



Identifying the Root Causes of Drug Overdose Health Inequities and Related Social Determinants of Health: A Literature Review

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Identifying the Root Causes of Drug Overdose Health Inequities and Related Social Determinants of Health: A Literature Review

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EXECUTIVE SUMMARY

Fatal drug overdoses have long been a public health crisis in the United States. From 1999 – 2018, nearly 450,000 people died from overdoses in the United States. (Mattson CL, Tanz LJ, Quinn K, Kariisa M, Patel P, 2021) In 2019 alone, there were 70,630 drug overdose deaths. (Centers for Disease Control and Prevention, 2021b) While public health efforts have brought attention to drug addiction as a disease and have improved access to substance use disorder (SUD) treatment and services, many health inequities have not been addressed.

To investigate this gap in knowledge, the Division of Overdose Prevention (DOP) and National Center for Injury Prevention and Control (NCIPC) at the Centers for Disease Control and Prevention (CDC) partnered with the National Association of County and City Health Officials (NACCHO) to conduct a preliminary literature review to inform internal DOP and NCIPC processes and future guidance for academia, state and local health departments, and CDC staff. The review sought to identify the scope of existing literature in response to the research question:

What are the root causes of health inequities of drug overdoses and the related social determinants of health (SDOH)?

This literature review was conducted as a descriptive review, a type of systematic literature review used for identifying patterns or trends in literature, (Lau & Kuziemsy, 2017) including academic and grey literature searches using PubMed, Google Scholar, and a Tailored Organization Search. The research team reviewed over 4,000 sources, ultimately identifying 263 sources that met the inclusion criteria.

Data were then extracted from sources using categories of root cause measures of health inequity based on the [Bay Area Regional Health Inequities Initiative \(BARHII\) framework](#) (Bay Area Regional Health Inequities Initiative (BARHII), 2015) for health inequities:

- Race
- Sex
- Age
- Gender
- Class
- Sexual orientation
- Social, economic, environmental, state, and local practices & policy
- Partner organization practices

Findings were also analyzed and outlined using the BARHII framework for health inequities, creating four main categories:

1. Social inequities (Upstream – Class, Race/Ethnicity, Immigration Status, Sex, Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, and Agender/Asexual Plus (LGBTQIA+) Status)
2. Institutional inequities (Upstream – Law and Regulation, Organizations, Media)
3. Living conditions (Upstream – SDOH: Physical Environment, Economic & Work Environment, Social Environment, Service Environment)
4. Individual level factors (Downstream – overdose, polysubstance use, co-morbidities, mortality)

Key findings:

1. Most sources focused on inequities along racial or ethnic lines.
2. Many demographic factors are being researched in silos without consideration for intersectional impacts on drug overdoses.
3. Policy was identified as a tool to change institutional-level factors that affect differences in overdoses.

“Healthcare systems, community leaders, and policymakers addressing the opioid epidemic should focus on upstream structural factors including education, economic opportunity, social cohesion, racial/ethnic disadvantage, geographic isolation, and life satisfaction.”
(Singh et al., 2019)

Recommendations and Conclusion:

Overall, this literature review concluded that more attention to upstream factors of drug overdose health inequities would likely have a positive effect on downstream factors including overdose. While this literature review provided a preliminary investigation into existing drug overdose health inequity literature, we recommend the following for future research:

1. Examining health inequities both within and across LGBTQIA+, adolescent, aging, gender-based, and immigrant populations.
2. Identifying underlying and historical root causes of health inequities, like slavery and native genocide as well as inequitable and unjust policies which have led to redlining, structural poverty and structural racism.
3. Examining social and institutional health inequities within the context of an interconnected system of upstream inequities.



Glossary

Definitions: The following definitions will be used for this literature review:

- **Health Disparities:** “Health disparities are preventable differences in the burden of disease, injury, violence, or in opportunities to achieve optimal health experienced by socially disadvantaged racial, ethnic, and other population groups, and communities.” (Centers for Disease Control and Prevention, 2017)
- **Health Equity:** “Equity is the absence of avoidable, unfair, or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically or by other means of stratification. “Health equity” or “equity in health” implies that ideally everyone should have a fair opportunity to attain their full health potential and that no one should be disadvantaged from achieving this potential.” (Chang, 2002)
- **Health Equity Lens:** “A tool for planning, decision-making and resource allocation that leads to more equitable policies, programs, and processes.” A health equity lens changes the way that decisions are made and “brings to focus the impact policies and practices have on shaping the economic, social and built environments which can lead to health inequities” [or health equities]. (Partnerships Division - Minnesota Department of Health, 2021)
- **Health Inequities:** “Differences in the distribution of disease, illness, and death that are systemic, patterned, unjust, actionable, and associated with imbalances in political power.” (Whitehead, 1992)
- **Inequality:** “Inequality of outcomes occurs when individuals do not possess the same level of material wealth or overall living economic conditions.” (Klein, Richard., Huang, 2011) Common areas of inequality include standards of living, such as inequalities in income/wealth, education, health, and nutrition.
- **Understanding Inequity vs Inequality:**
“The key distinction between the terms inequality and inequity is that the former is simply a dimensional description employed whenever quantities are unequal, while the latter requires passing a moral judgment that the inequality is wrong.” Inequity also implies a systemic, structural, or societal level cause for inequalities. (Arcaya et al., 2015)
- **Intersectionality:** “The interconnected nature of social categorizations such as race, class, and gender as they apply to a given individual or group, regarded as creating overlapping and interdependent systems of discrimination or disadvantage.” (Lexico, 2021)
- **Overdose:** “Injury to the body (poisoning) that happens when a drug is taken in excessive amounts. An overdose can be fatal or nonfatal.” (Centers for Disease Control and Prevention, 2021a)

- **Racial Justice:** “The systematic fair treatment of people of all races, resulting in equitable opportunities and outcomes for all. Racial justice—or racial equity—goes beyond “anti-racism.” It is not just the absence of discrimination and inequities, but also the presence of deliberate systems and supports to achieve and sustain racial equity through proactive and preventative measures.” (Racial Equity Tools, 2020)
- **Root Causes of health inequity:** Root causes of health inequity stem from the “intrapersonal, interpersonal, institution, and systemic mechanisms that organize the distribution of power and resources differentially across lines of race, gender, class, sexual orientation, gender expression, and other dimensions of individual and group identity” as well as “the unequal allocation of power and resources- including goods, services, and societal attention- which manifest in inequal social, economic, and environmental conditions.” (National Academies of Sciences Medicine and Engineering, 2017)
- **Social Determinants of Health (SDOH):** “The conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems.” (United States Department of Health and Human Services, 2020)
- **Justice-Involved populations:** “People in jails or prisons, the criminal justice–involved population includes people who are supervised by the community corrections system through probation or parole.” (Boutwell & Freedman, 2014)

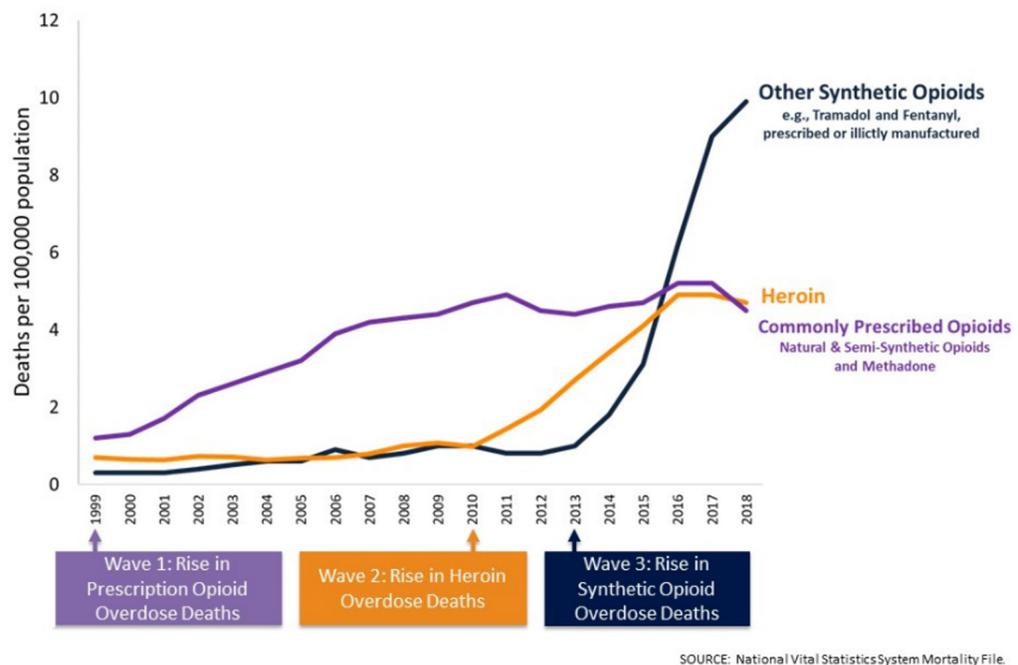


BACKGROUND

Drug overdose from substances such as opioids, cocaine, and psychostimulants, among others, is currently the leading cause of injury-related death in the United States. (Centers for Disease Control and Prevention, 2020a) In 2019 alone, 70,630 people died from a drug overdose. (Centers for Disease Control and Prevention, 2021b) While overdose deaths are preventable, barriers remain to comprehensive and effective overdose prevention. Understanding these barriers requires first understanding the drug overdose landscape, including the three waves of the opioid overdose crisis shown in Figure 1 below.

In the 1990s, the first wave was characterized by increased opioid prescribing and overdose deaths largely due to misuse of legal prescription opioids. (Centers for Disease Control and Prevention, 2020c) The second wave, beginning around 2010, was driven by increases in heroin-related opioid overdoses. Finally, the third wave, beginning around 2013, involved significant increases in overdose deaths due to synthetic opioids, specifically fentanyl. (Centers for Disease Control and Prevention, 2020c) During this wave, synthetic opioid-involved overdose deaths rose dramatically, increasing by 45.2% from 2016-2017 alone. (CDC National Center for Injury Prevention and Control, 2019)

Figure 1. Three Waves of the Rise in Opioid Overdose Deaths (Centers for Disease Control and Prevention, 2020c)



While the ongoing drug overdose crisis has primarily been fueled by opioid use, it is important to note that overdoses related to other drug categories are also on the rise. (National Institute on Drug Abuse, 2021) (Ruhm, 2019)

This topline data does not reflect variations in overdoses by region or other demographic information. Additionally, most research and programmatic efforts have focused on young and middle age White populations in suburban and rural areas. (Ruhm, 2019), (García et al., 2019), (Scholl et al., 2018) Information about how the drug overdose crisis has affected other populations (based on race, age, gender, etc.) is lacking in comparison. (James & Jordan, 2018) When racial inequities in overdose have been examined, findings indicate a knowledge gap and a need for more research in this area. For example, [Minnesota Department of Health's Race Rate Disparity in Drug Overdose Death report](#) found that Minnesota's overall drug overdose mortality rate masks racial inequities. (DeLaquil, 2020) The report also found that even though overdose rates increased for all racial groups, racial inequities in overdose also increased. (DeLaquil, 2020) These findings highlight how racial inequities can be easily overlooked and may not be immediately evident in statistical breakdowns of overdose rates, even though racial overdose inequities are worsening. The need to examine and understand overdose inequities extends beyond racial inequities to include other disproportionately affected populations.

Recognizing the need to better understand health inequities related to drug overdose, the Division of Overdose Prevention (DOP) and National Center for Injury Prevention and Control (NCIPC) at the Centers for Disease Control and Prevention (CDC) collaborated with the National Association of County and City Health Officials (NACCHO) to conduct preliminary research in this area through a literature review. The results of this literature review will be used by the Division of Overdose Prevention and National Center for Injury Prevention and Control to inform internal processes and future guidance.

Purpose: To conduct a literature review on the root causes of the health inequities of drug overdoses and related social determinants of health (SDOH) to inform future directions of academic, state, and local health departments, Centers for Disease Control and Prevention (CDC) staff and funded recipients.

Research Question: What are the root causes of drug overdose health inequities and the related SDOH?

METHODS

The literature review was conducted as a descriptive review, a type of systematic literature review used for reviewing bodies of knowledge for patterns or trends in terms of theories, methods, and findings. (Lau F, 2017) The search included both academic and grey literature searches, using three retrieval paths: 1) PubMed, 2) Google Scholar, and 3) Tailored Organization Search. These retrieval paths were identified to address the shortcoming of traditional academic literature reviews in capturing institutional reports and other grey literature that would be essential to answering the research question. (Hagen-Zanker & Mallett, 2013), (University of Toronto Libraries, 2019)

Research Question: What are the root causes of drug overdose health inequities and the related SDOH?

Key Words and Inclusion/Exclusion Criteria

Key words and inclusion/exclusion criteria were developed to ensure consistency across all three retrieval paths.

Key Words

A multi-step process was used to identify key words. First, four key concepts were identified directly from the research question: drug overdose, health inequities, root causes, and SDOH.

Free text terms, alternate words of phrasing for key concepts, were then included to capture where authors may refer to the same concept using different terms. (University of Tasmania, 2021) Free terms were identified by conducting a simple search for the four key concepts, and reviewing the titles, and key words for synonyms, alternative spelling variants, acronyms, abbreviations, laymen's terms, and alternative ways of ordering. (University of Tasmania, 2021)

The final list of key concepts and free text terms is included in Table 1.

Table 1: Key Words and Related Terms

DRUG OVERDOSE	HEALTH INEQUITIES	ROOT CAUSES	SOCIAL DETERMINANTS OF HEALTH
Opioid overdos*	Social inequit*	Rac*	Social determinant*
Illicit drug overdos*	Disparit*	Sex*	Determinant*
Prescription drug overdos*	Health disparit*	Gender	
	Inequit*	Class*	
Overdos*	Health inequit*	Sexual orientation	
	Equit*	Gender expression	
Fatal overdose epidemic	Health equit*	Social	
Nonfatal overdos*	mortality inequit*	Economic	
Poisoning		Environmental	

An asterisk () indicates where the PubMed “explode” feature was used to search for multiple variations on a term. Ex. “rac*” yields results for articles with key words “race,” “racism,” and “racial.” While this technique may also yield unrelated results (ex. “racecar”), these sources were removed from the final review through the screening process.*

Inclusion/Exclusion Criteria

The following search parameters were developed to structure the literature review searches and were applied to all three retrieval paths, except where noted:

- Language: English
- Publication Date: 2010 – 2020
- Location: Studies limited to the United States
- Relevance: Research Question
- Exclusion: Book reviews, blog posts, opinion pieces, editorials*
- Exclusion: alcohol, marijuana, tobacco, vaping

*Blog posts, opinion pieces, and editorials were included in the Tailored Organization Search as its purpose was to search the informal literature from leading overdose prevention and health equity organizations.

Document Retrieval and Review

Retrieval Path 1: PubMed Search

PubMed, a key repository of citations for biomedical, life science, and online books, was used to identify academic and peer reviewed sources related to the research question. A combination of the free text terms listed in Table 1 and controlled text terms was used to identify relevant articles in PubMed.

Controlled text terms referred to specific headings given to articles within databases to provide additional detail on article content and further enable searching. (University of Tasmania, 2021) Controlled text terms were specific to databases. The terms identified for the purpose of this review are Medical Subject Headings (MeSH terms) and are specific to PubMed. These were identified by imputing key concepts into the Advanced MeSH Search Builder. (National Center for Biotechnology Information, 2004)

Finally, to conduct the search in PubMed, Boolean operators were applied to the identified key words (Table 1), combined with identified MeSH terms and exclusion criteria to develop the final PubMed search string:

PubMed Search String: ((((((((((drug overdos*) OR illicit drug overdos*) OR drug overdos*) OR prescription drug overdos*) OR nonfatal overdos*) OR fatal overdose epidemic) OR poisoning) OR Drug overdose/epidemiology [MeSH]) OR Drug overdose/mortality [MeSH])) AND ((((((((((health inequit*) OR social inequit*) OR disparit*) OR health disparit*) OR inequit*) OR health inequit*) OR equit*) OR health equit*) OR mortality inequit*) OR social determinants) OR Health Status Disparities [MeSh]) OR Health Equity [MeSH]) OR Socioeconomic Factors/adverse effects [MeSH]) OR Social Determinants of Health [MeSH])) NOT ((tobacco OR vaping OR cigarette* OR electronic cigarette*)) Filters: Publication date from 2010/01/01

Retrieval Path 2: Google Scholar Search

Google Scholar was used as the second retrieval path to increase the breadth, relevance, topicality, and utility of the final review, as much of the material on this topic may be found outside of traditional peer reviewed channels. Relevant grey literature was identified and retrieved including, but not limited to, unpublished literature such as dissertations, institutional reports, white papers, and newspaper articles. (Hagen-Zanker & Mallett, 2013)

To conduct the search in Google Scholar, combinations of key words (Table 1) were manually tested to maximize identification of sources related to the research question.

Google Scholar Search String: ["drug overdose" AND "health equity" OR "social determinants of health" NOT (alcohol OR vaping OR tobacco OR e-cigarette)]

Retrieval Path 3: Tailored Organization Search

A Tailored Organization Search (TOS) or targeted website search identified grey literature from the “websites of organizations (ex. government, health organizations) that publish documents relevant to the research question.” (University of Toronto Libraries, 2019)

To conduct the TOS, organizations were identified through consultation with subject matter experts in drug use, overdose prevention, and health equity within NACCHO and at the CDC. [The full list of organizations included in this search can be found in Appendix D.]

Each identified organization’s website was then reviewed for materials relevant to the research question using one or more of the following search strategies: (University of Toronto Libraries, 2019)

- Manual Review of Site: For smaller websites and those with “Resource,” “Document Libraries” or other relevant webpages, a manual review was conducted of all listed sources.
- Database Search: If the website contained a document database with built-in search features, this was used to search for key words within the documents database.
- Search Function: The general search function was used to search for key words.

Search functionalities on many organizational websites were limited, necessitating that key words were kept simple to yield results. The following search key word combinations were derived directly from the key concepts and related terms identified in Table 1:

- “drug overdose” and “equity”
- “drug overdose” and “inequity”
- “drug overdose” and “social determinants of health”



Document Review

Results from all three retrieval paths were filtered using a two-tiered screening process to identify the final literature search sources. Research methods were not assessed as part of this screening process. In preliminary searches pertaining to this research question, sources span a wide range of disciplines, in which drawing comparison across methodologies would be subject to reviewer bias as well as lead to the exclusion of relevant findings. (Hagen-Zanker & Mallett, 2013)

1. Primary Screen: In a first pass, all literature search source titles, publication titles, and publication dates were reviewed against the inclusion and exclusion criteria. If additional information was necessary, abstracts were reviewed.
2. Secondary Screen: A second round of more in-depth screening was conducted to review source abstracts, and if abstracts were unavailable, full text, for their relevance to the research question. A necessary step as some sources included some key words in their title and text but did not directly pertain to the research question. A resource was deemed relevant if it highlighted a principle, strategy, outcome, or factor related to health equity/inequity within the context of drug overdose and related SDOH as defined in the Glossary. Non-applicable publications were eliminated.

