>

## Acknowledgments

First, I would like to thank my thesis advisor, **Professor Ashton Wesner** for her guidance and support throughout the process of research and writing this year. Professor Wesner has made this process enjoyable, providing feedback and help throughout the entire year, all while adapting to her first year at Colby as well. Thank you, Ashton!

Secondly, I want to thank my outside reader **Professor Gail Carlson** for her support throughout the entire writing process. The inspiration for this project came during Professor Carlson's lecture on the opioid crisis in a September class on Global Public Health. Professor Carlson, thank you for all of your help and inspiration throughout this process.

Thank you to all former STS professors, mainly **Lijing Jiang, Jim Fleming and Paul Josephson**. Without your support for the past 3 years, this project would not have been possible. Thank you for giving me a background in Science and Technology studies and I hope you are all enjoying your post-Colby life!

Finally, thank you to **my parents** for supporting me throughout my entire academic career. I would not be in the position I am today without all of your sacrifices.

## Abstract

The past two and a half decades have witnessed widespread suffering, addiction, and death at the hands of the opioid crisis. This paper analyzes the crisis through a series of time periods, broken down into “waves.” Drawing upon primary material in relation to OxyContin advertisements in the 1990’s, this research takes aim at the origin of widespread opioid abuse disorder. By building upon analysis done on the Sackler Family, Purdue Pharma, heroin abuse, fentanyl overdoses, the COVID-19 pandemic and opioids and addiction in modern pop culture, this thesis shows how despite constant change in public policy, the opioid crisis continues to worsen year over year.

## Preface

When I was nine years old, I was diagnosed with third degree heart block. I will not delve into the specifics of all that has come with that, but the gist of it is that since then I have had three heart surgeries to both implant a pacemaker to return my heartbeat to normal, as well as remove harmful tissue from inside my heart walls. Two of the three surgeries I had took place before my eighteenth birthday, so my parents were “calling the shots” when it came to medical decisions for myself. I always assumed they were always following along with what the doctors suggested, and they were for nearly everything. A few months after my eighteenth birthday my doctor suggested I have a cardiac ablation to remove harmful electrical tissue in my heart which could potentially send me into cardiac arrest while exercising. This was an incredibly simple procedure, he explained, and I would be out of the hospital just a few hours after the surgery began. Being eighteen, my parents no longer had any say in terms of medical decisions. Of course, I could consult with them, but official decisions had to come directly from me. I have a vivid memory sitting in the hospital bed while my surgeon had me sign some paperwork as he went over potential risks and procedure following the surgery. He said something along the lines of, “you don’t need to worry about any of this, these complications only happen in old people.” The final piece of paperwork I needed to sign was in order to get prescribed pain killers for a few days after surgery. Dr. Alexander explained that they would be making six small incisions in my femoral artery which would be rather painful for a couple days and these pills would help alleviate the pain. Awesome, pain free with no risks! Is what I was thinking at the time. A few minutes later I was knocked out and a few hours after that I was back in my bed back home- the surgery was successful. After a short nap I remember being in a lot of pain and asking my dad to grab me my new prescription, he returned with Advil. He sat down and explained that for all my other surgeries he never let the doctors give me any form of painkiller, he was worried about

addiction, which has run in my family for a few generations. The interaction wasn't all that dramatic, I just took the Advil, and it did the trick, I was still a bit sore but no longer in any pain. My six-day oxycodone prescription simply sat in our medicine cabinet, before eventually being thrown away. This was my first interaction with opioids.

Two years after that, on thanksgiving, was my next interaction. My grandmother is nearly 80 years old and can't weigh more than 75 pounds. I say this because, unbeknown to any of my aunts and uncles at the time, she had been prescribed 30 days' worth of oxycontin for "stomach pain." Apparently, her prescription had run out the day before and while eating thanksgiving dinner, she started experiencing extreme withdrawals from the medicine. She had become physically dependent on it after less than a month of prescription. A few questions arose from the family after this happened. Who the (explicative) prescribed her oxy? Wouldn't Advil have worked fine? Why didn't we know about this? Each of these three questions highlight broader issues going on throughout all of America right now, as well as offer insight into why I chose this project when there were so many other options. Although I never really realized it, I, like many others throughout the country, have a personal stake in this matter. My grandmothers story offers a small snapshot of the vicious cycle that plagues hundreds of thousands of people nationwide. A relatively small procedure is needed, and painkillers are prescribed afterwards. A level of dependency is created during this time, resulting in a craving once the prescription runs out. Oftentimes, doctors are willing to refill it, but when this stops, the only option is to turn to illicit drug trade in order to satisfy this craving. Unfortunately, for many, this will turn into a lifetime of addiction and oftentimes lead to a fatal overdose. The contents of this research will both explore and analyze this cycle and offer insight as to why this is a problem today, and hopefully, how it can be stopped.

Addiction takes many different forms. It does not discriminate, and it does not take long to happen. Some addiction can be beneficial: addiction to exercise and addiction to work exists and can play a massively beneficial role in the lives of many, but for more than 20 million Americans, addiction has become severely detrimental to their health and wellbeing. These addictions range from something as simple as caffeine, to far more potent and dangerous drugs such as heroin and fentanyl. Many scholars argue that opioid addiction is one of the leading public health crises in the United States today, and of this research examines the history behind this crisis to help understand why we are where we are today.

## Introduction

Since the mid 1990's, opioid overdose and addiction rates have risen nearly every year in the United States.<sup>1</sup> Poor drug planning, illegal drug trade, government policies and pharmaceutical companies are just a few of the major actors and causes for this crisis. Without major and swift policy and prevention change, this crisis will continue to be a prevalent issue in American society for years to come.

The opioid crisis can be broken down into three main “waves”: prescription opioids (painkillers), heroin, and synthetic opioids.<sup>2</sup> In 1995, the FDA approved one of the more well-known opioids for public release, OxyContin.<sup>3</sup> OxyContin was marketed much differently than previous prescription painkillers, such as Vicodin and Morphine, with the main point of emphasis being that it was not as addictive as alternative prescription opioids. This, of course, was not the case. By the mid 2000's, thousands of Americans had developed a severe addiction to these opioid based painkillers, and by 2004, Oxycontin was the leading drug of abuse in the United States, making doctors far more cautious in their prescription and refill of the drug.<sup>4</sup> This directly led to the second wave of the crisis, heroin abuse. The lowering of prescription and refill rates led to many people turning to “street drugs” to satisfy their addictive cravings. Many were able to purchase illegally traded OxyContin, but for others they were faced with a choice: try and endure extreme withdrawals or satisfy their craving with heroin. From 2010-2012 the leading

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<sup>1</sup> “Products - Vital Statistics Rapid Release - Provisional Drug Overdose Data,” April 5, 2022, <https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>.

<sup>2</sup> Daniel Ciccarone, “The Triple Wave Epidemic: Supply and Demand Drivers of the US Opioid Overdose Crisis,” *The International Journal on Drug Policy* 71 (September 2019): 183–88, <https://doi.org/10.1016/j.drugpo.2019.01.010>.

<sup>3</sup> “Background - OxyContin Diversion and Abuse,” accessed April 25, 2022, <https://www.justice.gov/archive/ndic/pubs/651/backgrnd.htm>.

