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The Federal Response to the Opioid Epidemic: Examining 2021 SAMHSA Grant Allocation

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ABSTRACT The opioid epidemic has been a major public health crisis since the 1990s but was only declared a federal public health emergency in 2017. Since then, the federal government has increased funding for programs to address opioid use and overdose deaths. Despite the increased funding in the past five years, opioid-related overdose deaths continue to rise. The Substance Abuse and Mental Health Administration (SAMHSA) is the federal agency responsible for allocating federal funds to opioid use disorder prevention, treatment, and personnel training programs. In 2021, SAMHSA allocated funding for opioid use disorder through eleven grant programs with a total of 330 grant awards, amounting to over \$150 million. My analysis of 2021 SAMHSA grants aims to identify how funds for opioid use disorder are allocated, examine the relationship between opioid-related overdose deaths and the amount of funding allocated to states, and suggest potential gaps in funding. Ultimately, my research has found that treatment-focused programs were prioritized over prevention, education and training programs by SAMHSA funding. In 2021, treatment programs accounted for 223 of the 330 individual SAMHSA grant awards for opioid use disorder and 100% of grant awards received by nonprofit organizations. Medication-Assisted Treatment is the most funded program among these grant awards. Additionally, states with a higher number of opioid-related overdose deaths are more likely to receive higher funding from SAMHSA grants ($p < .001$). Conversely, states with higher overdose death crude rates per 100,000 people did not receive adequate funding relative to the size of the population, creating gaps in accessibility to care. Additional gaps in opioid use disorder programs exist due to the focus on funding downstream interventions thus neglecting upstream interventions. The data in this research is limited and therefore cannot draw broader conclusions as to how funding influences overdose deaths over time.

KEY WORDS opioid epidemic, grant allocation, opioid use disorder, substance abuse

INTRODUCTION

Over eight hundred thousand people in the United States have died from opioid-related overdose deaths since 1999 and opioid addiction has been on the rise since the mid-1990s (CDC 2021). Sparked by treatment for acute pain management, physicians across the country started overprescribing opioids to patients. In 2019, over 10.1 million people in the United States, 3.7% of the total US population, misused opioids (McCance-Katz 2019). Of those misusing opioids, 37.5% obtained the drugs via prescription from a healthcare provider (McCance-Katz 2019).

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Prescription opioids were a major cause of opioid-related overdose deaths from the mid-1990s through 2010 when heroin use and overdose spiked (CDC 2021). Heroin became less expensive than prescription opioids on the illicit drug market, making it more accessible for many with opioid use disorder. Heroin overdose deaths decreased during 2018, but remain higher than before 2010 (CDC 2021). As heroin deaths decreased, fentanyl-related overdose deaths spiked rapidly. A synthetic opioid over 50 times stronger than heroin, fentanyl is often used by drug dealers to lace other illicit drugs. Fentanyl remains the major cause of opioid-related overdose deaths in 2022.

It's vital to acknowledge the disproportionate impacts of opioid-related overdose deaths and incarceration rates among non-White communities. Black and Latino individuals are arrested at significantly higher rates than White individuals, despite similar rates of drug use between these groups (Netherland 2016). This highlights the systemic targeting of marginalized communities with respect to drug arrests and sentencing. Similarly, Native American individuals experience opioid-related overdose deaths at significantly higher rates than any other racial group (CDC 2021). In 2016, the opioid-related overdose death crude-rate was 13.7 deaths per 100,000 people among Native American communities, compared to the national average of 2.2 deaths per 100,000 people. Racial disparities drug-related arrests and overdose deaths are important factors in creating effectively targeted interventions to reduce the impact of the opioid epidemic for all Americans, not just White Americans.

The Substance Abuse and Mental Health Services Administration (SAMHSA) is one of the primary federal agencies responsible for opioid-related grant allocation. SAMHSA mainly allocates funding for opioid use disorder-related programs to healthcare organizations, such as hospitals, non-profit organizations, community-based substance abuse organizations, state government agencies such as state Departments of Public Health, universities, and research institutions. SAMHSA provides a wide range of funding across the United States, supporting programs from suicide prevention, juvenile criminal justice, and homelessness resources. Many of SAMHSA's grants are competitive grants, meaning individuals or organizations need to apply for funding from a specific program through the agency. SAMHSA's largest opioid use disorder program provides funding for implementation of medication assisted treatment in communities. The agency's overall goal is to fund programs to provide accessible mental health and substance use programing across the United States.