A total of 4,053 sources were assessed as part of the Document Review, with a total of 263 sources identified for the final literature review. A full breakdown of results by retrieval path is included in Table 2.

Table 2: Retrieval Path & Screening Results

RETRIEVAL PATH	TOTAL RESULTS	PRIMARY SCREEN	SECONDARY SCREEN
PubMed	301	102	74
Google Scholar	911	445	123
TOS	2,841	78	66
All Searches	4,053	625	263

Analysis

The goal of this analysis was to extract appropriate data from the identified resources to subsequently order, code, categorize and summarize into a “unified conclusion about the research problem.” (Whittemore & Knafl, 2005) A “constant comparison” method was used to extract data into systematic categories, for deeper analysis, theming, and conclusions. (Whittemore & Knafl, 2005) The constant comparison method is a cross-case analysis that follows four distinct stages: “1. Comparing incidents applicable to each category, 2. Integrating categories and their properties, 3. Delimiting the theory, and 4. Writing the theory.” (Dye et al., 2000) This method was chosen for its compatibility with the integration of varied sources from a wide range of resource types.

All data that addressed root causes of overdose or related SDOH was extracted for further analysis. Sources were reviewed for content related to the research question. Data were abstracted using a two-step process. First, key findings and quotes related to the research question were extracted. Second, articles were coded with key themes based on concepts identified during the development of the research questions (Table 3). Articles could have multiple codes as coding key themes was not mutually exclusive.

Table 3: Key Themes

CATEGORIZATION	RELATION TO RESEARCH QUESTION
Root Cause	Derived from the research question, “ <i>What are the root causes of drug overdose health inequities and the related SDOH?</i> ” Applied to articles discussing institutional or social inequities related to inequities in overdose.
Race/Racism/Racial Sex Age Gender Class Sexual Orientation Social Economic Environmental	This literature review focuses on the research question, “ <i>What are the root causes of drug overdose health inequities and the related SDOH?</i> ” To identify the root causes, the SDOH were used to categorize source findings that included race, sex, age, gender, class, sexual orientation, and gender expression. Three larger categories of social, economic, and environmental factors were also used to capture additional factors. While this list did not cover the extent of applicable social determinants, they were identified to provide an initial insight into the available literature on this topic.
State/Local Practices Partner Practices	Included to capture any emerging practices by state or local health departments and/or partners (healthcare, social services, etc.).

Using an Excel spreadsheet, data were sorted by the key themes listed in Table 3. This allowed the research team to observe patterns and relationships across categories. This process yielded additional themes related to root causes and the social determinants: “health care”, “law and policy”, and “education.” Cross-cutting themes also emerged during this phase of analysis: “reciprocity” or “intersectionality” defined as the overlapping, and often reciprocal effects of each individual theme on the other, and “reinforcing impacts” defined as the nested layers of institutions, laws, and society that affect individual behaviors.

Theoretical Frameworks

To better connect these emerging themes and answer the research question, two frameworks were adopted for analysis.

1. The framework of intersectionality was adopted to integrate how multiple interconnected factors influence experiences and outcomes. (Crenshaw, 2015)
2. The BARHII framework was adopted to connect the multiple layers of root causes and SDOH, and their subsequent nested effects on the individual. (Bay Area Regional Health Inequities Initiative, 2020)

Intersectionality Framework

In examining the emerging categories, it was quickly apparent that there are multiple, often overlapping SDOH that affect drug overdoses, both directly and indirectly. Thus, the concept of intersectionality was introduced to help explain why and how these multiple overlapping factors converge to affect inequities in drug overdose.

The term was originally developed by Professor Kimberlé Crenshaw in the 1980s, to describe the intersections between race and gender and subsequent experiences of discrimination for Black women. (Crenshaw, 2015) The framework of intersectionality has since been used and expanded by scholars to describe the intersections of multiple identities:

“Intersectionality is a theoretical framework that posits that multiple social categories (e.g., race, ethnicity, gender, sexual orientation, socioeconomic status) intersect at the micro level of individual experience to reflect multiple interlocking systems of privilege and oppression at the macro, social-structural level (e.g., racism, sexism, heterosexism).” (Bowleg, 2012)

Incorporating intersectionality as a lens to examine the root causes of overdose is an important means to observe and analyze “power imbalances, and the tools by which those power imbalances could be eliminated altogether.” (Coaston, 2019)

BARHII Framework

The BARHII framework is a “conceptual framework that illustrates the connection between social inequities and health and focuses attention on measures which have not characteristically been within the scope of public health department epidemiology.” (Bay Area Regional Health Inequities Initiative, 2020)

The BARHII Framework describes six levels that lead to health inequities on an upstream-downstream spectrum, represented by the grey boxes in Figure 2. Measures of social and institutional inequities (farthest “upstream” or to the far left in Figure 2), capture the root causes of health inequities. These upstream causes subsequently influence downstream factors, including living conditions, which align with the SDOH defined by this report (see “[Glossary](#)”). Finally, the BARHII framework demonstrates how root causes and living conditions directly influence individual risk behaviors, disease, and injury, and eventually mortality, positing that these downstream conditions are symptoms of upstream health inequities.

The BARHII model’s six levels, and subcategories, were aligned with themes as identified through the initial phases of analysis (Table 4). This report is structured using the BARHII model and the final set of themes listed in Table 4.

Figure 2. Bay Area Regional Health Inequities Initiative (BARHII) Public Health Framework for Reducing Health Inequities Framework (BARHII framework) (Bay Area Regional Health Inequities Initiative, 2020)

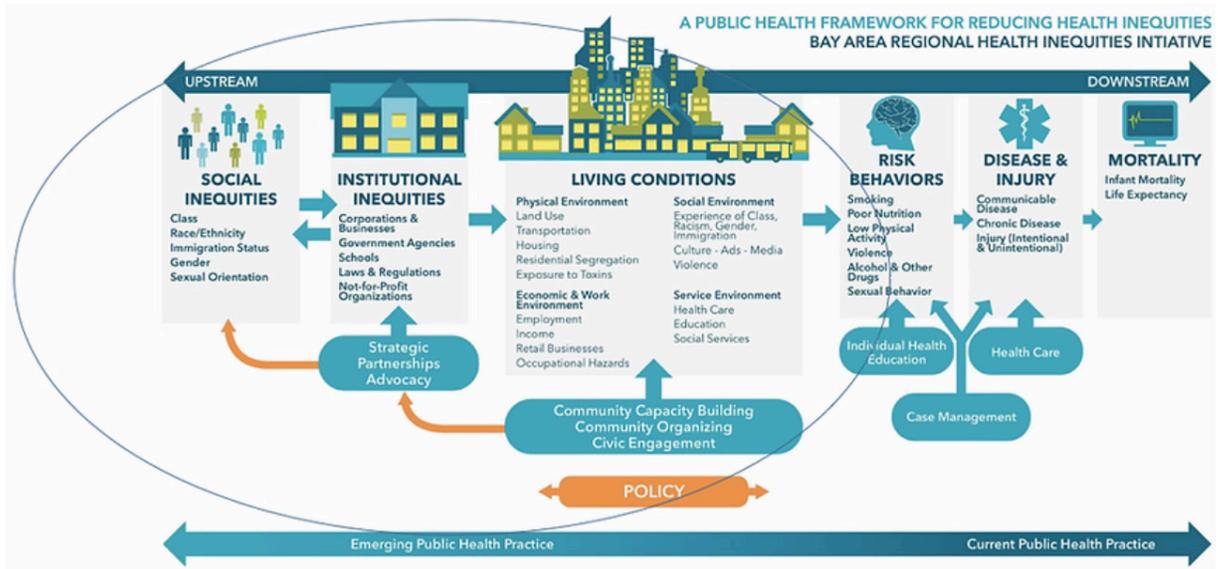


Table 4: Identified Themes for Analysis

BARHII COMPONENT	INITIAL ANALYSIS THEMES	FINAL THEMES
Social Inequities	Root causes, Race/Racism/Racial, Sex, Age, Gender, Class, Sexual Orientation	Class, race, immigration status, gender, sexual orientation
Institutional Inequities	Root Causes, Law and Policy, Education	Law and regulation, organizations, media narratives
Living Conditions	Social, Economic, Environmental, Healthcare	Physical Environment, Economic & Work Environment, Social Environment, Service Environment
Individual level factors	Outside of scope of research question	N/A
Action Levers	State/Local Practices, Partner Practices	State/Local Practices, Partner Practices
Upstream-Downstream Spectrum	Reinforcing Impacts	Applied to analysis through use of BARHII model
N/A	Intersectionality	Applied as cross-cutting lens for analysis

Two unique factors of the BARHII framework made it ideal for answering this research question. First, the BARHII model was unique among public health models for its explicit focus on upstream root causes. Many public health models focused on living conditions or policies without explicitly examining the role of social and structural inequities in shaping those conditions or policies. As the purpose of this literature review was to examine the root causes of overdose inequities, the BARHII model was uniquely suited amongst public health frameworks to help us answer this question. Second, BARHII integrated potential levers for action at each level, as represented by the upward arrows across the bottom of the model. This unique feature of BARHII connected root cause themes identified through this analysis with the themes of “State/Local Practices” and “Partner Practices” identified throughout this review in call-out boxes.

Limitations

This review was meant to be a preliminary review of existing literature on drug overdose health inequities. Topics of drug overdose, health equity, and SDOH are expanding and complex in nature. In the review process, a limitation of the use of the BARHII framework was noted as deeper root causes such as structural racism, sexism and structural poverty, as well as the historical injustices and policies which reenforce them are not comprehensively addressed within the framework. Additionally, due to resource restrictions, saturation was not reached. Therefore, further research is recommended. See [conclusions](#) and [recommendations](#).



LITERATURE REVIEW

Root Causes of Drug Overdose Inequities

The root causes of health inequities are numerous and complex, including intrapersonal, interpersonal, institutional, and systemic factors that operate via systems and structures, such as racism, sexism, classism, homophobia, transphobia and xenophobia, among others. These root cause systems create disparate power distribution across race, gender, class, sexual orientation, gender expression, and many other demographics. In alignment with the BARHII model, this literature review identifies social and institutional root cause categories that then affect living conditions (SDOH) and jointly create the context that affects individual level factors.

Figure 3. Literature Review Findings Categories

ROOT CAUSES OF HEALTH INEQUITIES:

SOCIAL INEQUITIES	INSTITUTIONAL INEQUITIES	SOCIAL DETERMINANTS OF HEALTH
<ul style="list-style-type: none">• Class• Race/Ethnicity• Immigration Status• Gender• Sexual Orientation	<ul style="list-style-type: none">• Law and Regulation• Organizations• Media: Dominant Narratives	<ul style="list-style-type: none">• Physical Environment• Economic & Work Environment• Social Environment• Service Environment

Social Inequities

Social inequities are inequities in power and wealth that materialize in differences including but not limited to class, race/ethnicity, immigration status, gender, and sexual orientation. This section explored literature review findings related to these topic areas.

“Social and community-level measures of structural deprivation, acceptance and/or denial of the opioid epidemic, community engagement and development, social support, and social depression are important for future research and programmatic efforts...” (Dasgupta et al., 2018)

Class

Key Themes: Higher overall rates of opioid-related deaths were associated with neighborhoods or communities facing higher poverty rates or economic hardship.

Class, referring to socio-economic status, is defined by education, income, and occupation. (Adler & Newman, 2002) Through a review of 38 studies, class inequities were captured both in terms of how an individual experiences discrimination and differential experiences due to their class as well as how economic inequities drive overdose rates in specific jurisdictions at the community or population level.

For instance, a recently published study on opioid-related overdose deaths by race and neighborhood economic hardship in Chicago found that, compared to national findings, Chicago had both a higher rate of opioid-related overdose death and a markedly different distribution by demographics. The Chicago Department of Public Health analyzed fatal overdoses by level of neighborhood economic hardship. The highest rate of opioid-related deaths occurred in neighborhoods with high economic hardship (36.9 per 100,000 population) compared to medium- (20.5 per 100,000 population) and low- (12.3 per 100,000 population) hardship neighborhoods. (Rushovich et al., 2020) On an individual level, class was found to affect the types of drug overdose experienced. (Bohnert, Amy., S.B., Nandi, Arijit., Tracy, Melissa., Cerda, Magdalena., Tardiff, Kenneth J., Vlahov, David., Galea, 2011) A study of drug overdose in San Francisco found that “decedents in high-poverty areas were significantly more likely to die from methadone and cocaine, whereas individuals from more affluent areas were more likely [to] die from oxycodone and benzodiazepines”. (Visconti et al., 2015)

Overall, data indicated that lower class populations were positively correlated with higher rates of drug overdose. Sources did not further explore the cause of these findings. However, economic policies have known direct impacts upon aspects of class and economic hardship. See [Law and Regulation](#).

Race/Ethnicity

Key themes: An examination of health inequities by race across 92 different studies identified an underrepresentation of drug overdose effects on populations of color and a lack of acknowledgement of historically racist responses to overdose, such as the criminalization of drug use.

Media attention may lead people to believe that White populations are uniquely experiencing increases in overdose rates, however, death rates have risen for all populations, including African American/Black, Latinx, American Indian/Alaskan Native (AI/AN), Asian-American, and Pacific Islander populations. Although the highest overdose death rates are in White populations in the United States, death rates for Black, Indigenous, and People of Color (BIPOC) communities are on the rise. (Kunins, 2020)

The concept of “deaths of despair” has been attributed by media outlets to White populations, particularly those in the Rust Belt and Appalachian regions. Not only is this phenomenon not as recent as media coverage would suggest, but it is also demonstrably not limited to White Americans alone. In *America’s declining well-being, health, and life expectancy: Not just a White problem*, authors state that “the decline in America’s health... has long been hypothesized to be attributable to an array of worsening psychosocial problems that are not specific to Whites. To test some of the dominant hypotheses, we show how various measures of despair have been increasing in the United States since 1980 and how these trends relate to changes in health and longevity. We show that mortality increases among Whites caused by the opioid epidemic come on the heels of the crack and HIV syndemic among Blacks. We believe that the attention given to Whites is distracting researchers and policymakers from much more serious, longer-term structural problems that affect all Americans.” (Muennig et al., 2018) Additional findings about “deaths of despair” and related media narratives can also be found in the *Institutional Inequities* section.

An outcome inequity between White populations and BIPOC communities is that “opioid overdose and general substance use responses are not reaching communities of color. Now that the current opioid overdose epidemic is affecting mostly White, rural populations, policymakers are feeling significant political and social pressure to do something about it.” (Weerasinghe et al., 2020) The increased preference for criminalization over substance use prevention, harm reduction, treatment, and recovery among impacted BIPOC populations is due to negative narratives misrepresenting these communities as immoral. (Kunins, 2020) Meanwhile, these same prevention, treatment and recovery responses primarily benefit White populations. The resulting inequity in responses to opioid overdose between White and BIPOC communities relates to service environments, but highlights a larger, societal lack of urgency in responding to crises affecting BIPOC populations. However, this lack of urgency and resulting inequities take root in historical and contemporary policies that have helped to shape today’s responses. See [Law and Regulation](#).

Immigration Status

Key Themes: Sources did not identify findings related to drug overdose health inequities and immigration status explicitly, indicating a potential literature gap.



Gender

Key Themes: Some sources found differences in female opioid use rates and likelihood to develop substance use disorders compared with male populations.

In 37 reviewed sources with findings related to sex and/or gender, wherein gender was predominantly understood in terms of sex or gender assigned at birth, there were few, indicating a likely gap in the literature. The few relevant sources indicate that females are more likely to experience chronic pain and use prescription opioid pain medications for longer periods and in higher doses than males. (Campbell et al., 2010) Furthermore, females may be more susceptible to craving and relapse cycles of addiction than males. (National Institute on Drug Abuse, 2020)

In one study of adolescents, it was found that adolescents who experienced a non-fatal overdose were more likely to be female and less likely to have been prescribed medications for opioid use disorder. (Chatterjee et al., 2019) The study also suggests that a history of non-fatal overdose should receive greater consideration as a factor for starting evidence-based treatment. (Kunins, 2020)

LGBTQIA+ Discrimination

Key Themes: The effects of stigma and discrimination on LGBTQIA+ populations are associated with elevated drug overdose rates. (Faces & Voices of Recovery, 2019)

Heteronormativity is the explicit or implicit belief or promotion of heterosexuality as the 'norm' or preferred sexual orientation. (Duncan et al., 2019) Cis-normativity is the explicit or implicit belief or promotion of cisgender individuals as the 'norm', which denies the existence of transgender, non-binary, or other gender variant people. (Worthen, 2016) Heteronormativity and cis-normativity cause inequities among LGBTQIA+ populations, as these beliefs deny their existence. (Kesha Baptiste-Roberts, Ebele Oranuba, Niya Werts, 2017)

Among the studies reviewed, 20 focused on gender, 6 on sexual orientation and 3 on gender expression. Compared with just 9% of the total population, an estimated 30% of LGBTQIA+ individuals face some form of addiction. (Faces & Voices of Recovery, 2019) LGBTQIA+ communities are at higher than average risk among all populations for addiction due to increased stigma and discrimination when compared with heterosexual and cisgender populations. (Faces & Voices of Recovery, 2019)

One study, which examined the multiple marginalized identities of bisexual youth, comparing differences among race and bisexuality, found that while bisexual youth had higher substance use than their heterosexual peers, (Feinstein et al., 2019) there were significant differences across gender and race among bisexual youth for illicit drug use. Specifically, "Black bisexual female youth were less likely to report other illicit drug use than White bisexual female youth." (Feinstein et al., 2019) These findings suggest that while experiences of stigma and discrimination may be universal, these must be interpreted through the lens of multiple and intersecting identities.

For example, Lesbian, Gay, and Bisexual (LGB) adults have elevated rates of lifetime and past-year opioid misuse compared to same-gender heterosexual adults. In addition, bisexual women show inequities in high-risk injection use and Opioid Use Disorder

and are thus at higher risk. Overall, “opioid misuse inequities among LGB adults are of substantial concern given the resultant elevated risk for fatal and non-fatal opioid overdose.” (Schuler et al., 2019)

Another study suggested “that transgender adolescent girls and young women have similar prevalence of lifetime nonmedical prescription opioid use compared with the US general population prevalence of 12.5%. These findings may serve as a call-to-action for public health surveillance studies and evidence-based interventions to be comprehensively tailored to examine and respond to specific trends of substance use, particularly opioid use disorder, among transgender populations.” (Restar et al., 2020)

Moreover, there exists a gap in data to fully examine the effects of intersecting identities and their impacts on drug use and overdose within the LGBTQIA+ community (Centers for Disease Control and Prevention, 2016): [“Drug use among gay and bisexual \[cisgender\] men may be a response to homophobia, discrimination, or violence they experience as a result of their sexual orientation.”](#) (Centers for Disease Control and Prevention, 2016) More research needs to be conducted to examine the gaps in research regarding drug overdose in LGBTQIA+ communities.