<sup>4</sup> Art Van Zee, “The Promotion and Marketing of OxyContin: Commercial Triumph, Public Health Tragedy,” *American Journal of Public Health* 99, no. 2 (February 2009): 221–27, <https://doi.org/10.2105/AJPH.2007.131714>.

cause of overdose death in the United States was due to heroin abuse.<sup>5</sup> By 2012 a new form of opioid became prevalent nationwide: synthetic opioids. Synthetic opioids refer to illegally manufactured painkillers, the most common of which being fentanyl.<sup>6</sup> Fentanyl is more than one hundred times more potent of a painkiller than Oxycontin, meaning even the smallest dose of it can result in an overdose.<sup>7</sup> Although many people do willingly take fentanyl, the rise in fentanyl related overdoses is mainly attributed to other drugs being “laced” with doses of fentanyl.<sup>8</sup>

There are many complexities that lie within these three waves, including marketing tactics, overdose data collection and analysis and broader public health concerns. Over the past fifty years, federal policy has played a major role in drug addiction, and how it is handled by law enforcement. In 1970, 37<sup>th</sup> President of the United States Richard Nixon declared a so called “War on drugs,” a war that has now lasted for over fifty years.<sup>9</sup> Over the course of that time, federal policies have focused their efforts on punishing people with addiction, specifically in lower-income areas of the nation. Places with the highest opioid addiction rates, such as North and South Dakota as well as the Carolina’s, also have some of the strictest drug laws in America.<sup>10</sup> The war on drugs has not done much to mitigate drug use in the US, but rather the opposite. Drug users are oftentimes arrested for possession or consumption of illegal drugs, before awaiting trial and a potential prison sentence. These incredibly strict drug laws and

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<sup>5</sup> “Opioid Data Analysis and Resources | CDC’s Response to the Opioid Overdose Epidemic | CDC,” October 15, 2021, <https://www.cdc.gov/opioids/data/analysis-resources.html>.

<sup>6</sup> Christine L. Mattson et al., “Trends and Geographic Patterns in Drug and Synthetic Opioid Overdose Deaths — United States, 2013–2019,” *MMWR. Morbidity and Mortality Weekly Report* 70, no. 6 (February 12, 2021): 202–7, <https://doi.org/10.15585/mmwr.mm7006a4>.

<sup>7</sup> “Fentanyl,” accessed May 10, 2022, <https://www.dea.gov/factsheets/fentanyl>.

<sup>8</sup> Michelle L. Nolan et al., “Increased Presence of Fentanyl in Cocaine-Involved Fatal Overdoses: Implications for Prevention,” *Journal of Urban Health : Bulletin of the New York Academy of Medicine* 96, no. 1 (February 2019): 49–54, <https://doi.org/10.1007/s11524-018-00343-z>.

<sup>9</sup> Sherrod D Hollingshed, “The Drug War in America: How Much Damage Has It Done,” n.d., 37.

<sup>10</sup> National Institute on Drug Abuse, “Opioid Summaries by State,” National Institute on Drug Abuse, April 16, 2020, <https://nida.nih.gov/drug-topics/opioids/opioid-summaries-by-state>.

policies lead to a vicious cycle of addiction and punishment and offer little way for those battling with addiction to get the help they need.

Perhaps the most important part of understanding this issue and how it can be managed in the future is to understand that addiction is a disease, but oftentimes it feels like public policy fails to acknowledge that this is the case. More than ten million people ages 12 or older abused opioids in 2019.<sup>11</sup> Some can mask their struggles and lead a relatively normal life, but for far too many people who battle with addiction led to loss of their job, friends, and family- entire lives can unravel in the blink of an eye. Very few people choose to be in this position, addiction is a disease that requires treatment and care, and the cycle of punishment has not gotten us anywhere.

In this thesis I examine the history of the opioid crisis, carefully walking through each of the three waves to understand why despite overwhelming recognition that opioid addiction is a massive issue in this country, we have made little progress in reducing national overdose rates. I discuss and investigate some of the major actors in the crisis. Recently, Federal Judge Robert Drain reached a bankruptcy settlement with who many see to be the primary actor in the opioid crisis: the Sackler Family.<sup>12</sup> The family will pay upwards of ten billion dollars which will directly go towards treatment and recovery centers, but also frees the family of any legal wrongdoing in terms of their part in the crisis.<sup>13</sup> The Sackler's directly profited off the suffering of millions, and despite the result of the trial, maintain no wrongdoing for their part in the crisis.

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<sup>11</sup> Digital Communications Division (DCD), "Opioid Crisis Statistics," Text, HHS.gov (<https://plus.google.com/+HHS>, May 8, 2018), <https://www.hhs.gov/opioids/about-the-epidemic/opioid-crisis-statistics/index.html>.

<sup>12</sup> "Justice Department Announces Global Resolution of Criminal and Civil Investigations with Opioid Manufacturer Purdue Pharma and Civil Settlement with Members of the Sackler Family," October 21, 2020, <https://www.justice.gov/opa/pr/justice-department-announces-global-resolution-criminal-and-civil-investigations-opioid>.

<sup>13</sup> Jan Hoffman, "Sacklers and Purdue Pharma Reach New Deal With States Over Opioids," *The New York Times*, March 3, 2022, sec. Health, <https://www.nytimes.com/2022/03/03/health/sacklers-purdue-oxycotin-settlement.html>.

Although The Sackler Family is perhaps the biggest player in the opioid crisis, they are not the only group of people that profited off the suffering of others. The thesis will also explain why while ten billion dollars will help create many treatment centers, it hardly accounts for the physical, emotional and political damages that these corporations created.

First, I will offer an overview of how the crisis started by explaining how, scientifically, opioids are created and why they are so addictive. This portion of research will go through a timeline of the crisis beginning with the creation of OxyContin in 1995 and ultimately leading to the recent impacts of the Covid-19 pandemic. Then, I will examine major peer reviewed literature surrounding the crisis, including an analysis of the false advertisement of OxyContin in the 1990's, the rise of fentanyl in the United States, the effects of the Covid-19 pandemic and the romanticization of addiction in modern pop culture. Then I analyze a specific case study in my hometown of Boston, Massachusetts. On a national level there are too many factors to include in one piece of research so instead I will analyze one specific area and explain why opioid addiction is so prevalent, what is being done to combat widespread addiction and what future plans are for mitigating the crisis in Massachusetts. Finally, I will offer my opinion on how we can move forward in a productive manner and begin to decrease both the addiction rate in the US and in turn decrease the overdose rate.

## Literature Review

The literature surrounding this topic centers itself on the basis of science and technology studies. Much of what is used to research the opioid crisis is reliant on national datasets released by various health organizations like the Center for Disease Control (CDC). To identify any of the issues facing the country, public health researchers require this data be accurate on both a national and local level. Conveniently, the CDC releases available data on their website at the

beginning of each month, providing scholars the opportunity to utilize up-to-date information regarding prescription rates, abuse rates and overdose rates. The data collection itself is both a scientific and technological process which requires the CDC to accurately obtain and distribute the information they receive for productive research and analysis to be done on the topic.

Similarly, the analysis itself is both a technological and scientific process. Studies like Art Van Zee's *The Promotion and Marketing of OxyContin* demonstrate how society was influenced by Purdue Pharma sales representatives' utilization of misleading advertisements. The technology utilized by these representatives included the misrepresentation of scientific data, followed using technology to spread this misinformation to doctors with a higher likelihood of prescribing OxyContin to patients.<sup>14</sup> The piece directly exemplifies how science and technology directly impacted the origins of this crisis.

Other literature, such as *The Neurobiology of Opioid Dependence*, by Thomas Kosten and Tony George provide insight into the deeply scientific nature of how one becomes dependent on opioids and how the brain changes after sustained opioid abuse.<sup>15</sup> George and Kosten explain that while the neurological process is nearly the same for everyone suffering from addiction, both individual and environmental factors influence each individual person's probability to become dependent or addicted to opioids. Such literature helps us to recognize that people with opioid use disorder are not "bad," in nature, but rather have an illness that is deeply rooted in a biological basis.<sup>16</sup>

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<sup>14</sup> Art Van Zee, "The Promotion and Marketing of OxyContin: Commercial Triumph, Public Health Tragedy," *American Journal of Public Health* 99, no. 2 (February 2009): 221–27, <https://doi.org/10.2105/AJPH.2007.131714>.

<sup>15</sup> Thomas Kosten and Tony George, "The Neurobiology of Opioid Dependence: Implications for Treatment," *Science & Practice Perspectives* 1, no. 1 (July 2002): 13–20, <https://doi.org/10.1151/spp021113>.

<sup>16</sup> Kosten and George.