Healthcare organizations were a major contributor to the spark of the opioid epidemic. Many providers developed a mindset of "pain as the fifth vital sign" (Mazurenko 2020) when OxyContin was introduced to the prescription drug market. Acute pain management was becoming a more prevalent issue in emergency departments and primary care offices, so providers were looking for solutions to treat patients' pain. OxyContin was marketed as a non-addictive substance that would treat acute pain and prevent recurring bouts of pain for patients, minimizing the likelihood that patients would continue to seek treatment for the same pain-related concerns. This was the major contributor to rapid rates of overprescription of opioids in the 1990s.

As opioid use disorder became more prevalent in the United States, the demand for accessible treatment services skyrocketed. The burden of this type of care fell to non-profit community-based health organizations. These kinds of organizations tend to have a lower barrier of entry for patients by not requiring insurance for treatment. They also tend to offer low-cost services and prioritize the privacy of patients, cultivating a relationship of trust within communities to try to establish reliable treatment options. These organizations faced with the majority of opioid-use disorder treatment care typically rely on grant funding to staff organizations and provide resources for their communities. This tends to leave organizations understaffed and underfunded, resulting in potentially inconsistent treatment options and availability.

The role of state government agencies in the opioid epidemic includes disbursement of state and local funding as well as allocation and implementation of federally awarded funding. Financing is the major barrier to opioid-use disorder care (Canton 2020). State government involvement in the opioid epidemic is widely shaped by political climate and attitude, resulting in inconsistent access and care between states (Laugesen 2020).

The most effective treatment approach for opioid use disorder is Medication-Assisted Treatment (MAT) (SAMHSA 2021). MAT utilizes three FDA-approved medications—methadone, buprenorphine, and naltrexone—to assist in withdrawal symptoms and decreasing the use of opioids. Each of the drugs has slightly different effects on the brain, but the premise of MAT is to use one, or a combination of, these drugs to block the opioid receptors in the brain to avoid overdose if one were to use opioids while on MAT (Kleinman 2020). Despite being considered the most effective approach to opioid use disorder treatment, especially when paired

with additional resources like substance abuse counseling, MAT is widely inaccessible due to a lack of qualified providers.

Collaborative cross-industry treatment approaches have been tested through pilot programs in the past few years (Smith 2021). These approaches pair long-term treatment facilities with emergency departments to create easy referral systems and allow for casual conversations between qualified substance use disorder specialists and overdose survivors when in the emergency room (Smith 2021). These conversations have been found to increase the likelihood of an individual to seek long-term treatment for opioid use disorder after surviving an overdose (High 2020). These pilot programs suggest that cross-industry approaches may be more widely implemented in areas with a high prevalence of opioid use disorder.

MATERIALS AND METHODS

The data collected in this research can be divided into two categories: grant-level and state-level. Grant-level data looks at variables pertaining to each individual grant award whereas state-level data looks more broadly at overdose deaths and the number of SAMHSA grants awarded. State-level data was collected from the CDC Wonder database by filtering by year to show 2019 deaths (Centers for Disease Control and Prevention, 2021). I used 2019 overdose death data despite analyzing 2021 grant data because it is most likely that 2019 death data was the most recent year considered when applying for funding anticipated to be received in 2021. I further filtered the CDC Wonder data to show opioid overdose deaths including prescription opioids, heroin, and fentanyl, as well as suspected intentional and unintentional deaths. I pulled both the raw number of opioid-related overdose deaths and the death crude rate per 100,000 people. Additional state-level data was from SAMHSA the grant-level data I collected. I added the number of individual grant awards received by state and the total funding per state. Additionally, SAMHSA's National Survey of Substance Abuse Treatment lists the number of substance use facilities per state.

Grant-level data included 2021 SAMHSA grant programs that explicitly and exclusively addressed opioid use disorder and opioid-related overdoses. This data was collected from the SAMHSA grant archive. The archive sorts grant programs by the first year the award was funded with awards going back to 2001. Programs with funding beginning in 2021 were used here (SAMHSA Archive, 2021). Within the archive, I examined each grant program for the ones that exclusively and explicitly addressed opioid use disorder and opioid-related overdoses. Grant programs were categorized by program purpose, recipient category, and state of the grant award recipient. The purpose, recipient, and state variables are all mutually exclusive to avoid skewing analysis by double-counting any awards. There were eleven opioid-specific grant programs with a total of 330 individual grant awards in 2021. For each individual grant award, I categorized the grant award recipient organization, the recipient state, the amount of the grant award, and the purpose of the grant program.

