A Proposal to Increase Funding for Programs Combating the U.S. Opioid Crisis

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I. Background

The opioid crisis in the United States is a major issue today that was sparked by pharmaceutical companies in the 1990s. Companies told medical communities, such as healthcare providers and patients, that opioids would not be addictive. This caused healthcare professionals to begin prescribing painkillers at much higher rates, which led to people misusing their painkillers (National Institute on Drug Abuse). The most common prescription drugs that result in overdoses are Methadone, Oxycodone, and Hydrocodone. There has been a steady increase in the amount prescribed since 1990, which has resulted in more overdoses and deaths. In 2017 there were 58 prescriptions per every 100 Americans, which means that the majority of Americans are prescribed opioids. Current rates for the amount of prescriptions are still higher than they were in 1990; there is currently a reduction of 19% from 2006 to 2017. Prescription use has been found to be more common in counties that have small cities or large towns, high percentage of white residents, high number of dentists and primary care physicians per capita, more people who are uninsured or unemployed, and more residents with diabetes, arthritis or disability ("Opioid Overdose").

The National Institute of Health (NIH) published an article on opioid overdoses in early 2019, claiming that there is a current average of 130 opioid- related overdoses per day. The CDC collected data that shows that 36% of those 130 overdoses are from prescription misuse ("Opioid Overdose"). There is also a correlation between those who used opioids and those who do heroin. 5% of patients who misuse their prescriptions are predicted to late move onto heroin. 80% of heroin users were people who misused opioids. In the Midwest, there has been an steady

increase in opioid overdoses by 70% from July 2016 to September of 2017 (National Institute on Drug Abuse). From 1999 to 2017 there were around 218,000 deaths caused by prescription overdoses. There is an abundance of data that explains that overdoses have increased throughout the years, in fact the amount of overdose deaths from prescription drugs in 2017 were five times higher than in 1999. Men are seen as having a higher rate of overdose deaths than women in 2017 at a rate of 6.1 per 100,000 people while the rate for women is at 4.2 ("Opioid Overdose").

II. Arrow's Theorem Model

The social goal is to reduce the amount of people using opioids to increase the safety of both the individual and the community. Users of opioids receive a higher payoff from the pleasure that they receive from the drug rather than the safety of not taking the drug. We think that Arrow's impossibility theorem would apply best to the issue.

Figure 1 shows the methods of treatment 3 different people may select in the case that they would use opioids. Current users, or at least many, know the symptoms that come with withdraw if the medication is completely cut without the proper information. According to the American Addiction Center, some symptoms include trouble falling asleep, hypertension, anxiety, depression, stomach cramps, diarrhea, drug cravings, etc. For many users, who may have started taking an opioid with the intention of "helping" their mental health issues, those symptoms are not ideal. The option to continue using the drug is much easier to take than finding an alternative or completely getting off the drug with no assistance. Past users, we believe, would have taken the steps to receive treatment in form of another medication that soothes the process. According to the NIH (National Institute on Drug Abuse), there are 3 well-known medications (Methadone, Buprenorphine, and Naltrexone) that assist in the treatment of the opium addiction.

We strongly believed that the second option a past user would select would be to completely get off the opioid without a form of medication to assist. Those who have endured the long journey of recovery know what their body is capable of with or without the opioids and we believe that some could have found the "cold turkey" method in their capabilities rather than going back to where they started. The category of non-users, those who have never had to recover from an opioid addiction or have never had to use any form of opioid, was challenging to consider the treatment they may have preferred. We hypothesized that non-users would simply believe that cutting off the opioid would be simple enough for the user to be okay. We decided that the non-user, an outsider, would not consider the mental health issues at risk users would have to face and if that did not work; the current user should just continue using. There are not many people who currently know there is a medicated form of opioid assistance to consider that as an option. As the non-user is someone who possibly has no prior knowledge of opioid usage and its treatments, we predicted that they would have the alternative as the last option.

The figure below (figure 1) displaces the problem that there are not many people who know what their options are and how to assist those who are in search of a solution. This figure also shows promise to a solution. As there are not many who explore their options due to lack of education in prevention, education and the regulation of opioid medications would assist in the number of people who have survived past using opioids as currently that number is soaring.