## How Addiction Works

First and foremost, it is necessary to understand what an opioid is, the science behind its addictive properties and list a few examples of what opioids are. From a medical context, opioids are classified as what many know to be pain killers. This includes Vicodin, OxyContin, Percocet, Morphine, Codeine and Fentanyl.<sup>17</sup> Each of these are given by prescription from one's physician. Some of the main reasons to be prescribed opioids are for chronic pain such as arthritis and back pain. They are also prescribed for pain relief following a surgical procedure or a broken bone. The other main group that may be given an opioid prescription are those undergoing chemotherapy for cancer.<sup>18</sup> Anyone prescribed opioids of any sort are at a massive risk to develop an addiction to them.<sup>19</sup> The American Society of Addiction Medicine defines addiction as, "A treatable, chronic medical issue involving complex interactions among brain circuits, genetics, the environment, and an individual's life experiences. People with addiction use substances or engage in behaviors that become compulsive and often continue despite harmful consequences."<sup>20</sup> Depending on the length of prescription, type of opioid, and previous life experiences, some people may be at a greater risk to develop an addiction than others.

The process of becoming addicted is quite simple. Opioids release endorphins into the brain upon consumption. These endorphins are the "feel good" neurotransmitters inside the brain. When someone takes an opioid a massive release of these endorphins results in a short-term feeling of euphoria.<sup>21</sup> After the dose wears off many people feel a sense of short-term

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<sup>17</sup> "Opioid Basics | CDC's Response to the Opioid Overdose Epidemic | CDC," March 17, 2022, <https://www.cdc.gov/opioids/basics/index.html>.

<sup>18</sup> "20151 Prescription Opioids," CAMH, accessed April 25, 2022, <https://www.camh.ca/en/health-info/mental-illness-and-addiction-index/prescription-opioids>.

<sup>19</sup> Van Zee, "The Promotion and Marketing of OxyContin."

<sup>20</sup> "New ASAM Definition of Addiction | The Academy," accessed May 10, 2022, <https://integrationacademy.ahrq.gov/news-and-resources/news/new-asam-definition-addiction>.

<sup>21</sup> Kosten and George, "The Neurobiology of Opioid Dependence."

depression, and a desire to get the euphoric feeling back.<sup>22</sup> When taking opioids for an extended period adults will release less endorphins into the brain. This is called building a tolerance to the drug. The many reasons opioid addiction is so common is because this oftentimes results in patients wanting an increase in their dosage to counteract their tolerance. Fortunately, physicians are incredibly aware of the addictive properties and are oftentimes reluctant to increase dosage for patients. Unfortunately, this leads to other issues that will be discussed later in this analysis, such as heroin use. Once someone's body has become physically dependent on opioids, a sudden stop in consumption will result in severe withdrawal symptoms. Withdrawals can be incredibly painful and will make the pain that the opioids were originally being taken for far worse. Some symptoms include mood swings, extreme pain, sweatiness, nausea, and depression, among many other things.<sup>23</sup> The CDC recommends to never abruptly stop taking opioids, but rather consult with your doctor about a plan to taper off your prescription.<sup>24</sup>

Oftentimes, an opioid addiction starts with a prescription from a doctor and turns into purchasing of these pills from illegal sources once a tolerance is built.<sup>25</sup> As mentioned before, physicians are very hesitant to increase dosage for these drugs due to their addictive nature. Unfortunately, this leads many people to turn to illegal drug trade to satisfy the newfound addiction. The illegal drug trade is an incredibly unregulated market and accounts for most of the deaths by overdose in the United States.<sup>26</sup> The main player in this vicious cycle is fentanyl. Fentanyl was originally created for cancer patients undergoing chemotherapy to deal with some

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<sup>22</sup> Thomas Kosten and Tony George, "The Neurobiology of Opioid Dependence: Implications for Treatment," *Science & Practice Perspectives* 1, no. 1 (July 2002): 13–20, <https://doi.org/10.1151/spp021113>.

<sup>23</sup> "Pocket Guide: Tapering Opioids for Chronic Pain," n.d., 4.

<sup>24</sup> "Pocket Guide: Tapering Opioids for Chronic Pain," n.d., 4.

<sup>25</sup> Johan Kakko et al., "Craving in Opioid Use Disorder: From Neurobiology to Clinical Practice," *Frontiers in Psychiatry* 10 (2019), <https://www.frontiersin.org/article/10.3389/fpsy.2019.00592>.

<sup>26</sup> Holly Hedegaard et al., "Drug Overdose Deaths in the United States, 1999–2020" (National Center for Health Statistics (U.S.), December 30, 2021), <https://doi.org/10.15620/cdc:112340>.

of the pain caused by cancer treatment. It is about 80-100 times stronger than the next most powerful opioid, morphine.<sup>27</sup> It is because of this that even the smallest dose can lead to an overdose, and often people don't know there is fentanyl in the drug they are taking. Fentanyl was originally introduced into street drugs to "strengthen" a dose of heroin, cocaine, or methamphetamine. Due to its incredibly euphoric effect, any consumption of fentanyl can quickly lead to an opioid addiction, if it doesn't kill you upon the first dose.<sup>28</sup> Fentanyl created by pharmaceutical companies for advanced cancer pain is not the issue, though. It is illegally manufactured batches that are mixed with other drugs that have been the major subject in this crisis.

## Origins of the Opioid Crisis

Medical researchers oftentimes point to the late 1990's as the original root of the opioid crisis in the United States. Starting in the 90's medical providers began to ramp up how often they prescribed painkillers to patients. Between 1990 and 2000, the prescription of long-acting opioids increased by nearly 18 times.<sup>29</sup> Much of that statistic can be attributed to the creation of oxycontin in 1995, which was marketed as less addictive than previous opioids like Vicodin and Morphine.<sup>30</sup> At the time, this increase was not all that worrisome to doctors. Considering that opioid addiction had not been a widespread issue in America before this, the rate at which these drugs were being prescribed had a minimal immediate impact on overdose rates.<sup>31</sup> The

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<sup>27</sup> "Fentanyl Facts," accessed April 25, 2022, <https://www.cdc.gov/stopoverdose/fentanyl/index.html>.

<sup>28</sup> <https://plus.google.com/+NIDANIH>, "Research on the Use and Misuse of Fentanyl and Other Synthetic Opioids," June 30, 2017, <https://archives.drugabuse.gov/testimonies/2017/research-use-misuse-fentanyl-other-synthetic-opioids>.

<sup>29</sup> Emily A. Karanges et al., "Twenty-Five Years of Prescription Opioid Use in Australia: A Whole-of-Population Analysis Using Pharmaceutical Claims: Prescription Opioid Utilization in Australia," *British Journal of Clinical Pharmacology* 82, no. 1 (July 2016): 255–67, <https://doi.org/10.1111/bcp.12937>.

<sup>30</sup> Van Zee, "The Promotion and Marketing of OxyContin."

<sup>31</sup> "Opioid Data Analysis and Resources | CDC's Response to the Opioid Overdose Epidemic | CDC."

unfortunate reality of this situation is that it didn't become a prominent issue until people started dying at alarming rates in the 2000's. Nonetheless, many statistical analyses attribute the current issue to this spike in prescription rates in the 1990's.

An increase in prescriptions is not solely the fault of medical professionals. When drugs like oxycontin are created, pharmaceutical companies must go through a variety of checkpoints with the Food and Drug Administration (FDA) to get the drug approved. First, the concept of the drug is created or discovered, where preliminary research takes place. For the most part, this takes place in a lab, where scientists try and create the perfect "concoction" in order to begin testing its useability. Once the drug is created, it is tested on animals to ensure that it works and is safe. If this is successful, companies move onto human trials before the drug hits the open market. By the time human trials are complete, FDA scientists review the research and help create a label for how to use the drug.<sup>32</sup> Finally, the FDA asks one major question: do the benefits outweigh the potential risks? This is a small, yet incredibly important part of the drug approval process. If the FDA approves a drug, this does not mean that it can be taken safely with zero repercussions, but rather means they answered yes to that question: despite all the risks, this drug will do more good than harm.<sup>33</sup> Upon FDA approval, prescription pharmaceuticals can be marketed to hospitals before ultimately being prescribed to patients. In the case of Oxycontin, the drug passed the FDA approval process and was swiftly marketed to hospitals nationwide. Manufacturers reassured the medical community that patients would not develop a dependency to these drugs.