Field Example:

Making Your Recovery Space More LGBTQIA+-Inclusive (*Faces & Voices of Recovery, 2019*)

- Do not assume an individual's sexual orientation or their gender. You cannot visibly see sexual orientation or gender identity; you can only see gender expression.
- State your own pronouns when you introduce yourself and encourage other group members to do the same, especially if they are cisgender. For example: "I'm Liv. My pronouns are she, her, hers." This creates an inclusive community and lets transgender and nonbinary people know you are an ally.
- Avoid heteronormative clichés like "Boys will be boys" or "Man up"
- Consider reviewing literature and change any gendered pronouns to neutral "they/them/theirs."
- Be conscious of your privilege around access to healthcare, housing, education, and other facilities and resources. Do not assume that everyone has the same opportunities.
- Advertise your group on the meeting schedule as LGBTQIA+-affirming and do not share images that are heteronormative, cisnormative, or clearly gendered. Try to represent equity and inclusion in choosing images.
- Consider renaming bathrooms to be gender neutral.
- Do not silence an individual's experience relating to their sexual orientation and be mindful that they may have experienced prejudice and other harms as a result. These types of stressors are just as valid as any other.

Field Example:

Making Your Recovery Space More Trauma Informed (*Faces & Voices of Recovery, 2019*)

- Educate yourself about trauma and practice holding a trauma-informed space.
- When holding meditations, provide a space that gives people more control and feels less restrictive so that they have the option of keeping their eyes open and moving around if they desire to do so.
- Announce at the beginning of the meeting where the exits are and make it clear that if anyone feels uncomfortable at any time, they are free to take a time out and leave the room.
- Ask members to be conscious about sharing traumatic events and that they may be triggering for others.
- Recognize that there are a variety of factors which contribute to how, when and how much a person may share. To accommodate this, consider setting aside a specific time during the meeting for people who may find it hard to share to ensure all voices have an opportunity to be heard.

Institutional Inequities

Institutional inequities result from differential power structures that are introduced and upheld by people through systemic biases in policies and practices. (Bay Area Regional Health Inequities Initiative, 2020), (Schuler et al., 2019), (Restar et al., 2020), (Weinstein et al., 2017) These power structures and systems include racism, homophobia, transphobia, xenophobia, and classism. All forms of institutional inequities can be found in governmental structures. These institutional inequities, along with social inequities, as previously described, represent the root causes of drug overdose. (Weinstein et al., 2017) These inequities are self-reinforcing, with institutional policies and practices reflecting social level inequities and subsequently magnifying and perpetuating them through their institutionalization. (Weinstein et al., 2017)

This section was organized into three key themes or areas of institutional inequities. Two were directly derived from subcategories of institutional inequities described in the BARHII framework: (1) law and regulation, and (2) organizations, which combined the subcategories of businesses, government entities, and not-for-profits. (Bay Area Regional Health Inequities Initiative, 2020) A third, cross-cutting, theme of (3) media narratives was identified as an institution whose policies, practices, and influence permeate across all social and institutional inequities. (Bay Area Regional Health Inequities Initiative, 2020) While media narratives were traditionally described in the BARHII model under living conditions, for the purpose of this review it was re-classified as a root cause. This is due to the nearly universal influence that media narratives have across categories represented within this report as well as the fact that media is a large, well-established, and far reaching institution.

Law and Regulation

Key Themes: Policies and regulations directly affect the physical, economic, social and service environments.

Laws and regulation are the codified standards through which governments, organizations, and social organizations function and an important root cause and determinant of health. (Davis et al., 2017) In describing laws and regulation as root causes of inequities in overdose, it is important to restate that laws and regulations, which were created and upheld by individuals, are deeply intertwined with the biases, prejudice, and discriminations described in the social inequities section.

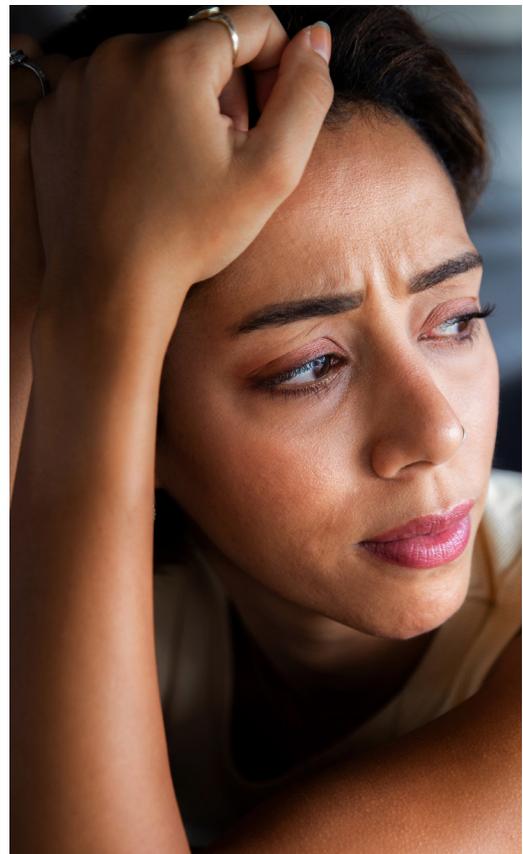
Health care policy emerged as one area within law and regulation affecting overdose inequities. Until the passage of the Mental Health Parity and Addiction Act in 2008, insurance companies could deny coverage for needed mental health and substance use treatments. (National Academies of Sciences, 2016) Despite the passage of this law, barriers still exist to achieving true parity for mental health and substance abuse. In American Indian/Alaskan Native (AI/AN) communities, treatment for OUD is often limited due to underfunding of Indian Health Services (IHS), and an overall lack of buprenorphine prescribers within IHS. (Venner et al., 2018) Despite being referenced in several of the findings, health care policy was not explored in-depth.

Field Example:

Healthcare Funding as an Equity-driven Policy Solution (*Human Impact Partners, 2012*)

Human Impact Partners in partnership with WISDOM, a statewide congregation-based community organizing network campaigning to cut Wisconsin's prison population in half by expanding access to treatment programs, conducted a Health Impact Assessment (HIA) of the public health impacts of increasing funding to \$75 million a year for Wisconsin's treatment and diversion programs. Drawing from state and local diversion program data, as well as focus groups with returning citizens, their families, and officials from law enforcement, judicial and public health systems, they found evidence that increasing funding for alternatives to incarceration would have several favorable outcomes. This included a reduction in the prison population and crime as well as lower recidivism and strengthen families by preventing the incarceration of up to 1600 parents a year. The study also found that the state would save \$2 for every dollar spent on alternative treatment programs, as treatment is one-fourth the cost of jail.

Economics have direct effects on the known determinants of drug overdose, including the distribution of housing, education, and other social structures and supports. (Carrière et al., 2018) Current economic policies have failed to stem the rising gap in income inequality, further damaging communities already experiencing multi-generational trauma and economic stress. (Burriss, 2018) In order to truly address the economic drivers of overdose, policies are needed to examine increasing economic inequality through tax codes, school funding, college access and other social investment. Like healthcare policy, economic policy, while appearing in the literature, was not explored in-depth, though impacts of economic policy and increasing economic inequality are described in the Social Determinants of Health section of this report.



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Possibly the greatest policy focused discussion within the literature was on the role of drug criminalization and the war on drugs, which disproportionately affected, and continues to affect, low-income and communities of color, namely Black communities. (National Academies of Sciences Engineering and Medicine, 2018) The “War on Drugs” was implemented in the 1980s as a response to rising cocaine use and was codified in the 1986 Anti-Drug Abuse Act. The Anti-Drug Abuse Act instituted harsh penalties for the use, possession, and sale of drugs, and pushed for incarceration as a solution to the emerging cocaine problem. (Santoro & Santoro, 2018) Among the provisions within the Act, it included harsher sentencing for the possession of crack cocaine over powder cocaine, as well as overall harsher criminalization of crack cocaine users overall. This provision specifically targets communities of color, mostly Black and Latinx, who were more likely to use cheaper crack cocaine, over the White population, who were more likely to use the more expensive powder cocaine. (Walker & Mezuk, 2018) The Anti-Drug Act and the overall moral condemnation of drug use characterized by the war on drugs, is echoed in racialized drug policies implemented across the national, state, and local level. (Howell-Miller, 2019) Despite shifts in public narrative, from a focus on the criminalization of drug use to a more comprehensive public health approach, many national, state, and local policies still lag behind in addressing the racialized drug policies that currently contribute to the mass incarceration of BIPOC and other targeted populations. (National Academies of Sciences Engineering and Medicine, 2018)

Field Example:

De-Criminalization: New York City Coordinated Municipal Drug Strategy (*Howell-Miller, 2019*), (*Drug Policy Alliance, 2017*)

In 2017, New York City passed legislation to create Coordinated Municipal Policy, aimed at increasing collaboration across agencies to ensure greater services for those who use drugs. Cities across Europe and Canada have implemented similar coordinated municipal drug strategies since the late 1980s, and have had significantly lower rates of drug use, crime, public disorder, and overall improved public health outcomes, such as reducing rates of HIV/AIDs and overdose deaths, compared to New York and other cities in the United States.

New York City's municipal drug strategy specifically aims to address silos across city agencies, such as housing, welfare, family and homeless services, and the courts that serve individuals who use drugs. The strategy brings together best practices in individual and community health including:

- Public education around fentanyl and other novel psychoactive substances
- Safer consumption spaces/supervised injection facilities
- Ending marijuana prohibition
- Access to harm reduction services, including syringe exchange and peer outreach
- Reducing contact between people who use drugs and law enforcement
- Ensuring stable housing and access to social services, regardless of active use status
- Crosscutting efforts to reduce stigma

The war on drugs has failed to address drug use appropriately or effectively and resulted in the disproportionate over-criminalization and mass incarceration of BIPOC and other targeted populations. (Drug Policy Alliance, 2016) Rates of incarceration for Black and Latinx communities are further exacerbated by systemic inequities throughout the criminal justice system, from arrest to parole release. (National Academies of Sciences, 2016) One source summarized evidence that racial discrimination in opioid-related arrests exists. (Hart & Hart, 2019) Complicating factors for Latinx and immigrant communities, laws criminalizing drug use are compounded by immigration laws, which have led to mass deportation for noncitizen immigrant populations. (Drug Policy Alliance, 2017), (Drug Policy Alliance, 2021), (Barocas et al., 2019) Mandatory drug sentencing has also resulted in rising incarceration rates among women, who are more likely to enter prison with an existing mental illness. (National Academies of Sciences, 2016) Compounding these factors, mental illness, drug addiction, neighborhood poverty, and school dropout all increase the likelihood of involvement with the criminal justice system. (Howell-Miller, 2019), (National Academies of Sciences, 2016), (Barocas et al., 2019)

“The War on Drugs has failed to stem injection drug use and has contributed to mass incarceration, poverty, and racial disparities.” (Vearrier, 2019)

Being justice-involved, individuals currently in jails or prison, as well as under supervision of the justice system (ex. probation or parole), puts individuals at greater risk for overdose. A study conducted in Rhode Island found that incarcerated individuals are at elevated risk for overdose, (Brinkley-Rubinstein, Macmadu, et al., 2018) in part due to low treatment rates. (Iheanacho T., Jordan A., 2020) Prison conditions themselves, such as overcrowding and solitary confinement, can further exacerbate existing conditions. (National Academies of Sciences, 2016) Risk of overdose for justice-involved individuals is particularly heightened following initial release from prison. One “meta-analysis of studies on overdose in [formerly incarcerated populations] showed that there is a three- to eight-fold increased risk of death from drug overdose for individuals released from prison in the first two weeks of release compared to later on” (Human Impact Partners & WISDOM, 2012). Resources for formerly incarcerated individuals are also limited. Racialized laws often deny previously incarcerated individuals' access to “jobs, housing, educational loans, welfare benefits, political participation, and other key social goods solely on the basis of their drug convictions.” (Drug Policy Alliance, 2016; National Academies of Sciences, 2016) Laws limiting access to needed resources to support re-entry has contributed to overdose as a leading cause of mortality among those released from corrections facilities. (Brinkley-Rubinstein, Zaller, et al., 2018) This underlies the need not only for decriminalization policies, but also for policies and practices affecting re-entry and ex-offender access to addiction treatment, overdose education, and naloxone. This highlights a key area of intersectionality for populations who have been disproportionately affected by the war on drugs and mass incarceration. Not only are they at increased risk due to their race because of racialized drug policy, but subsequently this risk is magnified when they are incarcerated and assume the identity of justice-involved as well.

“Historical racism, implicit racial bias, and discrimination have shaped the response mechanisms of the past, and unfortunately are a part of the responses we see today. Rather than providing communities of color with treatment/resources, policies criminalize these communities, resulting in disproportionate suffering from drug epidemics. The effects of criminalization are lasting — affecting individuals’ ability to get employment, education, housing, or even vote. These detrimental policies erode the foundation of entire neighborhoods, destabilizing economic stability, mobility, and complete infrastructures.” (Kunins, 2020)

In “Disparity by Geography: The War Against American Cities”, the first longitudinal analysis of drug arrests by race throughout the war on drugs era, researchers declare that “the [W]ar on [D]rugs, beginning in the 1980s, represented a profound shift in the way in which the United States practiced law enforcement, and ushered in a new era in American policing. Overall, between 1980 and 2003, the number of drug offenders in prison or jail increased by 1100% from 41,100 in 1980 to 493,800 in 2003, with a remarkable rise in arrests concentrated in African American communities.” (King, 2008) Current policies during the recent overdose crisis have continued to reinforce the negative and unjust outcomes that stemmed from the War on Drugs, including those that led to racial and ethnic inequities in sentencing. (Moore & Elkavich, 2008) “This [W]ar on [D]rugs, has created a behemoth of courts, jails, and prisons that have done little to decrease the use of drugs while doing much to create confusion and hardship in families of color and urban communities.” (Moore & Elkavich, 2008) Additionally, “[s]ince 1972, the number of people incarcerated has increased 5-fold without a comparable decrease in crime or drug use”. (Gainsborough & Mauer, 2000) In fact, the decreased costs of opiates and stimulants has been suspected to lead to increased access to and use of illicit drugs.

Field Example:

Drug Policy Alliance: Latinxs and the Drug War *(Drug Policy Alliance, 2021)*

In the U.S., the war on drugs has failed to reduce the harms of drugs – while causing the systematic over-criminalization and mass incarceration of Latinx populations. The drug war fuels racial profiling, violence against immigrants, intrusive government surveillance, and militarization of local law enforcement and our international borders. Therefore, the Drug Policy Alliance points to strategies that can be used to better address the failed Drug War’s impacts on Latinx populations and communities both domestically and abroad. These include advocating for:

- Repairing the harms of drug war arrests, deportations, and criminalization in Latinx communities
- Saving lives through culturally-informed, harm reduction-based education, services, and policies
- Social equity for Latinxs in the legal marijuana industry
- Honest and evidence-based drug education for young people
- Ending U.S.-perpetrated drug war violence in Latin America

Additionally, the War on Drugs led to misconceptions around race and drug use. In 2008, Moore and Elkavich outlined that at 7.4% and 7.2%, respectively, the current rates of illicit drug use were similar between Black and White people, however, they were comparatively lower for Latinx people at 6.4%. Furthermore, in the same report, the authors highlighted a study from 1998 which showed that White people composed 72% of all illicit drug users, compared to 15% of Black people who used illicit drugs. (Moore & Elkavich, 2008) Specifically, White people “were 3 times more likely than Black people to have ever used crack.” (Dyer, 2000) Moreover, “drug use in suburban areas goes unchecked and underreported, while people of color are profiled in urban areas as potential drug users and dealers.” (Moore & Elkavich, 2008)

Furthermore, these policies are compounded by other factors, such as limited access to abortion, reproductive health care, and criminalization of pregnant women who use drugs, that also disproportionately affect Black and communities of color. (Harm Reduction Coalition, 2017) Laws and restrictions on harm reduction, which stem from the narrative of criminalization, further exacerbate overdose rates. (Rudolph et al., 2010)

Ironically, the criminalization of drug use has actually shown to lead to further drug addiction post release from incarceration, along with other complications such as alcoholism, and mental illness. (Moore & Elkavich, 2008) “Public health as a discipline is now in a prime position to call attention to these discrepancies, design programs to assist both the incarcerated individuals and their families, and create the social environment necessary to change the political climate and social policy surrounding who’s using and who’s doing time.” (Moore & Elkavich, 2008) Overall, the War on Drugs and subsequent imprisonment of BIPOC individuals for nonviolent drug offenses can be directly connected to this escalating public health problem for our communities of color. (Moore & Elkavich, 2008)

Field Example:

Harm Reduction Strategies in Correction Settings *(Brinkley-Rubinstein et al., 2017)*

The following strategies could reduce overdose rates among those both currently in correctional settings and with recent criminal justice involvement.

- Overdose education and naloxone programs;
- Comprehensive medication assisted treatment (MAT) programs as standard of care;
- Corrections-specific overdose risk assessment tools; and
- Increased collaboration between corrections entities and community-based organizations.



Organizations

Key Themes: Organizations are often directly responsible for shaping the living conditions in which individuals live, work, learn, play, and pray. Centralized, imbalanced power structures are susceptible to systemic biases.

On any given day, an individual interacts with and is influenced by multiple organizations such as, but not limited to, government agencies, businesses, and not-for-profits. While much of the literature did not reference specific organization types for their role in contributing to overdoses, a theme that emerged was the importance of institutional culture and power distribution within organizations of all types. Organizational structures are often built upon the corporate structure, which centralizes power and decision-making at the highest levels, and often leaves those most affected by decisions out of the decision-making process. (Harm Reduction Coalition, 2012) For example, a community-based developmental evaluation study was conducted to explore how organizational development barriers can prevent African-Americans from accessing leadership and decision-making power within institutions and organizations that use the harm reduction model. The ways in which power, control and organizational culture manifest within what are often predominantly White Non-Profit Industrial Complex (NPIC) organizations can then serve as a hindrance to the collective development of Black leadership who wish to apply harm reduction within their own communities (National Harm Reduction Coalition, 2012). This, in turn, results in racialized “solutions” that exacerbate existing inequities, rather than address them.