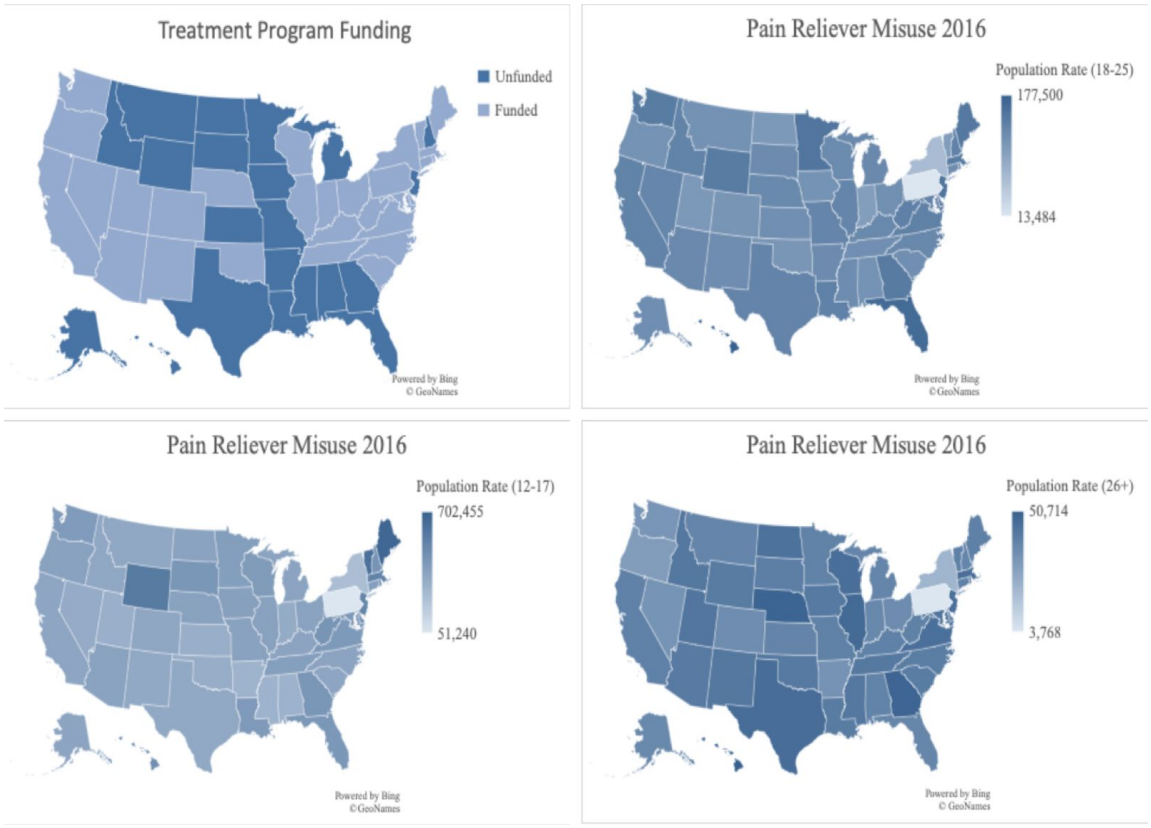
Figure 1

Current Users	Past Users	Non-Users
Opioids	*Alternative*	*Cold turkey*
Alternative	*Cold turkey*	*Opioids*
Cold turkey	*Opioids*	*Alternative*

III. Quantitative Analysis

The data used to create the graphs from Figure 2 came from the National Survey of Drug Use and Health 2016-2017 and from the CDC survey on treatment funding. These graphs show that there is definitely a correlation between states that have funded opioid treatment programs and states with low misuse rates. The difference between the pain reliever misuse graphs is the ages 12-17, 18-25, and people over the age of 26. Colorado and Florida are states that currently do not fund treatment programs and they have the highest rates of pain reliever misuse among all ages.

Figure 2



IV. Cost Benefit Analysis

Figure 3

COSTS	BENEFITS
Increase police force by 10% - E Immediate cost *New cost: 1183600 x $64,500 = $76.3422 billion*	**Less addicted people - N** Benefit over 5 years *2 million x $4.8 million = $9.6 million* *NPV = $1.864 million*
Hire government workers - E Immediate cost *1,000 x 51,000 = $51million*	**Better health coverage - E** Immediate benefit *Gain in $3.7 billion in insurance pool, would decrease the price of insurance*
Education program - E Immediate cost *$15 million*	**Education - N** Benefit over 5 years *$66 million x $2.40 = $158.4 million* *NPV = $30.8 million*
	Less dead people - N Benefit over 5 years *20,978 x 9.6 million = $201.4 billion* *NPV = $39.1 billion*
	People feel safer - N Immediate benefit *$76.3422 billion x $1.63 = $124.4 billion*
Total Cost *$76.41 billion*	**Total Benefit** *$167.21 billion*

The policy that is being evaluated is the implementation of a government program that would focus on educating and regulating prescription drug misuse. The optimal goal of this program would be to reduce the amount of people that are currently misusing prescription opioids would decrease by fifty percent within five years of the program being in place.