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<sup>32</sup> "FDA Approval - Process of Approving Drugs & Medical Devices," Drugwatch.com, accessed April 25, 2022, <https://www.drugwatch.com/fda/approval-process/>.

<sup>33</sup> "FDA Approval - Process of Approving Drugs & Medical Devices."

## Wave 1: The Marketing of Oxycontin

The opioid crisis originally began when pharmaceutical companies began aggressively advertising and marketing the latest prescription painkiller to hit the market in 1995, OxyContin. Opioid based painkillers have been used in American medicine as far back as the Civil War, when many soldiers became addicted to morphine.<sup>34</sup> Painkillers are a useful and necessary tool in medicine, but the major drawback was that they came with a high risk of addiction and abuse. Pharmaceutical companies looked for an alternative which would be marketed as less addictive than opiates of the past- seemingly creating a new era in medicine in which prescription painkillers were not as addictive.<sup>35</sup>

The main advertiser of OxyContin was Purdue Pharma, owned by the now infamous Sackler family.<sup>36</sup> After receiving FDA approval, executives at Purdue began training sales representatives on how to market their new drug. Between 1996 and 2001, Purdue held more than 40 pain management and conferences throughout Florida, California, and Arizona.<sup>37</sup> The purpose of these conferences was to provide an all-expenses paid trip for more than 5,000 nurses and physicians where Purdue sales representatives would “pitch” Oxycontin as the next great option for pain relief. The invited nurses and doctors were not chosen at random, pharmaceutical companies have access to prescriber profiles, which can help them identify which physicians tend to prescribe certain drugs at higher rates than others. Purdue specifically targeted doctors

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<sup>34</sup> Melissa Grafe, “The ‘Great Risk’ of ‘Opium Eating’: How Civil War-Era Doctors Reacted to Prescription Opioid Addiction,” Text, Harvey Cushing/John Hay Whitney Medical Library, December 1, 2020, <https://library.medicine.yale.edu/blog/great-risk-opium-eating-how-civil-war-era-doctors-reacted-prescription-opioid-addiction>.

<sup>35</sup> Van Zee, “The Promotion and Marketing of OxyContin.”

<sup>36</sup> “Justice Department Announces Global Resolution of Criminal and Civil Investigations with Opioid Manufacturer Purdue Pharma and Civil Settlement with Members of the Sackler Family.”

<sup>37</sup> Van Zee, “The Promotion and Marketing of OxyContin.”

whose clinics contained high rates of chronic pain patients, therefore increasing the likelihood that OxyContin would be prescribed more often.<sup>38</sup>

Purdue's marketing also relied on a bonus system put in place for their sales representatives. Representatives would earn an annual salary of \$55,000, but could earn an annual bonus of up to \$240,000 depending on how much OxyContin they were able to sell. In 2001, annual bonus compensation averaged \$71,500 for more than 600 sales representatives.<sup>39</sup> The marketing campaign neglected many of the risks that came with OxyContin prescription. By specifically targeting offices where chronic pain rates were high, Purdue maximized the number of prescriptions sold and therefore generated as much profit for themselves as possible. This marketing resulted in a 10x increase in prescriptions between 1996 (670,000) and 2002 (6.2 million).<sup>40</sup>

### Analysis of Poster Advertisement

The marketing of OxyContin, as shown in a poster below, contains two sets of images, one in black and white depicting someone with back and neck pain, aside a much larger image of someone working out, filled with bright colors and saying, "Take the next step in pain relief."<sup>41</sup> While yes, marketing campaigns are supposed to paint any drug in a positive light, knowing the damage that OxyContin caused to millions brings into question how such marketing tactics were allowed. A 2009 study, conducted by Art Van Zee, found that upon release of similar advertisements, OxyContin sales grew from \$48 million in 1996, to \$1.1 billion by 2001.<sup>42</sup> It is

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<sup>38</sup> Chris Adams, "Painkiller's Sales Far Exceeded Levels Anticipated by Maker," WSJ, accessed May 10, 2022, <https://www.wsj.com/articles/SB1021494490171464720>.

<sup>39</sup> United States General Accounting Office, *Prescription Drugs OxyContin Abuse and Diversion and Efforts to Address the Problem : Report to Congressional Requesters*. (DIANE Publishing, 2003).

<sup>40</sup> Office.

<sup>41</sup> "The Four-Sentence Letter Behind the Rise of Oxycontin | Center of Alcohol & Substance Use Studies," accessed April 25, 2022, <https://alcoholstudies.rutgers.edu/the-four-sentence-letter-behind-the-rise-of-oxycontin/>.

<sup>42</sup> Van Zee, "The Promotion and Marketing of OxyContin."

quite clear that the advertisements worked from the view of Purdue Pharma, but the aftereffects led to no change in policy from the FDA. The FDA has always held the stance that companies should be allowed to market any drug they make to, “Create more educated consumers who are aware of the choices available.”<sup>43</sup> Advertisements like the one shown do nearly the exact opposite. Even though the fine print displays some of the dangerous side effects, most of the advertisement markets OxyContin as a safe alternative to acetaminophen (Tylenol) which will allow users to live a healthy and active lifestyle.

When you know NSAIDs or acetaminophen will not be enough ...

**OxyContin<sup>®</sup> q12h**  
Controlled release oxycodone tablets

- Rapid onset of analgesia within 46 minutes<sup>1,2</sup>
- Full 12 hours of pain relief<sup>1,2</sup>
- No risk of acetaminophen or ASA toxicity<sup>1,2,3</sup>

World Health Organization Pain Ladder (Adapted)<sup>1,2</sup>

Increasing pain

**Step 1**  
• ASA  
• Acetaminophen  
• NSAIDs

**Step 2**  
• Oxycodone  
• Codeine

**Step 3**  
• Oxycodone  
• Buprenorphine  
• Morphine

**The Only Step 2 and Step 3 q12h Analgesic**

**OxyContin<sup>®</sup> q12h** 10 mg, 20 mg, 40 mg, 80 mg  
Small, colour-coded tablets

**One to Start and Stay With...  
Easy to Dose, Easy to Titrate**

For the relief of moderate to severe pain requiring the prolonged use of an opioid. Side effects are similar to other opioid analgesics; the most frequently observed are constipation, nausea and somnolence. Sleepiness may be impaired by alcohol effects if they occur. Please refer to prescribing information. Warning: Opioid analgesics should be prescribed and handled with the degree of caution appropriate to the use of a drug with abuse potential. Drug abuse is not a problem in patients with pain for whom the opioid is appropriately indicated. <sup>1,2,3,4,5</sup>

**Purdue Pharma**  
Purdue Pharma  
Purdue, Purdue Pharma, and the Purdue Pharma logo are trademarks of Purdue Pharma. © 2012

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<sup>43</sup> Brian Engle, “The Truth Behind Drug Commercials | Health Policy Musings,” accessed April 25, 2022, <https://sites.tufts.edu/cmhp357/2017/04/09/the-truth-behind-drug-commercials/>.

<sup>44</sup> “The Four-Sentence Letter Behind the Rise of Oxycontin | Center of Alcohol & Substance Use Studies.”

The bright colors of this poster play into what Purdue was trying to market, specifically involving the brightly colored yellow on the entire poster. It attempts to draw you into the graphics while maintaining focus on all the benefits listed about OxyContin. Nearly all the posters I have come across are colored with this same shade of yellow. The shade itself is very welcoming in nature and comes with a sense of trust and security.<sup>45</sup> Surely, the message resonated with many people dealing with chronic pain- wouldn't anybody want to be the active, healthy person on the left and stop being the constantly injured and sore person on the right? If the goal was to sell as many prescriptions as possible, Purdue certainly created a strong case for why people should switch to Oxycontin, with the help of this graphic.