These imbalances in power can be mitigated through a racial justice approach. The Harm Reduction Coalition defines racial justice as “the creation and proactive reinforcement of policies and practices that produce equitable power. Focus on structural racism and systemic inequity rather than simply person prejudice. Focus on impacts rather than intentions.” (Harm Reduction Coalition, 2012) This can be achieved through capacity building tools that address the SDOH which affect health equity, paired with mechanisms for support and mentorship for leadership development among those with lived experience.

In discussing power, and the role of organizations, it is important to keep in mind that government institutions at the national, state, and local level shape the policies that affect drug overdose, and the attitudes and biases expressed through racialized policies may be carried through into organizational practice.

Field Example:

Harm Reduction Coalition: Using Advocacy to Shift Organizational Power (*Harm Reduction Coalition, 2011*)

Harm Reduction Coalition, a national advocacy and capacity-building organization working to promote the health and dignity of individuals and communities who are impacted by drug use, has adopted a racial justice framework, grounded in reconciliation, resiliency, and healing in order to address the oppression experienced by Black Americans through organizational systems of power. (Harm Reduction Coalition, 2011)

Media and Dominant Narratives

Key Themes: Media influence is cross-cutting and affects both larger forces such as root causes and SDOH and individual level factors.

Media influence is not created in a vacuum, and itself is influenced by social and institutional inequities, with dominant media narratives often reflecting racialized beliefs and policies. (Thompson et al., 2020) At the individual level, media creates and perpetuates various types of stigma. (Thompson et al., 2020)

Predominant narratives generate fear and stigma around drug use, often focusing this fear and stigma on certain racial and or community groups. (Thompson et al., 2020) One way in which the dominant narrative achieves this is in treating drug use as a law enforcement issue rather than a public health problem. This reinforces the criminalization and stigmatization of certain racial and community groups. (Burris, 2018) This narrative also echoes the racialized policies of the war on drugs that continue to contribute to the mass incarceration of communities of color. Furthermore, past drug epidemics, which have largely affected communities of color, were historically portrayed in the media using the moral failing model, further stigmatizing these communities. (National Academies of Sciences, 2016) While the moral failing perspective has largely been abandoned by the medical community, this narrative persists as a public viewpoint, and continues to lead to stigmatization of individuals and communities of color. (National Academies of Sciences, 2016) Compounding the stigma created by dominant narratives is the fact that substance misuse is more highly stigmatized than other mental illness, and there is less evidence around what works to reduce this stigma. (National Academies of Sciences, 2016)

Stigma has been called out by scholars as a major barrier to the success of mental health reform; this demonstrates the intersections between media narratives and institutional inequities, specifically law and regulation. (National Academies of Sciences, 2016) This is to say that stigma exists, not just as an interpersonal issue, but as a systemic structural issue that permeates through media narratives, institutions, laws and regulations. We, then, see this most visibly through the “general public and groups, such as healthcare providers, employers, and landlords; and self-stigma (“personal endorsement of stereotypes about oneself, and the resulting prejudice and self-discrimination” (Hammarlund et al., 2018)), which reflects internalized negative stereotypes due to the prior mentioned factors.” (National Academies of Sciences, 2016)

“For decades black communities have faced job loss, school closings, and economic distress. However, these structural issues are rarely contextualized as causing public health problems. When white and rural populations saw steep overdose rates, economic distress and unemployment were immediately factors. This double standard is prevalent across media and further stigmatizes non-white drug users, who are often depicted as criminals instead of sick people who need treatment.”
(*Health in Justice Action Lab: Northwestern University, 2019*)

Even as the media moves away from the moral failing perspectives to focus more on social and structural determinants, there are marked differences in how and when these contrasting narratives are employed. The current drug overdose epidemic, which has largely affected White populations, is often attributed to structural causes, namely, oversupply and prescription by physicians. (Dasgupta et al., 2018) Media coverage in White and/or middle-class communities often provide background and context for substance misuse in a manner that builds empathy. This contrasts with coverage of the epidemic in communities of color, which lacks this empathy-building context, and is often limited to a name, the arrest, and criminal charges. However, these same communities, home to American Indians/Alaskan Natives (AI/AN), Black Americans, and Latinxs, are currently experiencing rapidly rising overdose rates and bear a disproportionate burden of job loss, school closings, and economic distress, the very social contexts that engender empathy in White media narratives. (Health in Justice Action Lab: Northwestern University, 2019) This phenomenon was further demonstrated through a randomized controlled trial of US adults, who were presented with test narratives portraying a woman with opioid pain



reliever addiction. This study found that portraying a low socioeconomic status woman with context lowered support for punitive policies and increased support for expanded insurance coverage for treatment. (Kennedy-Hendricks et al., 2016) The lack of consideration of contextual factors by the media creates two contrasting narratives, one White and one largely Black.

This furthers the racial divide and bias that permeates policies, institutions, the public viewpoint, and individual self-stigma.

Field Example:

Public Health’s Role in shaping narrative (*Public Health Institute, 2018*)

The Berkley Media Studies Group, a nonprofit organization dedicated to expanding advocates’ ability to improve the systems and structures that determine health, conducted an analysis of current media coverage of the opioid epidemic. Through this analysis, they found that despite shifts towards a public health perspective in framing the epidemic, public health agencies and professionals are largely left out of the conversation.

The study advocates for public health to leverage current media attention on the opioid epidemic to communicate about opioid use using a racial equity and health equity lens. To do so, five key strategies for public health were proposed:

1. Track the media
2. Bring the system into the picture
3. Bring racial justice into the landscape
4. Describe solutions using a health equity lens
5. Start where you are at and continue to move forward

Social Determinants of Health

The root causes, as described above in Social Inequities and Institutional Inequities, “produce systematic disadvantages, which lead to inequitable experiences of the SDOH and ultimately shape health outcomes.” (National Academies of Sciences Medicine and Engineering, 2017) The social determinants of drug use and overdose are described in this section aligned with the BARHII model: Physical Environment, Economic and Work Environment, Social Environment, and the Service Environment. (Bay Area Regional Health Inequities Initiative, 2020)

Physical Environment

Key Themes: The most noted impacts of physical environment on drug overdose health inequities are attributed to differences in urban versus rural settings and issues of housing and homelessness.

An individual's physical environment, both geographic location and built environment, have effects on inequities in drug overdose. General trends show that opioid-related hospitalizations vary by region, with the opioid hospitalizations highest in the South and the lowest in the Northeast, and heroin-related hospitalizations being highest in the Northeast and increasing fastest in the Midwest. (Unick & Ciccarone, 2017) A study conducted in Missouri found that opioid overdose morbidity decreased as levels of rurality increased. Over that same period, Missouri's most urban counties had significantly higher rates of opioid overdose. (Coffey et al., 2020)

While there are increasing overdose deaths in rural areas, most overdose deaths between 2012-2015 occurred in metropolitan counties, in part reflecting the larger populations in these areas. (Shiels et al., 2019) A problem unique to urban areas is that of revitalization and urban redevelopment. While these activities have been perceived to have largely positive consequences, for some populations, including low-income communities, communities of color and those that use drugs, revitalization can bring a lack employment opportunities, disruptions in social ties, housing instability and displacement. Revitalization also leads to the displacement of drug markets to adjacent areas. (Linton et al., 2013)

Regardless of whether communities are rural or urban, greater prescription overdose rates were found in more economically disadvantaged zip codes. (Pear et al., 2019) This was further supported by a small area study in Nevada that found that inequities in fatal prescription opioid overdose increased as neighborhood disadvantage – defined as “social, economic, and environmental characteristics of a neighborhood that create unfavorable conditions, negatively impacting the residents who live there”, such as high concentrations of poverty – increased. (Miceli, 2019) Further underscoring the importance of location as a determinant of drug use, following mass traumatic events such as Hurricanes Katrina and Rita, longitudinal housing studies revealed that drug use decreased when individuals moved to neighborhoods with more economic security. (Dasgupta et al., 2018) In rural communities, economic distress served as a stronger positive predictor of drug mortality rates than opioid supply, while in urban counties opioid supply factors are more strongly associated with mortality than economic distress. (Dasgupta et al., 2018) Overall, the highest rates of opioid mortality across the urban-rural continuum are concentrated in economically distressed mining and service-sector dependent counties with high exposure to opioids and fentanyl. (Monnat, 2019) (For more on the underlying mechanisms connecting economic opportunity to overdose, see “[Economic and Work Environment](#)”).

Environmental impacts on overdose can also be seen across issues in housing and homelessness. (Iheanacho T., Jordan A., 2020) Overdose is more common in individuals who experience homelessness and individuals who experience homelessness are more likely to continue drug use after an overdose compared to those who use drugs but are housed. (Abt Associates, 2019) Those experiencing homelessness are nine times more likely to die from an overdose, demonstrating the magnifying effect of lack of housing on physical illness and mental illness. (Abt Associates, 2019) In one study in San Francisco, overdose deaths were 19.3 times more likely in single room occupancy (SRO) buildings, or residential hotels, a form of affordable housing, than for nonresidents. (Rowe et al., 2019) Furthermore, SRO residents were more likely to die at home than non-SRO residents. These inequities in death are related to the physical environment, but also interrelated SDOH including income and the deeper root cause of classism and structural poverty.

Field Example:

Strategic Partnership: Public Libraries as an Untapped Community Prevention Space (Lowenstein et al., 2019)

Public libraries are present in communities across the United States and are important community spaces for overdose prevention, with 12% of libraries reporting an on-site overdose at their library in the past year.

A study conducted with library staff, found promising opportunities for strengthened partnership between public health and libraries for overdose prevention. In a series of semi-structured interviews with library staff, researchers found that among participants:

- Only 7% stocked Naloxone
- Nearly all reported substance abuse as a prominent concern among staff and patrons
- Nearly all lacked preparation, resources, or institutional support to address substance abuse
- Nearly all expressed interest in increased partnership between public libraries and social services organizations

Economic & Work Environment

Key Themes: While many sources linked drug use and overdose to economic opportunity and widening income inequality, the overarching finding was that higher socioeconomic status was associated with lower rates of prescription opioid use behavior. (Nicholson, 2020), (Altekruse et al., 2020)

One important factor when exploring the economic and work environment in relation to drug overdose, is the availability of jobs and labor conditions. Jobs in poorer communities are often dominated by the manufacturing and service sectors, which have elevated physical hazards, leading to on the job injuries, chronic pain conditions, and subsequent high rates of prescription pain killers. (Dasgupta et al., 2018) Mining in particular has been identified as a high-risk occupation and contributor to drug overdose risk. In “Factors Associated With County-Level Differences in U.S. Drug-Related Mortality Rates”, researchers found that in “controlling for county demographic characteristics, average [drug-related] mortality rates were significantly higher in counties with greater economic and family distress and in counties economically dependent on mining.” (Monnat, 2018) Historically, labor unions have played a key role in maintaining high quality jobs and benefits, and the loss of unions in many communities has exacerbated income inequality and is associated with overdose and suicide mortality. (Eisenberg-Guyot et al., 2020) Further demonstrating the link between economic opportunity, labor conditions, and overdose mortality, closures of automotive assembly plants are associated with increases in opioid overdose mortality. (Venkataramani et al., 2020)

Numerous findings pointed to the important role of geography in shaping economic opportunity, demonstrating a key intersection between physical environment and economic and work environments. Community-level economic stressors contribute to drug use and overdose rates through multiple social determinants pathways, including high unemployment, lack of access to healthcare, poverty, and low educational attainment. (Pear et al., 2019) Geographic disparities can be observed between the richest and poorest counties in the United States. (Boslett et al., 2019) These gaps are exacerbated for Black and other communities of color. As one study found, there was a significant life-expectancy gap between Black men in high poverty areas of Appalachia versus White women in low-poverty areas elsewhere, with overdose identified as a contributing cause. (Firebaugh et al., 2014) Another study, examining a more urban context, found that overdose deaths were concentrated in a small, high-poverty, central area of San Francisco and disproportionately affected Black individuals. (Visconti et al., 2015)

Further demonstrating intersections within the SDOH, economic disadvantage has direct effects on the social setting. Economically disadvantaged communities experience greater social alienation, disempowerment, and lack of social cohesion when compared to higher socioeconomic communities. (Burris, 2018) Within these communities, opioid and other drug use is attributed to “deaths of despair,” wherein drug use has been proposed as a physical refuge from the traumas resulting from concentrated disadvantage, isolation, and hopelessness resulting from a lack of economic opportunity. (Thompson et al., 2020), (Eisenberg-Guyot et al., 2020) Furthermore, economically disadvantaged communities lack the resources and programs for residents to cope with economic loss and social depression, further worsening community wide drug use and overdose. (Thompson et al., 2020)

“...these deaths are “deaths of despair” among people who have lost out in the economic changes of the past 50 years—lost out to the globalization of industrial production and technological change but also in their experience of growing inequality. Life for the top 20% is better than ever, but public schools, colleges, parks, transportation systems, roads and bridges, and overall collective investment in planning and support have been neglected. Less affluent people in great swaths of the country have increasingly been left to their own devices as dramatic economic changes have overtaken them and, slowly but surely, the effects of lost hope and reduced social cohesion and opportunity have manifested in the mortality tables.”
(Burris, 2018)

Social Environment

Key Themes: Several key themes emerged through this analysis around social environments and their relationship with inequities in overdose: Historical trauma, stigma and social exclusion, and family and peer networks.

The social environment refers to the experiences of class, racism, gender, and immigration status. (Bay Area Regional Health Inequities Initiative, 2020) Historical traumas affecting minority and communities of color have a direct effect on drug use and overdose rates. A study examining the incidence of alcohol- and drug- related hospitalization in geographic areas with significant American Indian/ Alaskan Native (AI/AN) populations found AI/AN populations are at greater risk for drug abuse with the caveat that this level of risk is shared with Black populations in areas with greater proportions of Black residents. (Ponicki et al., 2018) However, these risks are not shared in areas with higher Latinx populations. The study proposed that these effects are tied to AI/AN and Black communities' shared history of trauma, structural inequities, and multi-generational economic disadvantage. (Joshi et al., 2018) This was supported by additional sources citing ongoing violence, both physical and structural, as exacerbating these historical traumas and perpetuating victimization. (Ponicki et al., 2018) Furthermore, historical trauma and contemporary traumas are intertwined, and manifest today in concentrations of economic stressors such as poverty, unemployment, and low educational attainment as well as social distress, continued trauma, and disempowerment, all of which themselves have been tied to higher rates of opioid overdose. (Pear et al., 2019), (Dasgupta et al., 2018), (Thompson et al., 2020), (Greenfield et al., 2019)

“Stigma can be defined as the relationship between an attribute and a stereotype that assigns undesirable labels, qualities, and behaviors to a person. Labeled individuals are devalued socially, leading to inequality and discrimination.”
(National Academies of Sciences, 2016)

While stigma has been discussed in this report both in terms of laws, regulations, and media narratives that perpetuate and generate stigma, to truly explore how stigma relates to overdose it must be discussed in the context of interpersonal social environments. Stigma, discrimination, and the criminalization of drug users manifests as a barrier to treatment seeking among those that use drugs. (Souleymanov & Allman, 2016) Furthermore, stigma is directly related to the process of social exclusion, which exacerbates the social context in which individuals use drugs. (Souleymanov & Allman, 2016) Drug use in turn, exacerbates social exclusion, as the stigma, discrimination, and prejudice associated with drug use excludes individuals from mainstream society. This stigma, and subsequent discrimination, permeates into the medical setting as well, where one study found that Black participants were more likely to report discrimination in a medical setting. (Swift et al., 2019) (For more on stigma in health care settings see "[Service Environment](#).") In contrast, social capital is a protective factor against drug overdose, with a statistically significant inverse association between county-level social capital and age-adjusted mortality due to drug overdose. (Zoorob & Salemi, 2017)

In a key example of intersectionality, Black people with SUD are doubly stigmatized by their minority status and substance use. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) Negative images of Black people with SUD abound in the media and contribute to institutional mistreatment, discrimination, and harsh punishment over treatment and recovery. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) Stigmatization is also reflected within Black communities themselves, with words such as "opioid epidemic" or "crisis" seen as inflammatory and triggering fears of incarceration. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) Community perceptions of addiction as an illness further stigmatize users, and individuals with SUD feel compelled to hide their addiction as "addiction is seen as a weakness not a disease" and a "moral failing." (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) While the moral failing perspective has fallen out of favor in the dominant narrative, it still permeates interpersonal narratives. Furthermore, many in the Black community reported a lack of familiarity with treatment options, which, compounded with community and self-stigma resulting from the moral failing perspective, increases barriers to seeking care. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020)

Family and peer networks can both be a facilitating as well as a protective factor for drug use. In a study conducted in Appalachia, acceptance and denial of drug use through familial and peer influences was found to be a contributing factor to individual drug use. (Thompson et al., 2020) Acceptance of drug use is related to wider community and societal level narratives that characterize and stigmatize certain communities as "drug users", thus normalizing drug use within the community. Denial is related to families' and peer networks' refusal to recognize and therefore intervene in an individual's drug use, which can, also, detrimentally affect an individual. Drug use was also directly related to coping with family dysfunction and the lack of social support available. (Thompson et al., 2020) In smaller, remote towns, for example, personal and professional relationships were found to overlap in ways that could increase the level of stigma experienced. (Showalter, 2020) However, family and peer networks can also generate resilience, which can help mitigate the effects of economic hardship and depression that are often experienced in communities with high rates of drug abuse. (Dasgupta et al., 2018), (Thompson et al., 2020)

One important determinant of overdose is having experienced adverse childhood experiences (ACEs) while growing up. (Trust for America's Health, 2020) ACEs are potentially traumatic events that occur during childhood (0-17 years) and can include experiences of violence or abuse or having a family member attempt or die by suicide. (Centers for Disease Control and Prevention, 2020d) The ten factors used to screen for ACEs fall into three main categories: Abuse (emotional abuse, physical abuse, sexual abuse), Household Challenges (intimate partner violence, substance abuse in the household, mental illness in the household, parental separation or divorce, incarcerated household member) and Neglect (emotional neglect, physical neglect). (Centers for Disease Control and Prevention, 2020b) Substance use by family members or guardians is a contributing factor to ACEs as it can reduce a child's sense of safety, stability, and bonding in a household. (Centers for Disease Control and Prevention, 2020d) Children of parents who use drugs are more likely to be abused and/or neglected than children of parents who do not; this childhood trauma increases the risk of future drug misuse. (Trust for America's Health, 2020) Parents who misuse are also more likely to be of low socio-economic status, lack social support and resources, and experience co-occurring mental illness, all of which introduce additional traumas for children. (Parolin et al., 2016) One study looking at one of the ten ACEs (Incarcerated household member), showed one in 15 Black children and one in 42 Latinx children have a parent in prison, compared with only one in 111 White children, influencing downstream inequities. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) The trauma of having a parent who is incarcerated can further impact children by compromising their sense of self-worth, making them more susceptible to peer pressures, and engaging risky behaviors, such as substance use. One study found that, regardless of gender, children whose fathers were incarcerated were more likely to use illegal drugs – at an earlier age, in greater amounts and for longer periods of time than children whose fathers were not incarcerated. (Human Impact Partners & WISDOM, 2012) This same study revealed that “youth with a parent in prison are five times more likely to be convicted as a juvenile, almost seven times more likely to be convicted as a young adult, and five times more likely to be imprisoned by age 40 than youth who do not have a parent in prison” (Human Impact Partners & WISDOM, 2012). As indicated in our Law and Regulation section, becoming justice-involved, further increases their risk of overdose in their lifetime. These findings demonstrate the tie between racialized policies, mass incarceration, and the destabilization (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) of families in communities of color. (Trust for America's Health, 2020)

Service Environment

Key Themes: Sources identified a lack of culturally appropriate care and additional barriers of historical mistrust.