Grant program purpose categories include prevention, treatment, and education/training. Prevention grants aim to establish programs to prevent addiction development and opioid-related overdoses. Treatment grants establish programs to increase the accessibility of opioid use disorder treatment. Education and training grants aim to provide training and educational programs to organizations that interact with individuals with opioid use disorder. This category of grants also encompasses any 2021 SAMHSA research grants to universities.

The grant programs in the prevention category are the Strategic Prevention Framework for Prescription Drug Misuse (SPF-Rx) program and the Prevent Prescription Drug/Opioid Overdose Related Deaths (PDO) program. The grant programs in the treatment purpose category are the Medication-Assisted Treatment-Prescription Drug and Opioid Addiction (MAT) program, the Enhancement and Expansion of Treatment and Recovery Services for Adolescents, Transitional Aged Youth, and Their Families (Y&F TREE) program, the State Pilot Grant Program for Treatment for Pregnant and Postpartum Women program, the Building Communities of Recovery (BCOR) program, the Screening, Brief Intervention, and Referral to Treatment (SBIRT) program, and the Tribal Opioid Response Grants (TOR) program. The education and training purpose category include the First Responders-Comprehensive Addiction and Recovery Act Grants (FR-CARA) program, the Providers Clinical Support Systems for Universities (PCSS-Uni) program, and the Rural Emergency Medical Services Training Grants (EMS Train) program.

Grant award recipient categories include healthcare organizations (mostly hospitals), nonprofit organizations, research institutions or universities, state government agencies (typically a state department of public health or mental health), or Native American Tribal organizations.

To analyze the relationships between the variables, I used SPSS for statistical analysis. I used ANOVA tests to evaluate the differences in mean grant award amount in USD between grant recipient categories. I used several cross-tabulation tests with a chi-square test to evaluate statistically significant differences between grant program purposes and grant award recipient categories. To examine correlations between overdose deaths, overdose death crude rates per 100,000 people, total funding by state, and the number of substance abuse facilities, I used Pearson correlation tests to evaluate correlation strengths and statistical significance between the variables.

RESULTS

Characteristics of studies

States with larger populations are likely to have higher numbers of opioid-related overdose deaths than smaller states due to population size discrepancies. This explains why California and Florida experienced the largest raw number of opioid-related overdoses in 2019. The crude rate per 100,000 people allows for small states to be compared to large states for a more accurate representation of the impact of opioid-related overdoses across states without population as a confounding factor. Controlling for population size differences by looking at the crude rate per 100,000 reveals that Delaware, West Virginia, and Maryland experienced the highest rate of opioid-related overdoses relative to the size of the population of each state, respectively.

Among the 330 individual grant awards within the eleven 2021 SAMHSA grant programs, the mean amount, in USD, for individual grant awards was \$466,871.61. The minimum grant award was \$1,650 as part of the Rural Emergency Services Training Grants program and the maximum grant award amount was \$2,450,000 as part of the Tribal Opioid Response Grants program. The middle 50% range of grant award amounts was \$200,000 to \$525,000. Two grant awards were under \$100,000 each and ten individual awards were over \$1,000,000. The average grant award amount by the state is a metric to examine the differences in funding allocation between states. Oregon, Puerto Rico, and Indiana had the highest average 2021 grant award amounts, regardless of the number of grant awards received. The grant program with the greatest number of individual grant awards was the Medication-Assisted Treatment- Prescription Drug and Opioid Addiction Treatment (MAT) program, with 36.1% of total individual grant awards. Treatment-focused programs account for two-thirds (67.6%) of total grant awards, whereas prevention programs account for 22.1% of total grant awards, and training and education account for 10.3% of total grant awards. Despite receiving the lowest number of grant awards, prevention grant programs had the highest mean grant award amount, with the average being over \$600,000. Nonprofits received the largest percentage of 2021 SAMHSA opioid-related grants, with 36.4% of total grant awards. Conversely, state governments received the largest mean grant award amount, closely followed by Native tribes and healthcare organizations.

Substance abuse facilities with opioid-treatment programs suggest a state's capacity to provide treatment for opioid use disorder. Publicly funded facilities rely on grants from organizations like SAMHSA to continue the operation of their programs and offer resources to their communities. The average number of public facilities in a state is 159 versus 148 private facilities. Private facilities typically rely on private, nongovernmental donations and payments from individuals or insurance to fund services. Public facilities often have a lower barrier to access due to the absence of financial reliance on insurance payments. This means that uninsured individuals can access publicly funded facilities more easily than private facilities.