### Analysis of Video Advertisement

Posters weren't the only way Purdue advertised their new drug, though. Much like we see commercials for drugs such as Claritin and Cialis, Purdue also heavily marketed Oxycontin through television commercials throughout the 1990's. The posters were usually put up in doctors' offices, targeting an audience already in a sphere where the drug could be prescribed whereas the commercials were broadcasted nationally, so that anyone with a television would be able to see.<sup>46</sup> The commercials mainly consisted of an executive at Purdue Pharma talking directly into the camera while citing misleading statistics to benefit the sale of OxyContin. A transcript and still from the commercial are provided below.

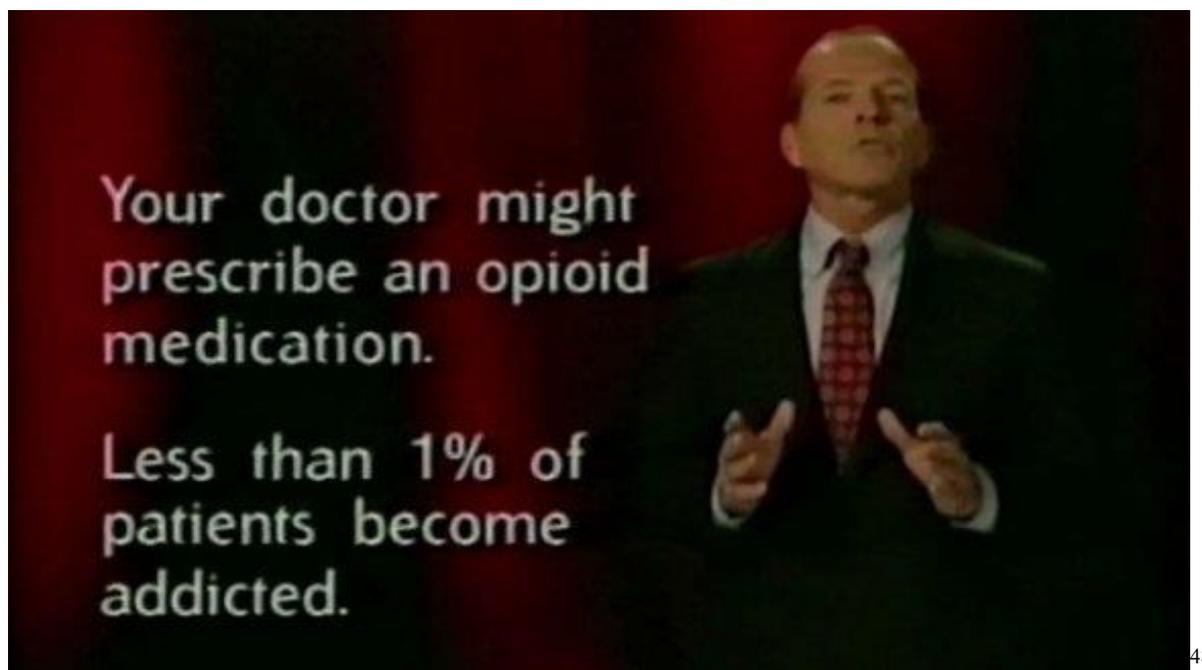
“Once you've found the right doctor, and have told him or her about your pain, don't be afraid to take what they give you. Often, it will be an opioid medication. Some patients may be afraid of taking opioids because they are perceived as too strong or addictive. But that is far from actual

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<sup>45</sup> Andrew J. Elliot, “Color and Psychological Functioning: A Review of Theoretical and Empirical Work,” *Frontiers in Psychology* 6 (April 2, 2015): 368, <https://doi.org/10.3389/fpsyg.2015.00368>.

<sup>46</sup> Van Zee, “The Promotion and Marketing of OxyContin.”

fact. Less than 1% of patients taking opioids actually become addicted. And any drowsiness that might occur when you start to take the medication will soon wear off in most patients.”<sup>47</sup>



The statistic presented in the still from this advertisement is not false, but may be misleading to viewers because its context is not explained: The “less than 1%” that the man refers to is in relation to patients undergoing care while hospitalized, an incredibly different environment than those who would be self-administering these drugs.<sup>49</sup> Numerous statistical studies have disproven the notion that “less than 1% of patients become addicted,” including a 2015 study which concluded that the actual number is somewhere between 8 and 12%, and the rate of opioid prescription misuse is likely around 30%.<sup>50</sup> With millions of Americans dealing with chronic pain, Purdue marketed OxyContin as a new alternative painkiller that was promised

<sup>47</sup> GoLocal LIVE, *1998 Purdue Pharma Marketing Video*, 2019, <https://www.youtube.com/watch?v=LaxIJXpwkzs>.

<sup>48</sup> “The Four-Sentence Letter Behind the Rise of Oxycontin | Center of Alcohol & Substance Use Studies.”

<sup>49</sup> “The Four-Sentence Letter Behind the Rise of Oxycontin | Center of Alcohol & Substance Use Studies.”

<sup>50</sup> Kevin E. Vowles et al., “Rates of Opioid Misuse, Abuse, and Addiction in Chronic Pain: A Systematic Review and Data Synthesis,” *Pain* 156, no. 4 (April 2015): 569–76, <https://doi.org/10.1097/01.j.pain.0000460357.01998.f1>.

to have minimal addictive qualities and provide the same, if not better, pain relief as compared to other prescription painkillers. The commercial seeks to be so memorable, that the average viewer would then ask their doctor for a prescription, which would be readily supplied in many cases. Since the statistics listed are not inherently false, Purdue was able to exploit a flaw in FDA marketing regulations. Everything the man says *is* true but lacks enough specificity for potential patients to understand the risks associated with OxyContin prescription. FDA regulations don't require companies to include all the minute details about their drugs, but rather whatever information they do choose to present, must be true.<sup>51</sup> In this commercial Purdue exploited that requirement to mislead the public about the potential dangers of opioid use.

The manufacturing, marketing, and distribution of Oxycontin by Purdue Pharma and the Sackler family *is* the origin of the opioid crisis in the United States. The major issue with their marketing is the unwillingness to adequately explain the dangers of opioid use. The facts at hand are that one, OxyContin is no more helpful in terms of pain relief when compared to other prescription painkillers.<sup>52</sup> Two, that the Sackler family knew this to be true, and marketed their drugs as stronger and less addictive anyways.<sup>53</sup> These two facts show that the company and family willingly misled and profited by encouraging millions of Americans to become physically dependent on OxyContin. This sales and marketing campaign directly led to a nearly 30-year crisis that has shown no sign of improvement.

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<sup>51</sup> Center for Drug Evaluation and Research, "Prescription Drug Advertising | Questions and Answers," *FDA*, February 3, 2020, <https://www.fda.gov/drugs/prescription-drug-advertising/prescription-drug-advertising-questions-and-answers>.

<sup>52</sup> Van Zee, "The Promotion and Marketing of OxyContin."

<sup>53</sup> Van Zee.

## Economic Impact

The issue of Big-Pharma advertisements further complicates the recently-ended saga between Pharmaceutical companies like Purdue, Cardinal Health, AmerisourceBergen and McKesson and makes their settlements with the supreme court even more infuriating to understand. These pharmaceutical companies recently reached settlements with both state and federal court that freed them of any legal wrongdoing in the opioid crisis, in return for a monetary settlement. The exact settlement value varies from company to company, but in total around \$50 billion will be split between states nationwide.<sup>54</sup> \$50 billion is an extraordinary amount of money which will improve treatment centers and provide more research opportunity nationwide, but in terms of damage done to peoples livelihood and to the country, this number hardly accounts for all the damages.

A 2017 study conducted by the CDC claimed that costs for opioid use disorder and fatal opioid overdoses were more than \$1 trillion.<sup>55</sup> This number accounts for many different losses, and likely underestimates the true value we have lost because of widespread addiction. The \$1 trillion accounts for treatment costs, including Narcan and extended hospital stays because of an overdose, but the largest part includes the value of a human life. In 2017 there were approximately 70,000 overdose deaths, resulting in countless dollars lost in economic output.<sup>56</sup> Describing the crisis in such a way seems to take away from the human aspect of this loss, but it can assist state legislators in understanding the economic burden this crisis creates.