The service environment is a broad category encompassing services intended to support the health of communities and individuals. Within the BARHII model, this is divided into three distinct subcategories of services: healthcare, education, and social services. (Bay Area Regional Health Inequities Initiative, 2020) While we know that education and social services are important determinants of inequities in overdose, literature on the roles of these two determinants is lacking. Instead, the literature identified through this review focused almost exclusively on the role of healthcare.

Field Example:

Health Equity Approaches (Leece et al., 2019)

In one study, stakeholders identified three key findings to improve substance use programming:

1. Address equity and stigma-related barriers towards people with lived experience of substance use
2. Improve data collection to facilitate evaluation; and,
3. Enhance community partnerships by involving people with lived experience of substance use.

“Increase the capacity of local community organizations, serving people who use drugs, to conduct health equity impact assessments of their programs and services. This will help to identify barriers and potential unintended impacts on people who use drugs and facilitate strategies to mitigate these impacts.” (Bergeron, V. et al, 2019)

Echoing dominant media narratives, historically, healthcare has viewed addiction as a moral failing. While most practitioners have moved away from this model toward a neurobiological model based in the biology of addiction, this biological model still fails to consider the complex interplay between individuals and their environments. (Santoro & Santoro, 2018) There is a need for healthcare to more fully engage with the whole person, and examine not only their physical needs, but also the mental needs caused by structural components such as social disadvantage, isolation, and pain. One source recommends training healthcare providers in “structural competency,” a shift in medical competency from individual outcomes to considering the factors that influence these outcomes, such as economic opportunity, social cohesion, racial disadvantage, and life satisfaction. (Dasgupta et al., 2018) By uncovering these complex structural factors, tailored public health interventions can be developed. (Santoro & Santoro, 2018)

Field Example:

Improving Culturally Sensitive Care (Lin & Juarez, 2018)

Published by the Health and Human Services Advisory Committee on Minority Health, the Opioid Crisis: Recommendations for Creating a Culturally Sensitive System of Care put forth the following guidance on improving culturally sensitive care:

“A culturally sensitive, patient-centered system of services is needed to provide a continuum of opioid prevention and treatment services. Achieving optimal health and wellness will require, at a minimum, involvement of first responders, public health educators, health care providers, behavioral health services (including substance abuse) treatment providers, prevention specialists, recovery support specialists, and law enforcement and justice professionals. Establishing a culturally responsive, multisector system of services will require addressing the following major components: public policy, organizational policy, prevention and treatment, and workforce development. The enhanced National CLAS (Culturally and Linguistically Appropriate Services) Standards have direct relevance for a coordinated response to the opioid crisis, as well as the development of effective strategies to improve service access, service delivery and quality, and equitable outcomes.” (Lin & Juarez, 2018)

In our review, a lack of culturally appropriate care emerged as both a significant barrier to healthcare and a contributor to overdose. This further demonstrated the importance of the concept of “structural competency” in addressing overdose inequities, especially for BIPOC and other marginalized populations. Taking the step to engage in addiction treatment is difficult and is made more difficult when cultural contexts and structural factors are ignored or misunderstood in the medical setting. This can manifest as a lack of respect for the patient’s cultural practices, beliefs and background or as an overall lack of practitioners who share their same cultural background. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) This has been observed in Black communities, where Black providers are underrepresented, introducing a key cultural barrier for Black persons to seek treatment. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) A similar barrier was reported for AI/AN individuals. (Venner et al., 2018) In addition to the lack of AI/AN providers, the secular focus of Western treatment models often conflicts with those of the many varied types of AI/AN medicine, which may be more spiritual and holistic in form, depending on the needs and traditions of each particular ethnic group. This presents the additional barriers of institutional discrimination and distrust stemming from a lack of cultural or traditional values and practices being incorporated into treatment options. (Venner et al., 2018)

These issues are further exacerbated in the Black community by a historical mistrust in health care, social services, and the justice system that stems from racialized laws, policies, and past discrimination. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) For Black men in particular, historical traumas stemming from the ongoing criminalization of drug use has manifested in the fear that accessing care will result in sentencing and incarceration. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) Similarly, Black women express fears of losing their children to foster care if they seek treatment. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) Latinx communities experience similar trepidation in entering care due to an absence of culturally informed health and social services. (Drug Policy Alliance, 2021) This phenomenon not only has implications for the physical health of individuals who are unable to seek care and who are at higher risk of overdose mortality, but it also fuels incarceration and deportation for drug possession. (Drug Policy Alliance, 2021) This is a prime example of the idea that each of the determinants described in this paper cannot be viewed in a silo and engaging with a lens of intersectionality introduces multiple layered effects for Latinx populations and others who use drugs.

Another group for whom culturally appropriate care emerged as an important factor when considering healthcare as a determinant of overdose inequities was the LGBTQIA+ population. LGBTQIA+ individuals are “at a statistically higher risk of addiction because they face increased stigma, discrimination, and other challenges on a regular basis — such as healthcare inequities, exclusionary governmental policies, social rejection, hate crimes, harassment, violence, and barriers to accessing quality housing, healthcare, and employment.” (Faces & Voices of Recovery, 2019) LGBTQIA+ populations experience substance use disorders at higher rates than cisgender, heterosexual peers. (Faces & Voices of Recovery, 2019) Often, recovery spaces can feel exclusionary to LGBTQIA+ individuals as they focus primarily on cisgender and heterosexual experiences. (Faces & Voices of Recovery, 2019) LGBTQIA+ individuals encounter unique characteristics and barriers, and treatment and recovery options that take these factors into account are needed. (Faces & Voices of Recovery, 2019)

“Heterosexual individuals are often unaware of the privilege they hold and what life is like for those without it... While for many folks, the idea of suggesting that ‘men stick with the men and women stick with the women’ seems to be sound advice, this suggestion totally discounts the reality of gender identity being far more than a binary of male or female. It also ignores the fact that sexual orientation actually exists on a vast and fluid spectrum that includes so much more than just a firm heterosexual.”
– Recovery activist Brooke Feldman (Faces & Voices of Recovery, 2019)



Field Example:

Community-informed Strategies to Address OUD in Black Communities

One strategy to address inequities in treatment access stemming from a lack of culturally competent care includes integrating evidence-based SUD treatments in nontraditional and community settings. This has potential to increase access to treatment for underserved populations. (Iheanacho T., Jordan A., 2020)

The Substance Abuse and Mental Health Services Administration (SAMSHA) outlines several key community-based strategies to addressing the opioid crisis in Black communities in their report, “The Opioid Crisis and the Black/African American Population: An Urgent Issue”: (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020)

1. Implement a comprehensive, holistic approach
2. Involve the community and develop multisectoral, diverse community partnerships
3. Increase culturally relevant public awareness
4. Employ culturally specific engagement strategies
5. Create culturally relevant and diverse workforce

Healthcare service availability is also an important environmental level factor to consider when discussing overdose inequities, as services are not always equally available to all patients. (Joshi et al., 2018) A study conducted in South Carolina found that being of non-Hispanic, White race-ethnicity and having insurance were predictive of receiving a mental health assessment. (Joshi et al., 2018) The overall national lack of providers prescribing medications for opioid use disorder (MOUD) affects some communities more than others. In particular, providers serving Black, AN/AI and other communities of color are less likely to provide MOUD. (Venner et al., 2018), (Santoro & Santoro, 2018)

Funding and provider training emerged as two key drivers of the inequities in service distribution across communities. In under-resourced communities, lack of or limited access to providers trained in addiction medicine and behavioral health exacerbates existing inequities. (Lai JT, Chapman BP, Carreiro SP, 2020) Individuals that do seek treatment in underserved communities are more often treated by a primary care provider rather than a mental health specialist or addiction specialist (Santoro & Santoro, 2018). Services in many minority communities are chronically underfunded, contributing to a lack of healthcare availability. “[American Indians/Alaskan Natives] also face barriers to receiving quality medical and behavioral health care, resulting in part from longstanding underfunding of the Indian Health Service (IHS), tribal, and urban Indian clinics.” (Joshi et al., 2018) These funding decisions stem from institutional level law and regulation as well as organizational decisions, which in themselves may be influenced by organizational biases. Even when services are available within the community, lack of provider training can hamper the provision of services. In a survey of AI/AN providers, only 28% reported MOUD implementation, and an equal number skipped the section due to lack of familiarity with MOUD. (Venner et al., 2018)

Even when available, Black Americans and other minorities may be under-prescribed potentially lifesaving medications, such as MOUD and Naloxone. (Saloner & Cook, 2013) According to a Veterans Health Administration (VA) study, prescription of MOUD that reduce the harms of opioid misuse, addiction, and overdose, such as methadone, buprenorphine, and naltrexone, are highly underutilized. (Essien et al., 2020) This is partially due to the limited number of medical providers credentialed to prescribe buprenorphine both within and outside the VA. (Essien et al., 2020) Unequal treatment is common in many Black communities, where access to treatment options is more dependent on race, income, geography, and insurance status, rather than individual preferences, or medical or psychiatric indicators. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) One study found pain medications are more likely to be prescribed to individuals living in mostly White areas relative to communities of color, and Whites are more likely than Blacks to have had naloxone administered in the year prior to death.” This finding was echoed over two additional studies, indicating that Blacks and Latinxs were less likely to receive any antidote when presenting for an overdose. (Singh et al., 2019), (Wilder et al., 2018) Another study examining the long-term use of opioid analgesics found that Black patients were less likely to receive two out of three guideline-recommended risk reduction strategies. (Becker et al., 2011) All of this indicates the need to assess the role of differing prescribing practices in primary care settings and overdose emergency services and how they contribute to treatment inequities.

Black and other minorities are also less likely to be prescribed opioids. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) This phenomenon is not unique to opioids alone, and one study examining benzodiazepine (BZD) use concluded that Whites, as compared to Blacks, Latinxs, and Asians, were more likely to have multiple BZD prescriptions and higher relative rates of prescription abuse. (Cook et al., 2018) These trends are deceptive and have contributed to the false myth that populations of color are protected from the overdose epidemic. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2020) This falsehood can result in further undertreatment of true pain in in these populations, with life-threatening results. While opioid over-prescribing is often the “go-to” cause for the opioid crisis it is an important part of a larger phenomenon. (Centers for Disease Control and Prevention, 2020c)

The moral failing model in healthcare has also facilitated stigma and served to discourage treatment. Even when treatment programs are available, stigma associated with accessing those services and being labeled as an “addict” deter treatment seeking. (Brown, 2019) In healthcare systems, people with SUD or who have experienced a non-fatal drug overdose may experience race or ethnicity-based bias that directly affects their access to treatment and care. (Kroelinger et al., 2019) One study suggested that this bias may have roots beyond just the moral choice model, but in fact stem from beliefs based in pseudo-science used to justify slavery, that the Black body was biologically different from the White body. One example of this bias being that Black people had a higher threshold for pain and, therefore, required less care when it came to pain management. (Santoro & Santoro, 2018) These false beliefs may persist in the medical field today through unconscious or “automatic” stereotyping, also known as implicit bias. (Santoro & Santoro, 2018) Events of stereotyping may occur more readily in situations where providers experience cognitive overload, such as stressful work environments, limited access to information, and time-limited appointments. (Santoro & Santoro, 2018)

Individual Level Factors

Using the BARHII framework, individual level factors are the furthest down-stream factors and are not root causes when compared to upstream inequities. In terms of drug overdoses, they may include risk behaviors such as polysubstance use, disease and injury including co-morbidities, and mortality rates. These factors affect individuals directly through either interpersonal interactions or internalized inequities. Unfortunately, traditional societal narratives often attribute drug use and overdose to poor individual decision-making. (Burris, 2018) While individual level factors such as family history, being male, mental health conditions, peer pressure, lack of family involvement, and homelessness, are correlated with drug use, these individual-level factors are merely the symptoms of larger social injustices. (Frankenfeld & Leslie, 2019), (Baggett et al., 2013), (Saloner et al., 2018) As individual level factors are not root causes and do not answer the research question, they were not included in this review.

DISCUSSION

As the literature review findings were compiled, several gaps in existing drug overdose health equity research became apparent. These gaps also highlight future research and programmatic opportunities. As mentioned earlier, to adequately address the economic drivers of overdose, it is critical policies are developed that examine the increasing economic inequality through tax codes, school funding, college access and other social investment. In order to effectively design social investment policies, specifically those which focus on drug overdose prevention and response, understanding the root causes is key.

Root Cause Analysis: Many sources identified health inequities, such as associations between certain races/ethnicities or class with increased drug overdose rates. While these are important for understanding how drug overdoses affect communities, they do not go further to explain why those outcomes occur and what the root causes are. For example, regarding institutional inequities, only one resource included an analysis of slavery as a root cause of current inequities. (Santoro & Santoro, 2018) Some sources offer assumptions at best, but research that seeks to understand how root causes shape outcomes is an important step toward improving responses to drug overdoses. In another example, from the Service Environment section, many sources identified a lack of treatment services, such as treatment facilities, credentialed MOUD providers, etc. However, there is a lack of emphasis on the drivers of these outcomes, which are critical to shaping response strategies.

Data Gaps: Gaps in data cause knowledge gaps in understanding the full scope of drug overdoses. As described below, these gaps include lack of information about specific populations, treatments and services.

Latinx Populations: Although Latinx populations are disproportionately harmed by our criminal justice system, there is a significant lack of data on substance use outcomes and needs for these groups. Few states include Latinxs in the criminal justice data they report. In New York City, though, we know that Latinxs are arrested at nearly four times the rate of Whites for marijuana, even though Latinxs and Whites use marijuana at comparable rates. (Drug Policy Alliance, 2021)

Adolescent Health: Few sources focused on drug overdose health inequities related to adolescent health but did identify the need for additional research in this area. “In addition to identifying factors that increase risk for misuse and negative outcomes among adolescents, research must examine the causal mechanisms that link these factors to increased risk.” (Ford, 2019) In regard to potential causal mechanisms by which adolescents face risk of drug overdose, additional research on the juvenile justice system’s role should be explored. As indicated earlier, being justice-involved does present greater risk for overdose. However, nuances in regard to youth should be further explored.

Immigrant and Migrant Populations: Additionally, there was limited information on the impact of drug overdose on immigrant and migrant populations even though the racial discrimination associated with the Anti-Drug Act has led to structural violence, mass deportation and mass incarceration of persons in Latinx and immigrant communities.

Law Enforcement and Policing: Despite, strong findings on the war on drugs and the historical and contemporary policies that have driven mass incarceration and mass criminalization, little research focused specifically on the role of law enforcement and policing in drug use. Further research should explore how the heightened presence of law enforcement within communities of color may impact drug use and overdose rates within these communities. (Moore & Elkavich, 2008)

LGBTQIA+ Populations: Few sources studied health inequities among LGBTQIA+ populations, and only one focused on transgender populations. “Unfortunately, there is a substantial gap in our understandings about how this crisis affects key populations not conventionally identified within overdose-related surveillance data. This gap is particularly pronounced for gay, bisexual, and other men who have sex with men (sexual minority men)-a population that experiences substance use-related inequities across adolescence and young adulthood.” (Goodyear et al., 2020)

The stigma, discrimination, and erasure impacting LGBTQIA+ populations result from and is reinforced by exclusionary government policies, social rejection, hate crimes, harassment, violence, and barriers to basic SDOH, such as housing, healthcare, and employment. This increased risk must be examined through the lens of the many intersecting identities held by LGBTQIA+ individuals to understand the root causes of drug use and overdose in LGBTQIA+ communities.

Access and Functional Needs Populations: Although this was not a SDOH identified in this review, few sources studied health inequities among access and functional needs or differently-abled populations.

Social Services: Within the Service Environment section, nearly all the literature focused on healthcare services, with little to no reference on the role of social services, education, and other service sectors as determinants of inequities in overdose.

Lack of Racial Equity Understanding: Racial or ethnic inequities in drug overdose response and treatment are caused by systemic, societal, interpersonal, and internalized racism that affects how Black, Indigenous, and People of Color (BIPOC) are represented in the media and academia and receive social and political support for the drug overdose crisis; this results in BIPOC communities receiving inequitable and immoral treatment due to negative stereotypes and perceptions ingrained in society.

Journal articles published as recently as 2019 have identified drug overdose inequities for White populations by stating, for example, that: “Drug overdoses do contribute importantly to widening inequity for Whites, especially men, but trivially for blacks.” (Geronimus et al., 2019) These findings expose a lack of racial equity understanding in only considering the past 10-15 years of drug overdose trends and ignoring past racial biases that led to the criminalization of substance use along with lack of treatment, social support, or root causes for substance use or overdose in SDOH. National trends showing higher rates of overdose among White populations also overlook biases endured by individuals for their race/ethnicity, immigration status, class, gender, or sexual orientation, etc. Additionally, these statements are simply not true when comparing overdose rates by population: “During 2013-2015, mortality rates among AI/AN populations were 2.7 and 4.1 times higher than rates among White populations for total drug and opioid-involved overdoses and heroin-involved overdoses, respectively. National statistics on the opioid epidemic, which report that overdose mortality rates are significantly higher among Whites than among AI/AN, are not reflective of regional prevalence, disparities, and trends.” (Joshi et al., 2018) In addition to a lack of understanding, a focus on recent drug overdose among Whites overlooks underlying root causes. As one study concisely explained, “We believe that the attention given to Whites is distracting researchers and policymakers from much more serious, longer-term structural problems that affect all Americans.” (Muennig et al., 2018) This ties back to the first identified gap, a lack of root cause analysis identifying deeper structural causes of inequities.