Contrary to my initial hypothesis, nonprofits were significantly ($p < .001$) more likely to receive treatment grants than any other purpose category of grant awards. In 2021, 100% of grants to nonprofit organizations were for treatment programs. Healthcare organizations received no prevention grants. Of grants to healthcare organizations, 56.9% were treatment grants and 43.1% were education and training grants. Of awards to state governments, 15.3% were treatment grants, compared to 54.2% prevention grants and 30.5% education and training grants. State governments were significantly ($p < .001$) more likely to receive prevention grants compared to other grant-recipient organizations, with 94% of total prevention grants going to state government organizations.

The data supported the hypothesis that Native American Tribes were more likely to receive treatment grants than grants for other purposes, with 86.7% of grant awards to Tribal organizations being treatment-focused grants ($p < .05$). The grant program specifically targeting opioid response for Native Tribes, the Tribal Opioid Response Grant, boosted the number of treatment grant awards this population received, though tribes received grant awards from other programs as well. For example, the MAT program specified minimum total funding to be

allocated to Native American and Alaskan Native tribes. In fact, within the MAT program, tribes received significantly ($p < .001$) larger grant awards on average than any other grant recipient.

I hypothesized that states with a greater number of opioid-related overdose deaths would receive more total funding. There was a positive moderately strong (0.55) and significant ($p < .001$) correlation between overdoses and funding supporting the original hypothesis. Additionally, there was a strong positive (0.74) correlation between the number of substance-use facilities in a state and the total funding received in a state. States with more facilities offering opioid-use-related programs are significantly ($p < .001$) more likely to receive higher amounts of funding for opioid programs. This supports the initial hypothesis.

There was also a strong positive correlation (0.79) between the number of substance abuse facilities per state and the number of opioid-related overdose deaths in each state. As this is a positive correlation, states with a higher number of opioid-related deaths were significantly ($p < .001$) more likely to have a higher number of substance abuse facilities. The population could be a factor in this, as states with larger populations are likely to have higher numbers of overdose deaths and higher numbers of substance abuse facilities to serve the larger population. This positive correlation suggests that substance abuse facilities are a response to overdose deaths as opposed to a negative correlation which would suggest that substance abuse facilities assist in decreasing opioid-related overdose deaths. More data over time is necessary to support or dispute this claim.

More specifically, there was also a strong correlation (0.80) between publicly funded facilities with opioid use programs and overdose deaths. This suggests that states with a higher number of overdose deaths are significantly ($p < .001$) more likely to rely on grant funding to sustain their substance abuse facilities with opioid use disorder treatment. This claim also requires more data over time to support or dispute, since trends in the relationship between facilities and deaths over time cannot be analyzed with one year of grant and facility data alone.

The differences between the mean grant award amount for prevention, treatment, and training grants offer insight into the amount of funding allocated to each purpose category for opioid-related grants. The mean grant award amount for prevention programs was \$615,560.53. The mean grant award amount for treatment grants was \$520,429.97. The mean grant award amount for education and training grants was \$233,435.22, which was significantly ($p < .001$) less than the average for prevention and treatment grants. This supports the initial hypothesis that treatment programs will receive more funding than other programs and suggests that education and training programs are less of a priority for SAMHSA grant allocation than prevention and treatment programs.

The mean grant award amount for prevention grants was \$96,130.65 greater than treatment grants, which is not enough of a difference to constitute statistical significance. The lack of significance between the average grant award amounts of these two groups is likely due to the small sample size of prevention grants. Of the 330 total grant awards, 34 were prevention program grants whereas 223 were treatment grants.

The Medication-Assisted Treatment grant program was the largest of SAMHSA's eleven 2021 opioid programs. It had 119 individual grant awards totaling over \$71 million in funding over the full duration of the program. This treatment-focused program allocated 63.9% of the grant awards to nonprofit organizations, 17.6% to healthcare organizations, 9.2% to universities, 7.6% to Native tribes, and 1.7% to state governments. Despite the lower percentage of total grant awards, tribal organizations received significantly ($p < .05$) more average funding per MAT grant award than all other recipient categories with over \$450,000 more funding per average grant than other recipient categories. There were no significant differences in the mean grant award amount between any other recipient categories within the MAT grant award program.

State overdoses, total funding, and substance abuse facilities

The amount of funding a state receives influences the accessibility of opioid use disorder programs available to communities. Theoretically, states that receive more treatment funding can make opioid use disorder treatment programs more accessible, and states receiving more prevention funding can create more accessible prevention programs. States with more accessible programs will likely see a decrease in opioid-related overdose deaths over time. States that continue to receive less funding and create fewer programs will see no change or a rise in overdoses over time.