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<sup>54</sup> "Distributors Approve Opioid Settlement Agreement | McKesson," accessed April 25, 2022, <https://www.mckesson.com/About-McKesson/Newsroom/Press-Releases/2022/Distributors-Approve-Opioid-Settlement-Agreement/>.

<sup>55</sup> Curtis Florence, Feijun Luo, and Ketra Rice, "The Economic Burden of Opioid Use Disorder and Fatal Opioid Overdose in the United States, 2017," *Drug and Alcohol Dependence* 218 (January 1, 2021): 108350, <https://doi.org/10.1016/j.drugalcdep.2020.108350>.

<sup>56</sup> National Institute on Drug Abuse, "Overdose Death Rates," National Institute on Drug Abuse, January 20, 2022, <https://nida.nih.gov/drug-topics/trends-statistics/overdose-death-rates>.

## Wave 2: Heroin Abuse

Wave one of this crisis lasted for nearly 15 years, and it was not until around 2010 when a new wave was distinctly identified by public health researchers. Pharmaceutical companies like Purdue had created an issue where once public health officials fully realized the gravity of the situation, it had spiraled too far out of control to contain quickly. Millions of people were addicted to prescription opioids, and when doctors wouldn't refill their prescription, many had to turn elsewhere to escape extreme withdrawals. In 2010 public health officials and law enforcement officers saw a massive uptick in heroin abuse throughout the United States.<sup>57</sup> Heroin is an opioid much like oxycontin, made from morphine, which is a natural substance taken from the seed pod of poppy plants, mainly grown in Asia, Mexico, and Columbia.<sup>58</sup> Heroin can be snorted and smoked but is most consumed by mixing the powder with water and injecting it with a needle. For those already addicted to opioids and unable to get a refill on prescriptions, heroin is the cheapest and easiest option to obtain. A 2016 study suggests that up to 80% of heroin users misused prescription opioids before switching to heroin.<sup>59</sup> Unfortunately, this data suggests that although the waves of the crisis are separate, they tend to build on each other. By that I mean moving into a new "wave" does not mean that the previous one has ended. In a sense they combine and build off each other, making the crisis spiral further out of control. While heroin abuse was on the rise from 2010-2013, millions of people were still misusing their opioid prescriptions, and an estimated 4-6% of prescription misusers would use heroin.<sup>60</sup>

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<sup>57</sup> "Products - Vital Statistics Rapid Release - Provisional Drug Overdose Data."

<sup>58</sup> National Institute on Drug Abuse, "Heroin DrugFacts," National Institute on Drug Abuse, June 1, 2021, <https://nida.nih.gov/publications/drugfacts/heroin>.

<sup>59</sup> Robert G. Carlson et al., "Predictors of Transition to Heroin Use among Initially Non-Opioid Dependent Illicit Pharmaceutical Opioid Users: A Natural History Study," *Drug and Alcohol Dependence* 160 (March 1, 2016): 127–34, <https://doi.org/10.1016/j.drugalcdep.2015.12.026>.

<sup>60</sup> Robert G. Carlson et al., "Predictors of Transition to Heroin Use among Initially Non-Opioid Dependent Illicit Pharmaceutical Opioid Users: A Natural History Study," *Drug and Alcohol Dependence* 160 (March 1, 2016): 127–34, <https://doi.org/10.1016/j.drugalcdep.2015.12.026>.

Although opioids are dangerous when misused in any way, prescriptions are certainly the “safest” option available. The reason heroin abuse led to an uptick in overdose deaths is because the market for heroin is highly unregulated and users essentially have no idea what, exactly, they are taking. Heroin typically comes in three different colors: white, brown, and black, making mixing the drug with other substances relatively easy. White heroin is oftentimes cut with baking powder, laxatives, talcum powder or sugar. Brown and black heroin can be mixed with dirt or coffee.<sup>61</sup> Heroin is diluted with these substances to save more of the original product, and therefore increase profit margins after it is sold. The practice of “cutting” heroin is so widespread that health officials estimate none of the heroin in circulation is actually “pure.”<sup>62</sup> The addition of these substances lead to a higher chance of overdose when ingested.

This process of cutting directly leads into the third wave of the opioid crisis. Although the aforementioned substances allowed sellers to increase how much heroin they were able to sell, they also noticeably decreased the strength of that heroin. The inclusion of fentanyl into the cutting process allowed heroin to have even stronger and potentially lethal effects while simultaneously continuing to maximize profit margins for sellers.

### Wave 3: Synthetic Opioids/Fentanyl

Fentanyl was originally created as a high-intensity pain medication for cancer patients undergoing chemotherapy.<sup>63</sup> Given the strength of the drug, doctors tend to primarily utilize fentanyl under direct supervision at a hospital. Much like many of the previous trends in this

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<sup>61</sup> Marisa Crane, B. S. Last Updated: December 20, and 2021, “What Is Heroin Cut With? Mixing Agents, Substitutes & Adulterants,” American Addiction Centers, accessed April 25, 2022, <https://americanaddictioncenters.org/heroin-treatment/cut-with>.

<sup>62</sup> Marisa Crane, B. S. Last Updated: December 20, and 2021, “What Is Heroin Cut With? Mixing Agents, Substitutes & Adulterants,” American Addiction Centers, accessed April 25, 2022, <https://americanaddictioncenters.org/heroin-treatment/cut-with>.

<sup>63</sup> “Fentanyl.”

crisis, fentanyl use becomes exponentially more dangerous when consumed for non-medical reasons.

2013 was one of the major years when opioid addiction started to become an even bigger issue than it was already, when fentanyl began to be included in heroin, counterfeit pills, cocaine, and methamphetamine. The addition of fentanyl lowered manufacturing costs for those dealing these drugs while also strengthening the drugs that they were selling. When fentanyl is combined with any of these drugs it increases the strength of the “high,” leading many to believe that they purchased a “strong batch,” of meth, heroin, or cocaine.<sup>64</sup> In doing so, drug dealers can sell smaller amounts of these drugs for higher prices, therefore maximizing the amount of money they can make.

Fentanyl does not even need to be consumed to overdose on it. Simply encountering it and then touching your eyes or mouth can result in an overdose.<sup>65</sup> Law enforcement agencies have had a difficult time limiting the spread of fentanyl throughout the country. As mentioned before, the market is entirely unregulated, and it is very difficult to control where these drugs are going. In any case, if purchasing drugs from anywhere but the pharmacy, a fentanyl test should be run on them, which can be purchased at places like CVS and Walgreens, to mitigate any risk of a potential overdose.<sup>66</sup>

The addition of fentanyl into the unregulated drug trade created a larger issue than the opioid crisis has seen in the past. From 1999-2013, the deadliest year for opioid overdoses in the United States saw around 22,000 people die in 2012. Once fentanyl began being cut into drugs

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<sup>64</sup> “Fentanyl.”

<sup>65</sup> “Fentanyl.”

<sup>66</sup> National Institute on Drug Abuse, “The Overdose Crisis: Interagency Proposal to Combat Illicit Fentanyl-Related Substances,” National Institute on Drug Abuse, December 2, 2021, <https://nida.nih.gov/about-nida/legislative-activities/testimony-to-congress/2021/the-overdose-crisis-proposal-to-combat-illicit-fentanyl>.

like heroin and cocaine in 2013, the number of annual overdoses doubled in just three years.<sup>67</sup> In the 12-month period ending in November of 2021, the CDC estimates that 106,000 people will have died from opioid overdoses- nearly five times the number only eight years prior.<sup>68</sup> Currently, fentanyl and fentanyl related substances are driving the opioid crisis in the United States.<sup>69</sup> Part of the major drawback in current fentanyl research has to do with the fact that fentanyl is a Schedule II drug, meaning that it is approved as an active ingredient in some FDA approved medical products.<sup>70</sup> The main issue with fentanyl is its combination with Schedule I drugs (unapproved in any medical products) such as cocaine, meth, and heroin. For scientists to research the drugs in coordination with each other, they must obtain special licensing to work with Schedule I drugs, a lengthy and difficult approval process. Researchers in the field have “reported that sometimes these challenges impact Schedule I research and deter or prevent scientists from pursuing this critical work.”<sup>71</sup> As a result of these difficult policies, further research on fentanyl in coordination with Schedule I drugs take such a long time for approval, that many drug researchers devote their efforts elsewhere.