In 2012 there was an estimate of 1.076 million police officers in the United states, if this number is to increase by a proposed ten percent there would be 1.183 million officers. This higher number of officers would lead to a higher cost of wage for them as the current salary is $64,500 (Banks, Hendrix, Hickman, & Kyckelhahn). The current salary for one government

worker is around fifty-one thousand dollars, so if the new program were to require a thousand workers the cost of hiring them would be $51 million. The cost for implementing an education program would be $15 million because the estimated cost for research and development would be at five million dollars and the cost for distributing the information through the internet, public speakings and other options would be at an estimated ten million dollars. These would all see an immediate cost to the taxpayers.

The benefits for this program would include having less addicted people. The US currently sees around two million people that are addicted to opioids (UnitedHealth Group). Using the US Department of Transportation's value of a statistical life at $9.6 million, which is halved because the life of the person is not gone it is just impaired, we can value this benefit at a future value in five years of $9.6 million with a present value of $1.86 million. Opioid overdoses currently cost Medicare and Medicaid almost seven and a half billion dollars in expenses (RevCycleIntelligence). The goal of reducing the amount of people addicted to opioids to fifty percent would mean that there would be $3.7 billion dollars less spent on overdose patients. This would benefit the general public with a gain in $3.7 billion in the insurance pool, which would also decrease the costs of private insurers. Education programs on opioid misuse would benefit future addicts, current addicts, and anyone else in the community that is looking to be an ally to those in need. A study found that for every dollar that is spent on education programs there is an average of $2.40 return to governments through social benefits (Caulkins, Everingham, Chiesa, James, & Shawn). The cost to start this new program would be $66 million when the wages and programs costs are added up, which means that there would be a benefit of $396 million from the education program after five years. The present benefit of education would be $30.8 billion. In

2017, 69,927 people died from opioid overdoses, and thirty percent of these deaths (around twenty thousand) is due to prescription drugs (National Center for Health Statistics). If that thirty percent had not overdosed they would have benefited the public at $201.4 billion, in five years, when applying the Department of Transportation's value of life. However, there present value is $39.1 billion at the implementation of the program. A study conducted in 2018 found that for every dollar that is spent on policing there is a $1.63 social benefit due to the reduction of crime (Chalfin, & Mccrary). Applying this to the policy would see a benefit of $124.4 billion based off of the cost of increasing police force presence.

V. Policy Design

In making a change to the lack of support current users are not receiving, we believe that proposing a bill to promote positive steps towards recovery by educating and regulating drug misuse will decrease the number of people overdosing and dying that is currently climbing. This would require states, those who currently do not fund treatments, to increase their funding for state affiliated opioid treatments and education. Other major outcomes of this bill include decreased opioid use and reduced pharmaceutical influence in regards to treatments. We are going to take the "whole loaf" approach by requiring all states to participate in the education and regulation program, whereas the "six slices" approach would be to tackle this issue one state at a time. Currently, this is not working because there is the issue of paternalism where people who are misusing feel as though their autonomy has been threatened to then continue making these harmful decisions. We did a cost benefit analysis (see Figure 3) that evaluated the policy options of this policy.

For this proposed policy, the judicial branch of the federal government would need to be involved to enforce this policy and require all states to raise funding for this program. As of 2016-17, many states have already prioritized programs, such as the one we proposed, and have seen positive changes once they made the topic a priority. We do not think it would be challenging for the remaining states to follow the path of the improving states. For this policy to pass and be enacted it would need to have the majority vote in both national and local elections. To acquire the majority vote all political parties, whether it is conservative or liberal, need to support this law. The opioid crisis is a huge issue currently and there is support from both sides on the idea that something needs to be done to fight back. People that would need to be persuaded of this policy would be people who are involved with the pharmaceutical companies as they would likely see a drop in revenue. A way to cater to them would be to push the idea that following this policy is more ethical and if they were to follow it there could possibly be incentives put in place. This policy of educating and regulating has allies with doctors, health insurance companies, previously addicted people and members of the community. These groups are allies because they have the most to gain from this policy through moral reasons and economic reasons. To make sure this policy works we need to start monitoring and enforcing the policy right away.

VI. Conclusion

On a national level, current policies in place for decreasing the amount of people misusing and overdosing on opioids are not effective enough to cause a significant change unless a state is part of the few who have made this topic a priority to fund. This policy, of requiring states to raise funding for education and regulation, will only be able to work to its full potential

if the federal government steps in on this issue as they currently are not as involved as they should be. Many U.S citizens are concerned with the current lack of support their neighbors, who are currently using, are receiving. We believe that in order for a community to reach its full potential we all need to work together to prevent these numbers from rising in the future while we still can.

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