The moderately strong positive correlation between 2021 SAMHSA grant funding and the number of opioid-related overdose deaths per state illustrates that states with a higher raw number of opioid-related overdoses receive more SAMHSA grant funding. However, population size is likely a confounding factor in this analysis. The raw number of overdose deaths per state does not adjust for population size. In other words, states with larger populations, like California, are more likely to experience a larger number of overdoses than states with smaller populations, like Delaware.

Essentially, states with high crude rates are not receiving more SAMHSA grant funding, despite the higher impact of opioid-related overdose deaths relative to the size of communities. Political framing is likely a contributing factor to the lack of funding in states with higher crude rates per 100,000. Framing the opioid epidemic as a moral shortfall as opposed to a public health crisis is associated with the dominance of conservative leadership (Weiss 2021). Additionally, conservative leadership tends to recommend punitive approaches involving law enforcement as opposed to implementing accessible opioid use disorder treatment programs (Weiss 2021). While there was no significant correlation found between the political leaning of a state and the amount of 2021 SAMHSA grant funding received, political framing may still be a factor in this discrepancy.

A strong, positive correlation between the number of substance abuse facilities with opioid use disorder programs in a state and the raw number of overdose deaths in that state suggests that facilities are developed in states as a response to overdoses. The positive correlation shows that these two variables are increasing together, so as the number of overdoses rises, the number of facilities with treatment programs rises as well. Further data over several years would be necessary for broader conclusions on the relationships between facilities and overdoses. Ideally, over time, this will turn into a negative correlation. A negative correlation between these two variables would suggest that an increasing number of facilities with opioid use disorder programs is correlated to a lower amount of overdose deaths. This would suggest that treatment accessibility and resources are expanding and effectively mitigating overdose deaths.

Education and training programs

Education and training programs focus almost exclusively on emergency medical responders' distribution of naloxone in response to an opioid overdose. Widespread naloxone distribution training is vital for emergency responders, especially given that individuals who die from opioid overdoses are highly likely to have a history of hospitalization involving opioids (Feinglass 2021). Proper training for overdose response can mitigate the increasing rates of opioid-related overdoses, however, this is a short-term solution. Addressing overdoses only in emergent, life-or-death situations is a downstream solution to a much larger public health crisis. This is the shortfall of the 2021 SAMHSA education and training grant awards. Investing in training across the healthcare system to include addiction training for more healthcare personnel could begin to address the deeper facets of the opioid crisis.

Healthcare industry employees need to have increased education and training on opioid-related risk factors and appropriate interventions for individuals with opioid use disorder. Education and training grants account for 43% of total grant awards to healthcare organizations, and this funding could be allocated more effectively. Given the history of hospitals and clinical healthcare providers perpetuating the widespread impacts of the opioid crisis, opioid risk and addiction training are necessary in these settings. Hospital employees are cited as recently as 2020 saying hospital infrastructure and protocols contribute to the continuously rising rates of the opioid epidemic (Mazurenko 2020). This highlights the need for opioid-related training and education programs beyond the scope of emergency distribution of naloxone.

Training programs in hospitals should include prioritizing patient-centered care. Emergency department staff have a history of prescribing opioids for pain as a way to discharge patients from the hospital quickly (Mazurenko 2020). Establishing protocols including questions to ask patients to assess the severity of pain, history of addiction, and alternative treatment options would avoid unnecessary prescription of opioids for pain management.

These conversations with patients can also include discussing the root causes of the pain they are experiencing as opposed to simply giving patients drugs and discharging them. That approach to care is likely to lead to the future care for the same problem. While determining the root cause of the pain may add time to the treatment

process in the short term, it would reduce the number of individuals who are exposed to opioids through the healthcare system and therefore reduce the risk of opioid-related overdoses that the healthcare institution would respond to in the future.

Over time, increased funding to standardize education and training programs will allow for effective responses to opioid use disorder across the country. This will also encourage upstream interventions in areas that currently rely on downstream interventions. Implementing new training to address earlier stages of opioid use disorder, before emergency responders have to intervene after overdoses, will begin the implementation of upstream interventions in new areas.

Prevention programs

The vast majority of 2021 SAMHSA grants in the prevention category were allocated to state governments. SAMHSA grants require an organization to apply for them and since 94% of prevention grants were allocated to state governments, states receiving prevention grants have to actively apply for funding. States are more likely to apply for grants to fund prevention programs in areas where the opioid epidemic is framed as a public health crisis (Laugesen 2020). This further perpetuates the disparities in access to resources for opioid use disorder between states. Since state government agencies are nearly the exclusive recipient of prevention grants, this results in a lack of funding allocated to states not applying for prevention programs from SAMHSA.