### Underrepresentation of Data

Opioid overdose rates are massively underreported. In 2020, Andrew J. Boslett, Alina Denham and Elaine L. Hill ran a study regarding the 632,331 drug overdose incidents between 1999 and 2016. The general reporting of drug overdoses is split into two categories: known drug classification and unclassified drug overdoses. Of the 632,331 drug overdose incidents, roughly

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<sup>67</sup> Abuse, “Overdose Death Rates.”

<sup>68</sup> “Prodructs - Vital Statistics Rapid Release - Provisional Drug Overdose Data,” April 5, 2022, <https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>.

<sup>69</sup> Abuse, “The Overdose Crisis.”

<sup>70</sup> Abuse.

<sup>71</sup> Abuse.

140,000 fell into the category of “unclassified drug overdoses.”<sup>72</sup> This means that 140,000 overdoses fell into no category, where they could not say for certain what caused the overdose. Upon further research involving such deaths, Boslett, Denham and Hill concluded that 71.8% of these deaths involved opioids, which resulted in nearly 100,000 additional opioid related deaths, a 28% increase in those that were originally reported.<sup>73</sup> Given that since 2016 we have seen a massive uptick in already reported opioid related deaths, the number is likely far higher when including 2017-2021. Scholarly studies have not yet been conducted on this period but using the same analysis as this study it can be inferred that there were even more deaths than originally reported over the past five years.

## Effects of the COVID-19 Pandemic

March of 2020 marked a change in not only the public health landscape with the onset of the COVID-19 pandemic, but also created many new issues surrounding the opioid crisis. When Covid began to ravage nearly the entire world, many other issues were put on hold to address the largest problem at hand. Any progress that had been made to combat opioid addiction in the United States had to be put on hold as a more pressing issue ran rampant throughout the entire country.<sup>74</sup> With tens of thousands of people dying at the hands of coronavirus each day, hospitals and public health officials were forced to drop nearly everything they were doing and focus solely on treating Covid patients. The pandemic itself primarily created one massive issue which has now totaled nearly one million deaths nationwide, but it also forced previous issues to the

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<sup>72</sup> Andrew J. Boslett, Alina Denham, and Elaine L. Hill, “Using Contributing Causes of Death Improves Prediction of Opioid Involvement in Unclassified Drug Overdoses in US Death Records,” *Addiction (Abingdon, England)* 115, no. 7 (July 2020): 1308–17, <https://doi.org/10.1111/add.14943>.

<sup>73</sup> Boslett, Denham, and Hill.

<sup>74</sup> Seema Choksy Pessar et al., “Assessment of State and Federal Health Policies for Opioid Use Disorder Treatment During the COVID-19 Pandemic and Beyond,” *JAMA Health Forum* 2, no. 11 (November 19, 2021): e213833, <https://doi.org/10.1001/jamahealthforum.2021.3833>.

“back of the line” while the most pressing one was dealt with.<sup>75</sup> This resulted in a massive change in opioid related deaths throughout the country, and opiate addiction rose *rapidly*.

When Covid first broke out in the early months of 2020 the entire country went into a nearly two-month lockdown. The lockdown included limited social interactions, less time outdoors and far more time “trapped” inside our own homes. The data summarized below offers more insight into the trends of the pandemic and how it affected opioid addiction and how on a national level, this issue became substantially worse.

Opiate addiction has risen drastically in nearly every state since the beginning of the Covid-19 pandemic.<sup>76</sup> As the entire world seemingly came to a standstill for nearly two years, opioid addiction continued to run rampant throughout the country. Data recovery during this time period was significantly more difficult for the CDC. Due to an increase in hospitalizations from Covid-19, other issues such as the opioid crisis received far less care and treatment as they had in the past. The only two states which did not report an increase in overdose deaths were New Hampshire and Delaware.<sup>77</sup> As we come out of this pandemic, it is even more important to address other public health crises and begin to make real change for those suffering from addiction nationwide.

Historically, opioid addiction has disproportionately affected white men more than any other demographic, but in most recent years that fact has begun to change.<sup>78</sup> A recent study done

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<sup>75</sup> CDC, “COVID Data Tracker,” Centers for Disease Control and Prevention, March 28, 2020, <https://covid.cdc.gov/covid-data-tracker>.

<sup>76</sup> “Evaluation of Increases in Drug Overdose Mortality Rates in the US by Race and Ethnicity Before and During the COVID-19 Pandemic | Health Disparities | JAMA Psychiatry | JAMA Network,” accessed April 25, 2022, <https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2789697>.

<sup>77</sup> “Evaluation of Increases in Drug Overdose Mortality Rates in the US by Race and Ethnicity Before and During the COVID-19 Pandemic | Health Disparities | JAMA Psychiatry | JAMA Network,” accessed April 25, 2022, <https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2789697>.

<sup>78</sup> “Evaluation of Increases in Drug Overdose Mortality Rates in the US by Race and Ethnicity Before and During the COVID-19 Pandemic | Health Disparities | JAMA Psychiatry | JAMA Network.”

by Joseph Friedman and Helena Henson examines the Center for Disease Control (CDC)'s data regarding opiate addiction since 1999. Friedman and Henson broke the data into two time periods: 1999-2019 and 2020-2021. In doing so, they were able to properly examine changes in various statistical trends once the Covid-19 pandemic began. Their findings show a stark increase in overdose percentages among each demographic studied, and more interestingly displayed that white individuals experienced the smallest increase in overdose deaths compared to their black, American Indian, and Hispanic or Latino counterparts.

“Overdose death rates per 100 000 among Black individuals increased from 24.7 in 2019 to 36.8 in 2020, which was 16.3% higher than that for White individuals (31.6) in 2020....In 2020, Black individuals had the largest percentage increase in overdose mortality (48.8%) compared with White individuals (26.3%)....The results also showed that American Indian or Alaska Native individuals experienced the highest rate of overdose mortality in 2020 (41.4 per 100 000), which was 30.8% higher than that for White individuals.”<sup>79</sup>

Overdose deaths are at an all-time high in nearly every demographic of American citizens, and there is no sign to show that this will change anytime soon. President Biden addressed this crisis in his recent State of the Union address, saying that his administration hopes to move towards a treatment-based solution rather than a “war on drugs” type policy.<sup>80</sup> For nearly twenty years attempts to cut off illicit opioid supply into the United States has resulted in minimal progress and this change in policy offers a glimmer of hope for the future.

## A Fourth Wave? Opioid Abuse Coupled with Mental Health Struggles

Most scholarly research on the opioid crisis clearly identifies three waves of the crisis, but new data is suggesting that we may have already entered a new, fourth wave which is being

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<sup>79</sup> “Evaluation of Increases in Drug Overdose Mortality Rates in the US by Race and Ethnicity Before and During the COVID-19 Pandemic | Health Disparities | JAMA Psychiatry | JAMA Network.”

<sup>80</sup> “2022 State of the Union Address,” The White House, accessed April 25, 2022, <https://www.whitehouse.gov/state-of-the-union-2022/>.

characterized as a stimulant/opioid epidemic.<sup>81</sup> This new finding characterizes the fourth wave in a manner that had not been discussed in past literature, focusing on mental health as an active participant in opioid abuse. New CDC data has shown an increase in overdose rates in which both stimulants (Cocaine, Methamphetamine) and opioids are present. A 2021 study argues that “We have entered a fourth wave which can be characterized as a stimulant/opioid epidemic reflecting the use of either or both substances, where co-occurring mental illness is more evident than in the past.”<sup>82</sup> The issue at hand is one that is even more complex than the previous three waves. In the other three we were able to point to a single actor which “changed” the opioid abuse landscape (Heroin, Fentanyl). But, in this case we are seeing opioid abuse, stimulant abuse and an increase in mental health issues all play a role in a potential new wave of the crisis. The same 2021 study cites that of people suffering from substance abuse and mental health issues, only 12% of them received treatment for both issues and many receiving no treatment for either issue.<sup>83</sup> This lack of treatment is becoming a prominent issue in how the crisis is being combated at the federal and local levels.