Response Strategies and Implementation: While the focus of this literature review was root causes of health inequities and not local, state, or partner organization practices, there was a surprising lack of programs or practices that specifically addressed drug overdose health inequities, with the exception of harm reduction. “Harm reduction is a public health philosophy that includes interventions to reduce the harms associated with both drug use and dangerous drug policies. Harm reduction is also about changing the language we use to talk about people who use drugs, to help end the stigma and dehumanization often faced by people who use drugs.” (Singh et al., 2019)

“... harm reduction is ethically sound and should be an integral aspect of our nation’s healthcare system for combating the opioid crisis. From a clinical ethics perspective, harm reduction promotes the autonomy of, prevents harms to, advances the well-being of, and upholds justice for persons who use drugs. From a public health ethics perspective, harm reduction advances health equity, addresses racial disparities, and serves vulnerable, disadvantaged populations in a cost-effective manner.” (Vearrier, 2019)

RECOMMENDATIONS

This review of literature examined root causes, inequities and associated outcomes related to drug overdose. During the process several data and contextual gaps were identified-outlining the need for future research and recommendations. Specific recommendations for future research include:

- 1. Examining health inequities both within and across LGBTQIA+, adolescent, aging, gender-based, and immigrant populations.** For example, this could include more research evaluating drug use patterns in LGBTQIA+ populations and the possible psychosocial factors associated with use and treatment outcomes. (Kelly E. Green, 2012) Additionally, researchers have called for research specifically examining the intersectionality of race, sex, gender and sexual orientation. Traditionally, and as our review shows, much research around these demographic factors was conducted in silos and focused primarily on race and ethnicity. Researchers, instead, outline that there are unique disparities that persons at these intersecting axes will experience and that failing to disaggregate samples may obscure important nuances around risk and resilience. (Mereish & Bradford, 2014)
- 2. Identifying underlying and historical root causes of health inequities, like slavery and native genocide as well as inequitable and unjust policies which have led to redlining, structural poverty and structural racism.** SAMSHA, in its guidance to providers and administrators of programs which provide substance abuse treatment to specific populations, groups and settings, advises that staff be trained in understanding “the role of racism and discrimination in stress-related health issues and substance abuse”. (SAMHSA, 2009) While this advice was provided within a list of items that would contribute to improved treatment outcomes for African American women, specifically, many of the recommended items may be adaptable in practice for other populations with similar histories of oppression and experiences of inequity.
- 3. Examining social and institutional health inequities within the context of an interconnected system of upstream inequities.** In its depiction of its social and institutional inequities categories, the BARHII framework indicates a reinforcing relationship. This relationship, however, is not so explicitly captured in existing research. Root causes, such as structural racism, sexism and classism, that result in social inequities are often reinforced and upheld by, while simultaneously driving, institutional policies that lead to institutional inequity. In the context of the overdose epidemic, failure to examine these upstream factors as interconnected and evolving systems will hamper any efforts to reduce drug overdose inequities on a grander scale. Recently, Park et. al, published a conceptual framework which proposes a change in the ways persons understand and approach the opioid epidemic by shifting focus upstream to rectifying policy failures, addressing the social determinants of health, and developing meaningful partnerships with persons who have lived experience with using drugs, in the development of interventions rooted in harm reduction. (Park et al., 2020) These actions will require cross-sectoral partnerships and investments so that we can, not only address the root causes of drug overdose inequities but, rectify the ongoing harms caused with innovative, just and equitable policies and legislation.

CONCLUSIONS

Findings from this literature search identified both root causes of overdose inequity and gaps in drug overdose health equity research and practice. Among social inequities, most sources focused on inequities of race/ethnicity while gaps remain in assessing health inequities relating to LGBTQIA+, adolescent, gender-based, and immigrant populations. Across institutional inequities, policy was largely identified as having the ability to change upstream, institutional factors. However, gaps still exist in identifying underlying and historical root causes such as native genocide, slavery and historically unjust policies and legislation. Regarding social inequities, many demographic factors are being researched in silos without consideration for intersectional impacts of drug overdoses or the need for cross-sector collaboration to tackle root causes. Lastly, individual level drug overdose health inequities are being researched, but they are the outcome of social and institutional health inequities, not root causes. These factors should ultimately be considered amongst the interconnected system of upstream inequities.

“Healthcare systems, community leaders, and policymakers addressing the opioid epidemic should focus on upstream structural factors including education, economic opportunity, social cohesion, racial/ethnic disadvantage, geographic isolation, and life satisfaction.” (Singh et al., 2019)

More attention to upstream factors of drug overdose health inequities would likely have a positive effect on downstream factors. While this literature review provided a preliminary investigation into existing drug overdose health inequity literature, we recommend more research be done in these identified areas.



APPENDIX A. MATRIX OF LITERATURE – PUBMED SEARCH

	Resource Title	Type	Author(s)	URL
1	"Feeling Confident and Equipped": Evaluating the Acceptability and Efficacy of an Overdose Response and Naloxone Administration Intervention to Service Industry Employees in New York City	Journal Article	Wolfson-Stofko, Brett et al.	https://www.ncbi.nlm.nih.gov/pubmed/?term=%22Feeling+confident+and+equipped%22%3A+Evaluating+the+acceptability+and+efficacy+of+an+overdose+response+and+naloxone+administration+intervention+to+service+industry+employees+in+New+York+City
2	A Pilot Study of a Telemedicine-based Substance Use Disorder Evaluation to Enhance Access to Treatment Following Near-Fatal Opioid Overdose	Journal Article	Lai, Jeffrey T. et al.	https://www.ncbi.nlm.nih.gov/pubmed/32015694
3	A population-based study of sociodemographic and clinical factors among children and adolescents with opioid overdose	Journal Article	Abudu, Boya et al.	https://pubmed.ncbi.nlm.nih.gov/31255891/
4	A Public Health Strategy for the Opioid Crisis	Journal Article	Saloner, Brendan et al.	https://www.ncbi.nlm.nih.gov/pubmed/30426871
5	Action, Not Rhetoric, Needed to Reverse the Opioid Overdose Epidemic	Journal Article	Davis, Corey et al.	https://www.ncbi.nlm.nih.gov/pubmed/28661292
6	Addressing Excess Risk of Overdose Among Recently Incarcerated People in the USA: Harm Reduction Interventions in Correctional Settings	Journal Article	Brinkley-Rubinstein, Lauren et al.	https://www.ncbi.nlm.nih.gov/pubmed/28299971
7	America's Declining Well-Being, Health, and Life Expectancy: Not Just a White Problem	Journal Article	Muennig, Peter A. et al.	https://www.ncbi.nlm.nih.gov/pubmed/?term=America%27s+Declining+Well-Being%2C+Health%2C+and+Life+Expectancy%3A+Not+Just+a+White+Problem
8	Assessment of Racial/Ethnic and Income Disparities in the Prescription of Opioids and Other Controlled Medications in California	Journal Article	Friedman, Joseph et al.	https://www.ncbi.nlm.nih.gov/pubmed/30742196
9	Benzodiazepine Dependence among Young Adult Participants in the Club Scene Who Use Drugs	Journal Article	Kurtz, Steven P. et al.	https://www.ncbi.nlm.nih.gov/pubmed/28001962
10	Causes of Death After Nonfatal Opioid Overdose	Journal Article	Olfson, Mark et al.	https://www.ncbi.nlm.nih.gov/pubmed/29926090
11	Clinical Implications of Drug Abuse Epidemiology	Journal Article	Schulden, Jeffrey D. et al.	https://www.ncbi.nlm.nih.gov/pubmed/22640763
12	Closing the Gaps in Opioid Use Disorder Research, Policy, and Practice: Conference Proceedings	Journal Article	Miclette, Matthew A. et al.	https://www.ncbi.nlm.nih.gov/

13	Commentary: U.S. Mortality, Geography, and the Anti-Social Determinants of Health	Journal Article	Edwards, Ryan D.	https://www.ncbi.nlm.nih.gov/pubmed/27261412
14	County-Level Socioeconomic Factors and Residential Racial, Hispanic, Poverty, and Unemployment Segregation Associated With Drug Overdose Deaths in the United States, 2013-2017	Journal Article	Frankenfeld, Cara L.; Leslie, Timothy F.	https://www.ncbi.nlm.nih.gov/pubmed/31080000
15	Criminal Justice Continuum for Opioid Users At Risk Of Overdose	Journal Article	Brinkley-Rubinstein, Lauren et al.	https://www.ncbi.nlm.nih.gov/
16	Deaths of Despair in Florida: Assessing the Role of Social Determinants of Health	Journal Article	Zeglin, Robert J. et al.	https://www.ncbi.nlm.nih.gov/pubmed/30466318
17	Decrease in Rate of Opioid Analgesic Overdose Deaths - Staten Island, New York City, 2011-2013	Journal Article	Paone, Denise et al.	https://pubmed.ncbi.nlm.nih.gov/25974633/
18	Disparities in Access to Mental Health Services Among Patients Hospitalized for Deliberate Drug Overdose	Journal Article	Charron, Elizabeth et al.	https://pubmed.ncbi.nlm.nih.gov/31084295/
19	Disparities in Opioid Related Mortality Between United States Counties From 2000 To 2014	Journal Article	McClellan, Chandler B.	https://www.ncbi.nlm.nih.gov/pubmed/31054422
20	Disparity in Naloxone Administration by Emergency Medical Service Providers and The Burden of Drug Overdose in US Rural Communities	Journal Article	Faul, Mark; Dailey et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4455515/
21	Drivers of Opioid Use in Appalachian Pennsylvania: Cross-Cutting Social and Community-Level Factors	Journal Article	Thompson, Jessica R. et al.	https://www.ncbi.nlm.nih.gov/pubmed/32151913
22	Drug Overdose Mortality Among Residents of Single Room Occupancy Buildings In San Francisco, California, 2010-2017	Journal Article	Rowe, Christopher L. et al.	https://pubmed.ncbi.nlm.nih.gov/31581024/
23	Drug, Opioid-Involved, And Heroin-Involved Overdose Deaths Among American Indians And Alaska Natives - Washington, 1999-2015	Journal Article	Joshi, Sujata et al.	https://www.ncbi.nlm.nih.gov/pubmed/30571673
24	Drug-Induced Deaths - United States, 1999-2010	Journal Article	Mack, Karin A. et al.	https://www.ncbi.nlm.nih.gov/pubmed/24264508
25	Emergency Department-Based Opioid Harm Reduction: Moving Physicians from Willing to Doing	Journal Article	Samuels, Elizabeth A. et al.	https://www.ncbi.nlm.nih.gov/pubmed/26816030

26	Establishment of A Comprehensive Drug Overdose Fatality Surveillance System in Kentucky to Inform Drug Overdose Prevention Policies, Interventions and Best Practices	Journal Article	Hargrove, Sarah L. et al.	https://www.ncbi.nlm.nih.gov/pubmed/28739777
27	Evaluation of Machine-Learning Algorithms for Predicting Opioid Overdose Risk Among Medicare Beneficiaries with Opioid Prescriptions	Journal Article	Lo-Ciganic, Wei-Hsuan et al.	https://www.ncbi.nlm.nih.gov/pubmed/30901048
28	Evaluation of the Southern Harm Reduction Coalition for HIV Prevention: Advocacy Accomplishments	Journal Article	Story, Chandra R. et al.	https://www.ncbi.nlm.nih.gov/pubmed/29186992
29	Examining Racial/Ethnic Differences in Patterns of Benzodiazepine Prescription and Misuse	Journal Article	Cook, Benjamin et al.	https://www.ncbi.nlm.nih.gov/
30	Flumazenil, Naloxone and the 'Coma Cocktail'	Journal Article	Sivilotti, Marco L. A.	https://pubmed.ncbi.nlm.nih.gov/26469689/
31	From Peers to Lay Bystanders: Findings from a Decade of Naloxone Distribution in Pittsburgh, PA	Journal Article	Bennett, Alex S. et al.	https://www.ncbi.nlm.nih.gov/pubmed/29424656
32	Health Justice: A Framework (And Call to Action) For the Elimination of Health Inequity and Social Injustice	Journal Article	Benfer, Emily A.	https://www.ncbi.nlm.nih.gov/pubmed/28221739
33	Identifying Unreported Opioid Deaths Through Toxicology Data and Vital Records Linkage: Case Study in Marion County, Indiana, 2011-2016	Journal Article	Lowder, Evan M. et al.	https://www.ncbi.nlm.nih.gov/
34	Lay Responder Naloxone Access and Good Samaritan Law Compliance: Postcard Survey Results From 20 Indiana Counties	Journal Article	Watson, Dennis P. et al.	https://www.ncbi.nlm.nih.gov/
35	Medical Cannabis Laws and Opioid Analgesic Overdose Mortality in The United States, 1999-2010	Journal Article	Bachhuber, Marcus A. et al.	https://www.ncbi.nlm.nih.gov/pubmed/25154332
36	Medical Encounters for Opioid-Related Intoxications in Southern Nevada: Sociodemographic and Clinical Correlates	Journal Article	Feng, Jing; Iser, et al.	https://www.ncbi.nlm.nih.gov/pubmed/27557947
37	Mortality Among Homeless Adults in Boston: Shifts in Causes of Death Over A 15-Year Period	Journal Article	Baggett, Travis P. et al.	https://www.ncbi.nlm.nih.gov/pubmed/23318302

38	Mortality Quadrupled Among Opioid-Driven Hospitalizations, Notably Within Lower-Income and Disabled White Populations	Journal Article	Song, Zirui	https://www.ncbi.nlm.nih.gov/pubmed/29200349
39	Naloxone Urban Legends and The Opioid Crisis: What Is the Role of Public Health?	Journal Article	Crabtree, Alexis et al.	https://pubmed.ncbi.nlm.nih.gov/31146721/
40	Neuropharmacological And Neurogenetic Correlates of Opioid Use Disorder (OUD) as a Function of Ethnicity: Relevance to Precision Addiction Medicine	Journal Article	Abijo, Tomilowo et al.	https://pubmed.ncbi.nlm.nih.gov/31744450/
41	Non-Fatal Opioid-Related Overdoses Among Adolescents in Massachusetts 2012-2014	Journal Article	Chatterjee, Avik et al.	https://www.ncbi.nlm.nih.gov/pubmed/?term=Non-fatal+opioid-related+overdoses+among+adolescents+in+Massachusetts+2012-2014
42	Opioid Crisis: No Easy Fix to Its Social and Economic Determinants	Journal Article	Dasgupta, Nabarun et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5846593/
43	Opioid Epidemic in the United States: Empirical Trends, and a Literature Review of Social Determinants and Epidemiological, Pain Management, and Treatment Patterns	Journal Article	Singh, Gopal K. et al.	https://pubmed.ncbi.nlm.nih.gov/31723479/
44	Opioid Overdose Deaths in the City and County of San Francisco: Prevalence, Distribution, and Disparities	Journal Article	Visconti, Adam J. et al.	https://pubmed.ncbi.nlm.nih.gov/26077643/
45	Opioid Overdose Prevention in Family Medicine Clerkships: A CERA Study	Journal Article	Gano, Laura et al.	https://www.ncbi.nlm.nih.gov/
46	Patterns of Opioid Prescriptions Received Prior To Unintentional Prescription Opioid Overdose Death Among Veterans	Journal Article	Moyo, Patience et al.	https://www.ncbi.nlm.nih.gov/
47	Premature Mortality from All Causes and Drug Poisonings in The USA According to Socioeconomic Status and Rurality: An Analysis of Death Certificate Data by County From 2000-15	Journal Article	Shiels, Meredith S. et al.	https://www.ncbi.nlm.nih.gov/pubmed/30655229
48	Prescription Opioid Exposures and Adverse Outcomes Among Older Adults	Journal Article	West, Nancy A. et al.	https://pubmed.ncbi.nlm.nih.gov/26660909/
49	Prescription Opioid Misuse Among Adolescents	Journal Article	Ford, Jason A.	https://pubmed.ncbi.nlm.nih.gov/31679600/
50	Protocol for Evaluating the Nationwide Implementation of The VA Stratification Tool for Opioid Risk Management (STORM)	Journal Article	Chinman, Matthew et al.	https://www.ncbi.nlm.nih.gov/pubmed/30658658

51	Public Libraries as Partners in Confronting the Overdose Crisis: A Qualitative Analysis	Journal Article	Lowenstein, Margaret et al.	https://www.ncbi.nlm.nih.gov/pubmed/31852402
52	Racial Differences in Overdose Events and Polydrug Detection in Indianapolis, Indiana	Journal Article	Ray, Bradley et al.	https://pubmed.ncbi.nlm.nih.gov/31734032/
53	Racial Disparities in The Treatment of Acute Overdose in the Emergency Department	Journal Article	Wilder, Marcee E. et al.	https://www.ncbi.nlm.nih.gov/
54	Recent Trends in US Mortality in Early and Middle Adulthood: Racial/Ethnic Disparities in Inter-Cohort Patterns	Journal Article	Zang, Emma et al.	https://www.ncbi.nlm.nih.gov/pubmed/30508118
55	Rising Geographic Inequality in Mortality in The United States	Journal Article	Vierboom, Yana C. et al.	https://pubmed.ncbi.nlm.nih.gov/31649997/
56	Risk of Fentanyl-Involved Overdose Among Those with Past Year Incarceration: Findings from A Recent Outbreak In 2014 And 2015	Journal Article	Brinkley-Rubinstein, Lauren et al.	https://www.ncbi.nlm.nih.gov/pubmed/29459328
57	Social and Economic Characteristics of Those Experiencing Hospitalizations Due to Opioid Poisonings	Journal Article	Carrière, Gisèle et al.	https://www.ncbi.nlm.nih.gov/
58	Sociodemographic Factors and Social Determinants Associated with Toxicology Confirmed Polysubstance Opioid-Related Deaths	Journal Article	Barocas, Joshua A. et al.	https://pubmed.ncbi.nlm.nih.gov/31100636/
59	Solidarity and Disparity: Declining Labor Union Density and Changing Racial and Educational Mortality Inequities in the United States	Journal Article	Eisenberg-Guyot, Jerzy et al.	https://www.ncbi.nlm.nih.gov/pubmed/31845387
60	Spatial Epidemiology of Alcohol- and Drug-Related Health Problems Among Northern Plains American Indians: Nebraska and South Dakota, 2007 To 2012	Journal Article	Ponicki, William R. et al.	https://www.ncbi.nlm.nih.gov/pubmed/29381219
61	State Unintentional Drug Overdose Reporting Surveillance: Opioid Overdose Deaths and Characteristics In Rhode Island	Journal Article	Jiang, Yongwen et al.	https://www.ncbi.nlm.nih.gov/
62	Syringe Decriminalization Advocacy in Red States: Lessons from The North Carolina Harm Reduction Coalition	Journal Article	Cloud, David H. et al.	https://www.ncbi.nlm.nih.gov/
63	The Opioid Crisis, Suicides, and Related Conditions: Multiple Clustered Syndemics, Not Singular Epidemics	Journal Article	Fornili, Katherine	https://www.ncbi.nlm.nih.gov/