Additionally, consistent and reliable funding is the major barrier to sustainable programs addressing opioid use disorder (Caton 2020). Relying on state governments to apply for and allocate consistent funding for prevention grants could contribute to this barrier. Since a state's response to the opioid epidemic is heavily influenced by public discussion and political discourse, changes in political leadership have the potential to halt funding to these programs (Weiss 2021). Additionally, as political leadership changes, funding may be pulled from programs like opioid use disorder prevention. Agencies may not continue to apply for grants as faced with other priorities designated by the political leadership. This all culminates in inconsistent funding over time.

Prevention programs address only prescription opioid use, leaving heroin and fentanyl out of the picture. Fentanyl is the number one cause of opioid-related overdose deaths, yet no prevention program funded by 2021 SAMHSA grants addresses fentanyl exposure. Fentanyl test strips have been proven to be an effective resource in preventing overdose deaths for individuals using illicit opioids (Samuels 2019), however, they are expensive. Allocating prevention funding to programs that distribute fentanyl test strips would have a high potential for reducing the number of overdose deaths related to fentanyl. These test strips allow individuals to test a small amount of the drug of choice before use so they can be aware of whether their drugs are laced. Harm reduction approaches all substance use disorders as a treatable illness as opposed to an ongoing decision. With this in mind, creating accessible resources to keep these individuals alive and connected with community resources is the intermediary step between drug use and treatment.

Further developed prevention programs should include restrictions on when and why physicians can prescribe opioids for pain, as well as addiction education specifically for at-risk youth. The Strategic Prevention Framework for Prescription Drugs 2021 grant award had an element of in-school education about opioid use disorder and addiction risk. Expanding on this programming and widespread implementation, especially in states experiencing higher crude rates of opioid-related overdose deaths may assist in decreasing overdoses and rates of addiction over time.

There are massive opportunities for disparities in funding allocation when state governments are responsible for applying for federal funding. Given that the financial commitment to addressing opioid use disorder is higher in states with Democratic leadership (Laugesen 2020), relying on state governments to implement these programs will ultimately result in disparities in access between states. States receiving less funding for prevention programs due to prevention funding being allocated almost exclusively to state governments will see addiction rates continue to increase, which will lead to opioid-related overdose deaths increasing as well.

Treatment programs

Grant programs addressing opioid use disorder treatment were the major priority of 2021 SAMHSA opioid grant funding. Treatment grants account for 67% of total 2021 funding. This speaks to the widespread need for treatment programs and resources across the country.

Nonprofits face the largest burden of care in terms of opioid use disorder treatment. The only grants allocated to nonprofit organizations were for treatment programs. This puts far more of the burden of implementing treatment programs on nonprofit organizations. These organizations typically aim to offer more accessible treatment and work within communities to establish relationships and build trust with individuals who rely on their resources. Many nonprofits rely on grants like these to keep their organizations open and functioning. Community-based substance abuse organizations are historically understaffed and underfunded, limiting the scope of care they can provide.

The Medication-Assisted Treatment grant program accounted for over a third of the total 2021 grant awards. Since 87% of counties in the United States had a shortage of opioid use disorder programs as of 2015 (Kleinman 2020), allocating the most funding to MAT in terms of dollar amount and number of grants is a promising step toward increasing accessibility of long-term and effective opioid use disorder treatment across the country. In 2018, only 2% of opioid use disorder facilities offered treatment plans with methadone, buprenorphine, and naltrexone (Sederer 2018). This speaks to the need to fund multiple different treatment plan options per site to meet the needs of all individuals.

Within the MAT grant award program, Native American Tribes received significantly larger MAT grant awards on average than other recipients. Since Native tribes have been disproportionately impacted by the opioid epidemic, these funds will allow these communities to establish effective treatment programs tailored to communities. Combined with several millions of dollars received from pharmaceutical lawsuits (Hoffman 2022), Native American Tribes will be able to begin implementing accessible treatment programs.

Potential biases and limitations

The scope of the data collected in this research presents limitations. The dataset of grant awards captures only one year and one grant-distributing agency. Further investigation into prior and future years of SAMHSA opioid-related grant program awards would create a more long-term data set, allowing for further analysis. Looking at just one year of grant awards limits the analysis possibilities, as trends over time cannot be analyzed and future predictions cannot be made. Additionally, the scope of the data collection included only opioid-specific SAMHSA grant programs. Opioid-related overdose deaths and opioid use disorder may be addressed under substance use disorder grants more broadly and may receive funding from additional organizations both at the state level and federally. However, for the purpose of specificity, this research examined only 2021 grant programs explicitly targeting opioid-related overdoses and opioid use disorder.