Case studies like this enable public health researchers to identify details as they relate to specific demographics of the overall population. Another approach is to look at the crisis through a state-by-state analysis and pinpoint which strategies are working and which are not.

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<sup>81</sup> Richard A. Jenkins, “The Fourth Wave of the US Opioid Epidemic and Its Implications for the Rural US: A Federal Perspective,” *Preventive Medicine, Behavior Change, Health, and Health Disparities 2021: Rural Addiction and Health*, 152 (November 1, 2021): 106541, <https://doi.org/10.1016/j.ypped.2021.106541>.

<sup>82</sup> Jenkins.

<sup>83</sup> Richard A. Jenkins, “The Fourth Wave of the US Opioid Epidemic and Its Implications for the Rural US: A Federal Perspective,” *Preventive Medicine, Behavior Change, Health, and Health Disparities 2021: Rural Addiction and Health*, 152 (November 1, 2021): 106541, <https://doi.org/10.1016/j.ypped.2021.106541>.

## Case Study: Massachusetts

Despite being one of the lowest states in terms of total opioid prescriptions written per 100 people (35.3), Massachusetts ranks fifth in opioid overdoses per 100,000 persons (29.3).<sup>84</sup> In Massachusetts, 88% of all overdose deaths involve at least one opioid, drastically higher than the national average of 70%.<sup>85</sup> What is driving these issues in Massachusetts and what is being done to lower these numbers?

Opioid overdose numbers are as high as they are in Massachusetts for similar reasons to that of the rest of the country. At the moment, numbers are at an all-time high mainly due to the presence of fentanyl in other unregulated drugs. Despite the best efforts of local governments, these numbers are expected to rise, again similarly to the rest of the country. Since 2013, local government has enacted the Massachusetts Opioid Abuse Prevention Collaborative to combat the crisis throughout the state, a collaborative which aims to customize prevention measures based off demographics in different neighborhoods.<sup>86</sup> This is what they describe as the Strategic Prevention Framework or SPF which is “a five step planning model developed by the Substance Abuse and Mental Health Services Administration. The SPF was developed to help local communities select, implement, and evaluate evidence-based substance misuse prevention processes that are culturally appropriate and sustainable.”<sup>87</sup> The goal of this collaborative is to implement local policy, practice, systems, and environment to counteract the crisis and reduce opioid related overdoses and deaths. Massachusetts is facing the same issue that the rest of America is, which is that many people acknowledge that changes need to be made and policies need to be enacted, but it is difficult to find any real value that these programs are providing.

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<sup>84</sup> Abuse, “Opioid Summaries by State.”

<sup>85</sup> Abuse.

<sup>86</sup> “The Center for Strategic Prevention Support | CSPS-MA,” accessed April 25, 2022, <https://csp-s-ma.org/>.

<sup>87</sup> “The Center for Strategic Prevention Support | CSPS-MA.”

When governor Charlie Baker was elected in 2014, he made it very clear that combating the opioid crisis was a top priority during his time as Massachusetts governor. From 2014-2018, Baker has made the overdose-counteracting drug naloxone more widely available than ever before, compiled a database of statistics on the crisis, and poured money into treatment centers statewide.<sup>88</sup> On top of this, prescription rates are down nearly 30% since 2014. In 2017, overdose rates decreased in Massachusetts, making it only one of eight states who could say that in that year.<sup>89</sup> Despite all of this, there is no evidence that addiction rates are down throughout the state and leaves many wondering if Massachusetts simply got lucky in their numbers from that year. Massachusetts is a great example of how despite the best efforts of local governments, it is possible that this crisis fails to improve for a very long time. Governor Baker has made a clear effort to limit the amount of death Massachusetts experiences at the hands of this crisis, but overdose rates still continue to rise year over year. It appears 2017 was just a fluke.

## Glorification in Pop Culture

Another aspect of this crisis that is contributing to the potential fourth wave is the glorification of drug use in pop culture, specifically seen in movies and television shows. The first show that comes to mind is *Euphoria*, an Emmy award winning HBO series which follows the life of Rue Bennett, a severely drug addicted 16 year old, and portrays how she navigates her life while hiding her addiction from friends and family. Rue constantly mixes drugs of any sort, heroin, fentanyl, cocaine, ecstasy... the list goes on and on.<sup>90</sup> While on one hand the show depicts how her life is unraveling at the hands of her addiction, it also showcases scenes in which

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<sup>88</sup> "Governor Baker Signs Landmark Opioid Legislation into Law | Mass.Gov," accessed May 10, 2022, <https://www.mass.gov/news/governor-baker-signs-landmark-opioid-legislation-into-law>.

<sup>89</sup> Abuse, "Opioid Summaries by State."

<sup>90</sup> "What 'Euphoria' Gets Right—and Wrong—About Teen Drug Use," *Time*, March 2, 2022, <https://time.com/6152502/euphoria-hbo-teenage-drug-use/>.

drugs are used as her coping mechanism and suggests that turning to drugs will temporarily relieve the mental and physical pain one may be feeling. One scene that particularly comes to mind occurs when Rue's partner travels to New York City without her and Rue relapses on a combination of fentanyl and heroin, sending her into a dream like state where all the anger and sadness she felt simply evaporated. Being a show that follows high schoolers and therefore targets a younger audience, this depiction can be incredibly harmful to young people dealing with the same issues that Rue does. It seems to show that it's fine to escape into a drug induced reality in which real world problems are gone for even the shortest amount of time. I question whether the show is more likely to turn people away from drugs or see them as a coping mechanism for underlying issues. On another hand, the show also showcases the very real reality of how some younger people get into these drugs in the first place. We quickly learn that Rues father died of cancer, and her experimentation with drugs began when she tried one of his prescriptions for pain during chemotherapy. The issue here isn't that the show wrongfully depicts drug addiction, but rather that it creates an environment in which some may feel it is acceptable to turn to drugs rather than face the other issues that they may be dealing with. This, coupled with the possible "mental health," wave of the crisis showcases an environment in which drug use is not only accepted, but glorified.<sup>91</sup>

## Conclusion

Moving forward in this field of study it will be important to recognize the factors that lead to a "new wave" of this crisis. With the early identification of a potential fourth wave, efforts to counteract and prevent a fifth are even more necessary. Preventative measures must be

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<sup>91</sup> Jenkins, "The Fourth Wave of the US Opioid Epidemic and Its Implications for the Rural US."

taken, the history of this crisis has shown us that policy change fails to produce the results that it promises.

For nearly twenty years state and local governments have worked to combat this crisis with practically no results to show for it. Overdose deaths have risen nearly every year since 2000 and as we can see from this research, there is no indication that this will change in the near future. Although it varies from state to state, most local governments have focused their efforts on cutting off the supply of these drugs, rather than treating those who are suffering from addiction. This strategy has failed to minimize the number of overdoses in the United States. With a fourth wave of the crisis taking shape the federal government should be taking steps to directly help those addicted to opioids with the goal of lowering the number of overdose deaths each year. There needs to be greater access to treatment centers and mental health care, without the worry of being arrested for possession of any substance. Despite companies like Purdue, Cardinal Health, AmerisourceBergen, and McKesson being held accountable for their role in creating this crisis, monetary compensation has not resulted in a decline in numbers of people suffering from opioid addiction. Due to the settlements that they came to, they have been freed from any legal wrongdoing in creating this crisis, in return for a payout that hardly repairs the damages that have taken place.

The significance of this work carries far beyond recognizing who may or may not have been at fault in the foundation of this crisis. The actions of the past can no longer be reversed, irreprovable damages have already taken place: hundreds of thousands of lives lost, millions of people suffering from addiction and billions of dollars spent. The best that we can do as a society is attempt to change the grim course of history that is the opioid crisis. Understanding the path that the crisis has followed provides us with a better understanding of how we will be able to

solve it in the future. As lawmakers continue to enact policy change in regard to this crisis, let the previous waves serve as a reminder to how quickly things can unravel, so that this crisis can be mitigated in the years to come.

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