64	The Opioid Epidemic in Indian Country	Journal Article	Tipps, Robin T. et al.	https://www.ncbi.nlm.nih.gov/pubmed/30146999
65	The Tripping Point: The Potential Role of Psychedelic-Assisted Therapy in the Response to the Opioid Crisis	Journal Article	Argento, Elena et al	https://www.ncbi.nlm.nih.gov/pubmed/30743091
66	The Value of Harm Reduction for Injection Drug Use: A Clinical and Public Health Ethics Analysis	Journal Article	Vearrier, Laura	https://www.ncbi.nlm.nih.gov/pubmed/30600096
67	Unclassified Drug Overdose Deaths in The Opioid Crisis: Emerging Patterns of Inequity	Journal Article	Boslett, Andrew J. et al.	https://www.ncbi.nlm.nih.gov/pubmed/31034076
68	Urban, Individuals of Color Are Impacted by Fentanyl-Contaminated Heroin	Journal Article	Rhodes, Blythe et al.	https://pubmed.ncbi.nlm.nih.gov/31330274/
69	Urban-Rural Variation in The Socioeconomic Determinants of Opioid Overdose	Journal Article	Pear, Veronica A. et al.	https://www.ncbi.nlm.nih.gov/pubmed/30592998
70	US Regional and Demographic Differences in Prescription Opioid and Heroin-Related Overdose Hospitalizations	Journal Article	Unick, George Jay; Ciccarone, Daniel	https://www.ncbi.nlm.nih.gov/pubmed/28688539
71	Weathering, Drugs, And Whack-A-Mole: Fundamental and Proximate Causes of Widening Educational Inequity in U.S. Life Expectancy by Sex and Race, 1990-2015	Journal Article	Geronimus, Arline T. et al.	https://pubmed.ncbi.nlm.nih.gov/31190569/
72	Where Next for Opioids and The Law? Despair, Harm Reduction, Lawsuits, And Regulatory Reform	Journal Article	Burris, Scott	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5805103/
73	Why Lifespans Are More Variable Among Blacks Than Among Whites in The United States	Journal Article	Firebaugh, Glenn et al.	https://www.ncbi.nlm.nih.gov/pubmed/25391224
74	Widening Disparities in Infant Mortality and Life Expectancy Between Appalachia and the Rest of The United States, 1990-2013	Journal Article	Singh, Gopal K. et al.	https://www.ncbi.nlm.nih.gov/pubmed/28784735

APPENDIX B. MATRIX OF LITERATURE – GOOGLE SCHOLAR SEARCH

	Resource Title	Type	Author(s)	URL
1	A Biopsychosocial Overview of the Opioid Crisis: Considering Nutrition and Gastrointestinal Health	Journal Article	Wiss, David A.	https://www.frontiersin.org/articles/10.3389/fpubh.2019.00193/full
2	A systematic scoping review of research on Black participants in the National Drug Abuse Treatment Clinical Trials Network.	Journal Article	Montgomery, L et al.	https://psycnet.apa.org/journals/adb/34/1/117/
3	Addiction as Disease	Report	Brown, Teneille R.	https://papers.ssrn.com/abstract=3345176
4	Addressing Health Inequities in New Mexico The Role of The New Mexico Public Health Institute	Report	Despres, Renee	http://swchi.org/wp-content/uploads/2018/05/NMPHI_New-Mexico-Profile.FINAL_2017.pdf
5	Adverse Experiences, Mental Health, And Substance Use Disorders as Social Determinants of Incarceration	Journal Article	Henry, Brandy F.	https://onlinelibrary.wiley.com/doi/abs/10.1002/jcop.22289
6	An Evaluation of The Pre-Release Planning Program of The Georgia Department of Corrections and A Qualitative Assessment of Reentry Experiences of Program Participants	Journal Article	McCullough, Alison N.	https://scholarworks.gsu.edu/cgi/viewcontent.cgi?article=1197&context=iph_theses
7	An Investigative Analysis of Social and Economic Factors Impacting Health in Rockford	Report	Robert Freidel, BS, MD et al	https://www.rockfordhealthcouncil.org/RHorg2013/wp-content/uploads/2018/06/BF-2018.05.04-Freidel-Analysis-of-Social-and-Economic-Factors.pdf
8	Association Between Automotive Assembly Plant Closures and Opioid Overdose Mortality in The United States: A Difference-In-Differences Analysis	Journal Article	Venkataramani, Atheendar S et al.	https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2757788
9	Association of Early Physical Therapy with Long-Term Opioid Use Among Opioid-Naive Patients with Musculoskeletal Pain	Journal Article	Sun, Eric et al.	https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2718095
10	Associations Between Neighborhood-Level Factors and Opioid-Related Mortality: A Multilevel Analysis Using Death Certificate Data	Journal Article	Flores, Michael William et al.	https://onlinelibrary.wiley.com/doi/abs/10.1111/add.15009

11	Between the Lines: Understanding Our Country's Racialized Response to The Opioid Overdose Epidemic	Report	Isha Weerasinghe, Yesenia Jimenez, Bruce Wilson	https://www.clasp.org/sites/default/files/
12	Brief Motivational Interview–Based Intervention for Women in Jail with History of Drug Addiction and Sex-Trading.	Journal Article	Cigrang, J. A. et al	https://psycnet.apa.org/record/2020-06637-005
13	Characteristics and Patterns of Opioid-Related Overdoses Among Veterans	Journal Article	Warfield, Sara	https://researchrepository.wvu.edu/etd/3902
14	City and Community Health Profiles: City of Los Angeles	Report	County of Los Angeles Public Health	http://publichealth.lacounty.gov/ohae/docs/cchp/PDF/2018/CityofLosAngeles.pdf
15	Communities are attempting to tackle the crisis": a scoping review on community plans to prevent and reduce opioid-related harms	Journal Article	Leece, Pamela et al.	https://pdfs.semanticscholar.org/
16	Community Forums to Address the Opioid Crisis: An Effective Grassroots Approach to Rural Community Engagement	Journal Article	Palombi, Laura et al.	https://doi.org/10.1177/1178221819827595
17	Conceptualizing Neonatal Abstinence Syndrome as a Cascade of Care: A Qualitative Study with Healthcare Providers in Ohio	Journal Article	Syvertsen, Jennifer L et al.	https://journals.lww.com/advancesinneonatalcare/Abstract/2018/12000/Conceptualizing_Neonatal_Abstinence_Syndrome_as_a.11.aspx
18	County-level factors underlying opioid mortality in the United States	Journal Article	Langabeer, James R et al.	https://doi.org/10.1080/08897077.2020.1740379
19	Crippling Addiction and Liberating People Who Use Drugs: A Bioethics of Disease, Diagnosis, Disability, and Divinity in Substance Use and Harm Reduction	Thesis	Howell-Miller, Sarah Stockton	https://wakespace.lib.wfu.edu/handle/10339/94312
20	Cross-Cutting Narratives of Opioid Use Disorder Among Pregnant Women and Mothers: Implications for Humanistic Care	Journal Article	Fiddian-Green, Alice	https://scholarworks.umass.edu/dissertations_2/1718
21	Deaths of Despair among Non-Hispanic Whites in the U.S.: Differences along the Urban-Rural Continuum	Journal Article	Monnat, Shannon M.	https://paa.confex.com/paa/2018/mediafile/ExtendedAbstract/Paper20876/PAA2018_FullPaper.pdf
22	Deaths of despair in Florida: assessing the role of social determinants of health	Journal Article	Zeglin, Robert J et al.	https://journals.sagepub.com/doi/abs/10.1177/1090198118811888

23	Drivers of opioid use in Appalachian Pennsylvania: Cross-cutting social and community-level factors	Journal Article	Thompson, Jessica R et al.	http://www.sciencedirect.com/science/article/pii/S0955395920300475
24	Dual Receipt of Prescription Opioids and Prescription Opioid Overdose Death Annals of Internal Medicine American College of Physicians		Moyo, Patience, PhD et al.	https://annals.org/aim/article-abstract/2728200/dual-receipt-prescription-opioids-from-department-veterans-affairs-medicare-part
25	Effectiveness and Availability of Treatment for Substance Use Disorders		Hodgkin, Dominic; Connery, Hilary S.	https://oxfordre.com/economics/view/10.1093/acrefore/9780190625979.001.0001/acrefore-9780190625979-e-103
26	Effects of Competing Narratives on Public Perceptions of Opioid Pain Reliever Addiction During Pregnancy	Journal Article	Kennedy-Hendricks, Alene et al.	https://read.dukeupress.edu/jhppl/article-abstract/41/5/873/13824/Effects-of-Competing-Narratives-on-Public
27	Emergency Physician Opioid Prescribing and Risk of Long-term Use in the Veterans Health Administration: An Observational Analysis	Journal Article	Barnett, Michael L et al.	https://doi.org/10.1007/s11606-019-05023-5
28	Estimating the Magnitude and Characteristics of Prescription Opioid Injection Misuse and the Role of Syringe Services Programs in Response to the Opioid Crisis in the United States – ProQuest		Jones, Christopher McCall.	https://search.proquest.com/openview/ea5743487b3714ea682ed5661e0c8dd3/1?pq-origsite=gscholar&cbl=18750&diss=y
29	Evaluating opioid overdose using the National Violent Death Reporting System, 2016	Journal Article	Clinton, Heather A et al.	http://www.sciencedirect.com/science/article/pii/S037687161830810X
30	Factors associated with county-level differences in US drug-related mortality rates	Journal Article	Monnat, Shannon M.	https://www.ncbi.nlm.nih.gov/pubmed/29598858
31	Five Rivers Family Health Center Community Health Needs Assessment	Thesis	Yutzy, Kara	http://corescholar.libraries.wright.edu/cgi/viewcontent.cgi?article=1181&context=mph
32	Foundations of addictive problems in adolescents: Developmental and social factors	Book Chapter	Preyde, Michèle et al.	http://www.sciencedirect.com/science/article/pii/B9780128186268000013
33	Framing the Opioid Crisis: Do Racial Frames Shape Beliefs of Whites Losing Ground?	Journal Article	Gollust, Sarah E.; Miller, Joanne M.	https://read.dukeupress.edu/jhppl/article/45/2/241/143966/Framing-the-Opioid-Crisis-Do-Racial-Frames-Shape

34	From Health Policy to Stigma and Back Again: The Feedback Loop Perpetuating the Opioids Crisis		Terry, Nicholas	https://heinonline.org/HOL/Page?handle=hein.journals/utahlr2019&div=30&g_sent=1&casa_token=
35	Geographic distribution of risk ("Hotspots") for HIV, HCV, and drug overdose among persons who use drugs in New York City: the importance of local history	Journal Article	Des Jarlais, D.C et al.	https://doi.org/10.1186/s12954-019-0326-2
36	Geriatric Opioid Harm Reduction: Interprofessional Student Learning Outcomes	Journal Article	Zanjani, Faika et al.	https://doi.org/10.1177/2333721420908985
37	Getting Out of the Ghetto: Harm Reduction, Drug User Health, and the Transformation of Social Policy in New York	Thesis	Rachel Faulkner-Gurstein	http://academicworks.cuny.edu/cgi/viewcontent.cgi?article=1932&context=gc_etds
38	Health and Justice: Framing incarceration as a social determinant of health for Black men in the United States	Journal Article	Nowotny, Kathryn M et al.	https://onlinelibrary.wiley.com/doi/abs/10.1111/soc4.12566
39	Health care providers' relational approaches with people who inject drugs (PWIDs): Implications for PWIDs' health care	Thesis	Adelugba, Olubusola A.	https://harvest.usask.ca/handle/10388/10033
40	Health informatics and health equity: improving our reach and impact	Journal Article	et al.	https://academic.oup.com/jamia/article/26/8-9/689/5549815
41	Health Promotion Quarterly: A publication from the College of Health, Human Services, and Science	Report	Ashford University	https://edgecastcdn.net/006FDC/AU/PDF/Health%20Promotion%20Quarterly%20newsletter%20-%20July%202018.pdf
42	Hispanos in the Valley Of Death: Street-Level Trauma, Cultural-Post Traumatic Stress Disorder, Overdoses, and Suicides In North Central New Mexico	Thesis	La Luz Baez, W. Azul	https://pdfs.semanticscholar.org/6ccf/

43	Housing as A Social Determinant of Health: Exploring The Relationship Between Rent Burden And Risk Behaviors For Single Room Occupancy Building Residents	Journal Article	Bowen, Elizabeth et al.	https://www.researchgate.net/profile/Elizabeth_Bowen3/publication/302969397_Housing_as_a_Social_Determinant_of_Health_Exploring_the_Relationship_between_Rent_Burden_and_Risk_Behaviors_for_Single_Room_Occupancy_Building_Residents/links/585845fa08aeffd7c4fbb4bb/Housing-as-a-Social-Determinant-of-Health-Exploring-the-Relationship-between-Rent-Burden-and-Risk-Behaviors-for-Single-Room-Occupancy-Building-Residents.pdf
44	Housing Options for Recovery for Individuals with Opioid Use Disorder: A Literature Review		Brandy E. Wyant et al.	https://aspe.hhs.gov/basic-report/housing-options-recovery-individuals-opioid-use-disorder-literature-review
45	How does a drug court experience influence student pharmacists?	Journal Article	Palombi, Laura C. et al.	http://www.sciencedirect.com/science/article/pii/S187712971730446X
46	How Should the United States Respond to the Opioid Addiction and Overdose Epidemic?	Book Chapter	Humphreys, Keith; Pollack, Harold A.	https://doi.org/10.1007/978-3-030-11908-9_10
47	Imprisonment, opioids and health care reform: The failure to reach a high-risk population	Journal Article	Hagan, John; Foster, Holly	http://www.sciencedirect.com/science/article/pii/S0091743519303779
48	Individual and community characteristics associated with premature natural and drug-related deaths in 25–59-year-old decedents	Journal Article	Drake, Stacy A et al.	http://dx.plos.org/10.1371/journal.pone.0212026
49	Injection Drug Use Trajectories among Migrant Populations: A Narrative Review	Journal Article	Melo, Jason S et al.	https://doi.org/10.1080/10826084.2017.1416404
50	Integrated Prevention Services for HIV Infection, Viral Hepatitis, Sexually Transmitted Diseases, and Tuberculosis for Persons Who Use Drugs Illicitly: Summary Guidance from CDC and the U.S. Department of Health and Human Services	Journal Article	Belani, Hrishikesh et al.	https://www.jstor.org/stable/24832539
51	Intersectional inequalities and the U.S. opioid crisis: challenging dominant narratives and revealing heterogeneities	Journal Article	Persmark, Anna et al.	https://doi.org/10.1080/09581596.2019.1626002

52	Interventions for the prevention of opiate use disorder in patients with high adverse childhood experience scores in northern New Mexico: a qualitative project	Journal Article	Clawson, Kendra Sweeney	https://scholarworks.montana.edu/xmlui/handle/1/15529
53	Issue Brief: Health Disparities Related to Opioid Misuse in Appalachia – Creating a Culture of Health in Appalachia		Creating a Culture of Health in Appalachia	https://healthinappalachia.org/issue-briefs/opioid-misuse/
54	Legalizing Harm Reduction	Report	Hoss, Aila	https://papers.ssrn.com/abstract=3439679
55	Leveraging Medicaid to Address Opioid and Substance Use Disorders in Maine	Report	Lisa Clemans-Cope et al.	https://www.urban.org/sites/default/files/publication/100443/2019.06.20_maine_care_report_final_6.pdf
56	Linking Opioid-Overdose Data to Human Services and Criminal Justice Data: Opportunities for Intervention	Journal Article	Hacker, Karen et al.	https://doi.org/10.1177/0033354918803938
57	Measure of Intention to Provide Patient-centered Care to People Experiencing Opioid Addiction and Overdose Among EMS Providers in the State of Maine	Thesis	Allen, Denise Roberta	https://doi.org/10.7916/D8BV8V5C
58	Measuring Efforts of Nonprofit Hospitals to Address Opioid Abuse After the Affordable Care Act	Journal Article	Franz, Berkeley et al.	https://doi.org/10.1177/2150132719863611
59	Methods for Population Research on Substance Use and Consequences	Journal Article	Wolfson, Mark et al.	https://link.springer.com/chapter/10.1007/164_2019_319
60	Mortality Among Black Men in the USA	Journal Article	Pathak, Elizabeth B.	https://doi.org/10.1007/s40615-017-0341-5
61	Motivational Interviewing and Culture for Urban Native American Youth (MICUNAY): A Randomized Controlled Trial	Journal Article	D'Amico, Elizabeth J et al.	http://www.sciencedirect.com/science/article/pii/S0740547219302715
62	Moving Away from The Tip of The Pyramid: Screening and Brief Intervention For Risky Alcohol and Opioid Use in Underserved Patients	Journal Article	Venner, Kamilla L.; Sánchez, Victoria; Garcia, Jacqueline; Williams, Robert L.; Sussman, Andrew L.	https://www.ncbi.nlm.nih.gov/pubmed/29535241
63	Non-Fatal Opioid Overdose and Associated Health Outcomes: Final Summary Report		Jon Zibbell, PhD et al.	https://aspe.hhs.gov/basic-report/non-fatal-opioid-overdose-and-associated-health-outcomes-final-summary-report

64	Oblivion: A Journey into America's Overdose Crisis – ProQuest		Siegel, Zachary et al.	https://search.proquest.com/openview/ed83bcc0a398c3c74af74478e470fa9b/1?pq-origsite=gscholar&cbl=18750&diss=y
65	One Out of Ten Ain't Going to Make It: An Analysis of Recovery Capital in the Rural Upper Midwest	Journal Article	Palombi, Laura; Hawthorne, Amanda N.; Irish, Andrew; Becher, Emily; Bowen, Elizabeth	https://doi.org/10.1177/0022042619859309
66	Opioid and Stimulant Use Among A Sample of Corrections-Involved Drug Users: Seeking an Understanding of High-Risk Drug Decisions Within A System of Constraint.	Journal Article	Smith, Kirsten	https://ir.library.louisville.edu/etd/3259
67	Opioid Crisis: Another Mechanism Used to Perpetuate American Racism.	Journal Article	Hart, C. L., & Hart, M. Z.	https://psycnet.apa.org/record/2019-05157-002
68	Opioid Crisis: No Easy Fix to Its Social and Economic Determinants	Journal Article	Dasgupta, Nabarun; Beletsky, Leo; Ciccarone, Daniel	https://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2017.304187
69	Opioid Epidemic in the United States: Empirical Trends, and A Literature Review of Social Determinants and Epidemiological, Pain Management, and Treatment Patterns	Journal Article	Singh, Gopal K. et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6804319/
70	Opioid Prescribing in Rural Family Practices: A Qualitative Study	Journal Article	Click, Ivy A. et al.	https://doi.org/10.1080/10826084.2017.1342659
71	Opioid-Related Overdose Deaths by Race and Neighborhood Economic Hardship in Chicago	Journal Article	Rushovich, Tamara et al.	https://doi.org/10.1080/15332640.2019.1704335
72	Oregon Health Authority: 2015–2018 Behavioral Health Strategic Plan	Report	Oregon Health Authority	http://www.mentalhealthportland.org/wp-content/uploads/2019/11/Behavioral-Health-Strategic-Plan-2015-2018.pdf
73	Overlapping Opioid and Benzodiazepine Prescriptions Among Veterans Annals of Internal Medicine American College of Physicians		Carico, Ron, PharmD, MPH et al.	https://annals.org/aim/article-abstract/2706439/receipt-overlapping-opioid-benzodiazepine-prescriptions-among-veterans-dually-enrolled-medicare
74	Pregnant and Parenting Women with a Substance Use Disorder: Actions and Policy for Enduring Therapeutic Practice	Journal Article	Jessup, Martha A et al.	https://www.nursingoutlook.org/article/S0029-6554(19)30094-6/abstract