There are no present conflicts of interest in this research.

CONCLUSION

Despite increased federal funding in the past several years, opioid-related overdose deaths have continued to rise. Disparities in federal grant allocation for opioid-related programs creates gaps in accessibility to programs between states. States receiving less funding for prevention, treatment, and education and training programs experience opioid-related overdoses at disproportionate levels relative to the size of their populations.

The existing interventions addressing opioid use disorder in the United States address the downstream consequences of opioid use. Programs like emergency naloxone training and Medication-Assisted Treatment are being funded at much greater amounts than programming aiming at combatting addiction from developing. All states, but especially states with high opioid-related overdose death crude rates per 100,000 people, lack comprehensive opioid-use disorder prevention programs. Prevention interventions need to target high-risk populations, like homeless individuals and neighborhoods with a high prevalence of low-income families to address risks associated with addiction and opioid use before addiction develops.

Limiting unnecessary exposure to opioids and implementing programs targeting communities at higher risk of developing an addiction are upstream interventions that will save states and hospitals money while decreasing overdose deaths due to fewer people using opioids. Upstream interventions are necessary to fill the gaps existing in funding allocation. Funding these kinds of programs may initially be more costly but will have long-term financial benefits by reducing the burden of opioid overdose on communities as a result of fewer overdose deaths. This multifaceted public health crisis needs accessible and widespread upstream interventions to begin to see opioid-related overdose deaths begin to decrease.

REFERENCES

- Caton, L., Yuan, M., Louie, D. *et al.* The prospects for sustaining evidence-based responses to the US opioid epidemic: state leadership perspectives. *Subst Abuse Treat Prev Policy* 15, 84 (2020). <https://doi.org/10.1186/s13011-020-00326-x>
- Centers for Disease Control and Prevention. (2021, March 3). *Drug overdose deaths*. Centers for Disease Control and Prevention. Retrieved December 28, 2021, from <https://www.cdc.gov/drugoverdose/deaths/index.html>
- Centers for Disease Control and Prevention. (2021). *Opioid Overdose Prevention in Tribal Communities*. Centers for Disease Control and Prevention. <https://www.cdc.gov/injury/budget/opioidoverdosepolicy/TribalCommunities.html>
- Centers for Disease Control and Prevention, WONDER. (2020). Multiple Causes of Death Data. *Centers for Disease Control and Prevention*. <https://wonder.cdc.gov/controller/datarequest/D77>
- Feinglass, J., Wang, J. A., Ye, J., Tessier, R., & Kim, H. (2021). Hospital Care for Opioid use in Illinois, 2016-2019. *The journal of behavioral health services & research*, 48(4), 597–609. <https://doi.org/10.1007/s11414-020-09748-8>
- Gallo, C., Abram, K., Hannah, N., Caton, L., Cimaglio, B., McGovern, M., & Brown, C. H. (2021). Sustainability planning in the US response to the opioid crisis: An examination using expert and text mining approaches. *PLoS one*, 16(1), e0245920. <https://doi.org/10.1371/journal.pone.0245920>
- Gross, J., & Gordon, D. B. (2019). The Strengths and Weaknesses of Current US Policy to Address Pain. *American journal of public health*, 109(1), 66–72. <https://doi.org/10.2105/AJPH.2018.304746>
- Haiven, M. (2018) Our Opium Wars, *Third Text*, 32:5-6, 662-669, DOI: 10.1080/09528822.2018.1559169
- High, P. M., Marks, K., Robbins, V., Winograd, R., Manocchio, T., Clarke, T., Wood, C., & Stringer, M. (2020). State targeted response to the opioid Crisis grants (opioid STR) program: Preliminary findings from two case studies and the national cross-site evaluation. *Journal of substance abuse treatment*, 108, 48–54. <https://doi.org/10.1016/j.jsat.2019.06.008>
- Kleinman, R. A., & Morris, N. P. (2020). Federal Barriers to Addressing the Opioid Epidemic. *Journal of general internal medicine*, 35(4), 1304–1306. <https://doi.org/10.1007/s11606-020-05721-5>
- Kral, A., Lambdin, B., Wenger, L., Davidson, P. (2020). Evaluation of an Unsanctioned Safe Consumption Site in the United States. *New England Journal of Medicine*. 383, 589-590. <https://www.nejm.org/doi/full/10.1056/NEJMc201543>
- Hoffman, J. (2022). Tribes reach \$590 million opioid settlement with J&J and distributors. *New York Times*. <https://www.nytimes.com/2022/02/01/health/opioids-native-american-tribes.html>
- Laugesen M.J., Patashnik, E.M.; Framing, Governance, and Partisanship: Putting Politics Front and Center in the Opioid Epidemic. *J Health Polit Policy Law* 1 April 2020; 45 (2): 365–372. doi: <https://doi.org/10.1215/03616878-8004958>
- Mazurenko, O., Andraka-Christou, B. T., Bair, M. J., Kara, A. Y., & Harle, C. A. (2020). Clinical perspectives on hospitals' role in the opioid epidemic. *BMC health services research*, 20(1), 521. <https://doi.org/10.1186/s12913-020-05390-4>
- McCance-Katz, MD. (2020). The National Survey on Drug Use and Health: 2019. *Substance Abuse and Mental Health Services Administration*. https://www.samhsa.gov/data/sites/default/files/reports/rpt29392/Assistant-Secretary-nsdub2019_presentation/Assistant-Secretary-nsdub2019_presentation.pdf
- Netherlands, J., & Hansen, H. B. (2016). The War on Drugs That Wasn't: Wasted Whiteness, "Dirty Doctors," and Race in Media Coverage of Prescription Opioid Misuse. *Culture, medicine and psychiatry*, 40(4), 664–686. <https://doi.org/10.1007/s11013-016-9496-5>
- Office of The Press Secretary The White House (2016). President Obama Proposes \$1.1 Billion in New Funding to Address the Prescription Opioid Abuse and Heroin Use Epidemic. *Journal of pain & palliative care pharmacotherapy*, 30(2), 134–137. <https://doi.org/10.3109/15360288.2016.1173760>
- Pew Research Center. (2022). Party affiliation by state. *Pew Research Center*. <https://www.pewresearch.org/religion/religious-landscape-study/compare/party-affiliation/by/state/>
- Substance Abuse and Mental Health Services Administration. (2021). Fiscal Year 2021 Grant Announcements and Awards. *Department of Health and Human Services*. <https://www.samhsa.gov/grants/grant-announcements-2021>
- Substance Abuse and Mental Health Services Administration. (2019). National Survey of Substance Abuse Treatment Services: Data on Substance Abuse Treatment Facilities. *Department of Health and Human Services*. <https://www.samhsa.gov/data/data-we-collect/n-ssats-national-survey-substance-abuse-treatment-services>
- Samuels, E. A., McDonald, J. V., McCormick, M., Koziol, J., Friedman, C., & Alexander-Scott, N. (2019). Emergency Department and Hospital Care for Opioid Use Disorder: Implementation of Statewide Standards in Rhode Island, 2017-2018. *American journal of public health*, 109(2), 263–266. <https://doi.org/10.2105/AJPH.2018.304847>
- Sharareh, N., Sabounchi, S. S., McFarland, M., & Hess, R. (2019). Evidence of Modeling Impact in Development of Policies for Controlling the Opioid Epidemic and Improving Public Health: A Scoping Review. *Substance abuse: research and treatment*, 13, 1178221819866211. <https://doi.org/10.1177/1178221819866211>
- Sederer, L. I., & Marino, L. A. (2018). Ending the Opioid Epidemic by Changing the Culture. *The Psychiatric quarterly*, 89(4), 891–895. <https://doi.org/10.1007/s11126-018-9589-0>
- Singh, S., Kiessling, K., & Rhodes, J. (2020). Nonprofit Hospitals' Response to the Opioid Epidemic in Urban Communities: A Content Analysis of Hospitals' Community Health Needs Assessments and Implementation Strategies. *Journal of Public Health Management and Practice*, 26 (3), 243-251. doi: 10.1097/PHH.0000000000001101.
- Smith, K. P., Oman, R. F., Lu, M., Dawkins, A. D., Harding, R. W., Hepworth, K., & Wagner, K. D. (2021). The mobile emergency recovery intervention trial (MERT): Protocol for a 3-year mixed methods observational study of mobile recovery outreach teams in Nevada's emergency departments. *PLoS one*, 16(10), e0258795. <https://doi.org/10.1371/journal.pone.0258795>
- Weiss, M., & Zoorob, M. (2021). Political frames of public health crises: Discussing the opioid epidemic in the US Congress. *Journal of Social Science and Medicine*. 281. <https://www.sciencedirect.com.ezproxy.simmons.edu/science/article/pii/S0277953621004196?via%3Dihub>