75	Prevalence and Risk Factors of Nonmedical Prescription Opioid Use Among Transgender Girls and Young Women	Journal Article	Restar, Arjee J. et al.	https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2762790
76	Prevention, Treatment, and Recovery: Toward a 10-Year Plan for Improving Mental Health and Wellness in Tulsa	Report		https://www.tulsamentalhealth.org/pdf/TulsaReport_FINAL.pdf
77	Racial Discrimination in Medical Care Settings and Opioid Pain Reliever Misuse in a U.S. Cohort: 1992 To 2015	Journal Article	Swift, Samuel L. et al.	https://dx.plos.org/10.1371/journal.pone.0226490
78	Racial/Ethnic Differences in the Medical Treatment of Opioid Use Disorders Within the VA Healthcare System Following Non-Fatal Opioid Overdose	Journal Article	Essien, Utibe R. et al.	https://doi.org/10.1007/s11606-020-05645-0
79	Reducing Opioid Overdose Deaths in Minnesota: Insights From One Tribal Nation	Report	Greenfield, Brenna et al.	https://ndews.umd.edu/sites/ndews.umd.edu/files/pubs/MinnesotaHotSpotReport-December-2019-FINAL.pdf
80	Rhode Island's Health Equity Zones: Addressing Local Problems with Local Solutions	Journal Article	Alexander-Scott, MD, MPH et al.	https://digitalscholarship.unlv.edu/jhdrp/vol9/iss6/5
81	Sexual Minority Disparities in Opioid Misuse, Perceived Heroin Risk and Heroin Access Among a National Sample of US Adults	Journal Article	Schuler, Megan S.; Dick, Andrew W.; Stein, Bradley D.	http://www.sciencedirect.com/science/article/pii/S0376871619301747
82	Shared Responsibility: Massachusetts Legislators, Physicians, and An Act Relative to Substance Use Treatment, Education, and Prevention	Journal Article	Rudder, Meghan; Tsao, Lulu; Jack, Helen E.	https://journalofethics.ama-assn.org/article/shared-responsibility-massachusetts-legislators-physicians-and-act-relative-substance-use-treatment/2016-09
83	Social Determinants of Health in the United States: Addressing Major Health Inequality Trends for The Nation, 1935-2016	Journal Article	Singh, Gopal K et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5777389/
84	Social Disparities in the Epidemiology and Treatment of Substance-Related Use Disorders in The United States, 2002-16	Thesis	Yang, Justin Christopher	https://www.repository.cam.ac.uk/handle/1810/296192
85	Sociodemographic Factors and Social Determinants Associated with Toxicology Confirmed Polysubstance Opioid-Related Deaths	Journal Article	Barocas, Joshua A et al.	https://www.ncbi.nlm.nih.gov/pubmed/31100636

86	Socioeconomic Risk Factors for Fatal Opioid Overdoses in The United States: Findings from The Mortality Disparities In American Communities Study (MDAC)	Journal Article	Altekruse, Sean F.; Cosgrove, Candace M.; Altekruse, William C.; Jenkins, Richard A.; Blanco, Carlos	https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0227966
87	Socioeconomic Status, Fundamental Cause Theory, and Prescription Opioid Use Behaviors: A Theoretical Examination	Journal Article	Jr, Harvey L. Nicholson	https://doi.org/10.1080/02732173.2019.1707138
88	State Options for Promoting Recovery Among Pregnant and Parenting Women with Opioid or Substance Use Disorder	Report	Becky Normile, Carrie Hanlon, and Hannah Eichner	https://nashp.org/wp-content/uploads/2018/10/NOSLO-Opioids-and-Women-Final.pdf
89	State Strategies to Address Opioid Use Disorder Among Pregnant and Postpartum Women and Infants Prenatally Exposed to Substances, Including Infants with Neonatal Abstinence Syndrome	Journal Article	Kroelinger, Charlan D et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6753967/
90	State Strategies to Address Opioid Use Disorder Among Pregnant and Postpartum Women and Infants Prenatally Exposed to Substances, Including Infants with Neonatal Abstinence Syndrome		Kroelinger, Charlan D. et al.	https://www.cdc.gov/mmwr/volumes/68/wr/mm6836a1.htm
91	Steps Toward A Theory of Place Effects on Drug Use: Risk, Marginality, and Opportunity in Small and Remote California Towns	Journal Article	Showalter, David	http://www.sciencedirect.com/science/article/pii/S0955395919303433
92	Structural Factors Shape the Effects of The Opioid Epidemic on Pregnant Women and Infants	Journal Article	Kozhimannil, Katy B.; Admon, Lindsay K.	https://jamanetwork.com/journals/jama/fullarticle/2722750
93	Structural Racism and the Opioid Overdose Epidemic: The Need for Antiracist Public Health Practice	Journal Article	Kunins, Hillary V.	https://journals.lww.com/jphmp/Citation/2020/05000/Structural_Racism_and_the_Opioid_Overdose.1.aspx?context=LatestArticles
94	Substance Use and Population Life Expectancy in the USA: Interactions with Health Inequalities and Implications for Policy	Journal Article	Imtiaz, Sameer; Probst, Charlotte; Rehm, Jürgen	https://onlinelibrary.wiley.com/doi/abs/10.1111/dar.12616

95	Substance Use Disorders in Pregnancy: Clinical, Ethical, and Research Imperatives of the Opioid Epidemic: A Report Of A Joint Workshop Of The Society For Maternal-Fetal Medicine, American College of Obstetricians and Gynecologists, and American Society of Addiction Medicine	Report	Ecker, Jeffrey et al.	https://ilpqc.org/wp-content/uploads/2020/03/
96	Substance Use in rural Central Appalachia: Status and treatment considerations.	Journal Article	Moody, L. N., Satterwhite, E., & Bickel, W. K.	https://psycnet.apa.org/record/2017-41452-002
97	Substance Use Issues Among the Underserved: United States and International Perspectives	Journal Article	Kowalchuk, Alicia Ann et al.	https://www.primarycare.theclinics.com/article/S0095-4543(16)30070-7/abstract
98	Systemic Issues in the Opioid Epidemic: Supporting the Individual, Family, and Community	Journal Article	Vincenzenes, Kristin A. et al.	https://doi.org/10.1007/s11469-018-0041-3
99	The Changing Opioid Crisis: Development, Challenges, and Opportunities	Journal Article	Volkow, Nora D.; Blanco, Carlos	https://www.nature.com/articles/s41380-020-0661-4
100	The Contributions of Socioeconomic and Opioid Supply Factors to U.S. Drug Mortality Rates: Urban-Rural and Within-Rural Differences	Journal Article	Monnat, Shannon M.	http://www.sciencedirect.com/science/article/pii/S0743016717312500
101	The Enemy Between Us: the Psychological and Social Costs of Inequality	Journal Article	Wilkinson, Richard G.; Pickett, Kate E.	https://onlinelibrary.wiley.com/doi/abs/10.1002/ejsp.2275
102	The Epidemiology of Opioid Overdose in Flint and Genesee County, Michigan: Implications for Public Health Practice and Intervention	Journal Article	Sadler, Richard C.; Furr-Holden, Debra	http://www.sciencedirect.com/science/article/pii/S0376871619303370
103	The Impact of Community Engagement on Health, Social, and Utilization Outcomes in Depressed, Impoverished Populations: Secondary Findings from a Randomized Trial	Journal Article	Lam, Christine A. et al.	https://www.jabfm.org/content/29/3/325
104	The Impact of Opioids and Other Drugs in Hastings and Prince Edward Counties	Report	Hastings Prince Edward Public Health	https://hpepublichealth.ca/wp-content/uploads/2019/11/Situational-Assessment-Opioid-and-Other-Drugs-Final.pdf

105	The Increasing Number of Opioid Overdose Deaths in the United States—A Brief Overview	Report	Society of Actuaries	https://www.soa.org/globalassets/assets/Library/Newsletters/Health-Watch-Newsletter/2017/march/hsn-2017-iss82.pdf
106	The Intersection of Opioids and Hepatitis C Virus in A Rural Pennsylvania County - Improvements in Policy	Thesis	Annarumo, Cheyenne; Frank, Linda; Diergaarde, Brenda	http://d-scholarship.pitt.edu/38060/
107	The Kids Are Not Alright: Leveraging Existing Health Law to Attack the Opioid Crisis Upstream		HEIN Online	https://heinonline.org/HOL/Page?handle=hein.journals/uflr71&div=24&g_sent=1&casa_token=
108	The Mortality Penalty of Incarceration: Evidence from a Population-based Case-control Study of Working-age Males	Journal Article	Pridemore, William Alex	https://doi.org/10.1177/0022146514533119
109	The Public Health PBRN Program: A Summative Report	Report	Mays, Glen P.	https://works.bepress.com/glen_mays/132/download/
110	The Rhetoric of the Opioid Crisis and Addiction to Prescription Pain Medicine	Journal Article	Kaplan, Rachel	https://dsc.duq.edu/etd/1452
111	The Underlying Determinants and Impacts of the Substance Abuse Crisis in Knox, Whitley, and Laurel Counties	Journal Article	Rhodes, Mikaela	https://encompass.eku.edu/honors_theses/629
112	Toward a United States of Health: Implications of Understanding the US Burden of Disease	Journal Article	Koh, Howard K.; Parekh, Anand K.	https://jamanetwork.com/journals/jama/fullarticle/2678000
113	Traditional and Nontraditional Collaborations to Improve Population Health Using Geospatial Information System Maps: Analysis of the Opioid Crisis	Journal Article	Hallas, Donna et al.	http://www.sciencedirect.com/science/article/pii/S0891524518304413
114	Treatment outcome disparities for opioid users: Are there racial and ethnic differences in treatment completion across large US metropolitan areas?	Journal Article	Stahler, Gerald J et al.	http://www.sciencedirect.com/science/article/pii/S0376871618303636
115	Trends and Patterns of Geographic Variation in Opioid Prescribing Practices by State, United States, 2006-2017	Journal Article		https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2728005
116	Underserved Populations	Book Chapter	Iheanacho, Theddeus; et al.	https://doi.org/10.1007/978-3-030-33404-8_18

117	Understanding and Addressing Adversity as a Risk Factor for Substance Abuse in Young People an Informational Guide for Prevention-Oriented Professionals	Report	Pat Shea, MSW, MA et al.	https://www.nasmhpd.org/sites/default/files/Resource%20Guide%20on%20Adversity%20as%20a%20Risk%20Factor%20for%20Substance%20Abuse%20in%20Young%20People.pdf
118	Underutilization of medications to treat opioid use disorder: What role does stigma play?	Journal Article	Allen, Bennett et al.	https://doi.org/10.1080/08897077.2019.1640833
119	We don't get much of a voice about anything: perspectives on photovoice among people who inject drugs	Journal Article	Drainoni, Mari-Lynn et al.	https://doi.org/10.1186/s12954-019-0334-2
120	Weathering, Drugs, and Whack-a-Mole: Fundamental and Proximate Causes of Widening Educational Inequity in U.S. Life Expectancy by Sex and Race, 1990–2015	Journal Article	Geronimus, Arline et al.	https://doi.org/10.1177/0022146519849932
121	Why are death rates rising in the White populations of Kansas?	Report	Steven H. Woolf, MD, MPH et al.	https://www.khi.org/assets/uploads/news/14831/mortality_study_final.pdf
122	Wu, S., Yan, S., Marsiglia, FF & Perron, B. (2020). Patterns and social determinants of substance use among Arizona youth: A latent class analysis approach. Children and Youth Services Review. Advance online publication.	Journal Article	Wu, Shiyou; Yan, Shi	https://www.researchgate.net/profile/Shi_Yan11/publication/338659804_Patterns_and_Social_Determinants_of_Substance_Use_among_Arizona_Youth_A_Latent_Class_Analysis_Approach/links/5e3710a6458515072d7a051e/Patterns-and-Social-Determinants-of-Substance-Use-among-Arizona-Youth-A-Latent-Class-Analysis-Approach.pdf
123	Your Neighborhood Matters: An Ecological Analysis of Neighborhood Disadvantage and Fatal Opioid Overdose in Nevada	Journal Article	Miceli, David P.	https://scholarworks.unr.edu/handle/11714/6696

APPENDIX C. MATRIX OF LITERATURE – TAILORED ORGANIZATION SEARCH

	Resource Title	Type	Author(s)	URL
1	2018 National Survey on Drug Use and Health: African Americans	Report	National Survey on Drug Use and Health	https://www.samhsa.gov/behavioral-health-equity/black-african-american
2	2018 National Survey on Drug Use and Health: American Indians And Alaska Natives (AI/ANs)	Report	National Survey on Drug Use and Health	https://www.samhsa.gov/data/report/2018-nsduh-american-indians-and-alaska-natives
3	2018 National Survey on Drug Use and Health: Asians/Native Hawaiians and Other Pacific Islanders (NHOP)	Report	National Survey on Drug Use and Health	https://www.samhsa.gov/data/report/2018-nsduh-asiansnative-hawaiians-and-other-pacific
4	2018 National Survey on Drug Use and Health: Hispanics, Latino Or Spanish Origin or Descent	Report	National Survey on Drug Use and Health	https://www.samhsa.gov/data/report/2018-nsduh-hispanics-latino-or-spanish-origin-or-desce
5	2018 National Survey on Drug Use and Health: Lesbian, Gay, & Bisexual (LGB) Adults	Report	National Survey on Drug Use and Health	https://www.samhsa.gov/data/report/2018-nsduh-lesbian-gay-bisexual-lgb-adults
6	5 Steps Public Health Can Take to Tell the Health Equity Story of Opioid Use	Update	Public Health Institute	https://www.phi.org/press/5-steps-public-health-can-take-to-tell-the-health-equity-story-of-opioid-use/
7	A Need for Racial Justice in Harm Reduction	Publication	N/A	https://harmreduction.org/publication-type/webinar/racial-justice-harm-reduction/
8	Achieving Rural Health Equity and Well-Being: Proceedings of a Workshop.	Workshop Write-up	National Academy of Sciences	https://www.ncbi.nlm.nih.gov/books/NBK531871/
9	Addressing the Opioid Epidemic in Minority Communities	Video	CMS and City of Baltimore	https://www.youtube.com/
10	Am I Gonna Get in Trouble for Acknowledging My Will to Be Safe? Identifying the Experiences of Young Sexual Minority Men and Substance Use in the Context of an Opioid Overdose Crisis	Research Publication	Trevor Goodyear et al.	https://pubmed.ncbi.nlm.nih.gov/32228646/
11	An Exploration of Social Circles and Prescription Drug Abuse Through Twitter	Research Publication	Carl Lee Hanson et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3785991/
12	Articulating Connections between the Harm-Reduction Paradigm and the Marginalization of People Who Use Illicit Drugs	Research Publication	Rusty Souleymanon and Dan Allman	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4985724/

13	Beyond Income: Material Resources Among Drug Users in Economically Disadvantaged New York City Neighborhoods	Research Publication	Danielle C. Ompad, et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3225725/
14	Black Leadership in Harm Reduction	Literature Review	Nia Jones	https://harmreduction.org/wp-content/uploads/2012/02/Black-Leadership-in-Harm-Reduction-Literature-Review.pdf
15	Blacks and Hispanics Are Less Likely Than Whites to Complete Addiction Treatment, Largely Due to Socioeconomic Factors	Research Publication	Brendan Saloner and Benjamin Lê Cook,	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3570982/
16	Blacks Experiencing Fast-rising Rates of Overdose deaths Involving Synthetic Opioids Other than Methadone	Report	AHRQ	https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/nhqrd/dr/dataspotlight-opioid.pdf
17	City Council Passes Bill to Coordinate Drug Strategy Between Dozens of Departments and the Community	Press release	Drug Policy Alliance	https://www.drugpolicy.org/press-release/2017/04/city-council-passes-bill-coordinate-drug-strategy-between-dozens-departments
18	Clinical Guideline for Homeless and Vulnerably Housed People, and People with Lived Homelessness Experience	Research Publication	Kevin Pottie, MD MCIsc, et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7062440/
19	Comparison of Injection Drug Users Accessing Syringes from Pharmacies, Syringe Exchange Programs, and Other Syringe Sources to Inform Targeted HIV Prevention and Intervention Strategies	Research Publication	Abby E. Rudolph, MPH et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3222463/
20	Coronavirus Crisis is Increasing the Dangers Those with Drug Addiction Face. 'This is a deeply vulnerable population.'	News Article	Madeline Buckley	https://nul.org/news/coronavirus-crisis-increasing-dangers-those-drug-addiction-face-deeply-vulnerable-population
21	Does News Coverage of Opioids Reinforce Stereotypes about Addiction?	Update	Public Health Institute	https://www.phi.org/press/does-news-coverage-of-opioids-reinforce-stereotypes-about-addiction/
22	DPA Podcast Episode 30: Why Decarceration Matters Now, and Why it Always Has	Podcast transcript	Drug Policy Alliance	https://www.drugpolicy.org/resource/dpa-podcast-episode-30-why-decarceration-matters-now-and-why-it-always-has
23	Ending Discrimination Against People with Mental and Substance Use Disorders: The Evidence for Stigma Change.	Research Publication	National Academy of Sciences	https://www.ncbi.nlm.nih.gov/books/NBK384918/

24	"Everything that looks good ain't good!" Perspectives on Urban Redevelopment among Persons with a History of Injection Drug Use in Baltimore, Maryland	Research Publication	Sabriya L. Linton et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3896568/
25	Examining Racial/Ethnic Differences in Patterns of Benzodiazepine Prescription and Misuse	Research Publication	Benjamin Cook et al.	https://pubmed.ncbi.nlm.nih.gov/29626743/
26	Forum on Opioids: Strategies and Solutions for Minority Communities	Conference Recording	U.S. Department of Health and Human Services (HHS)	https://www.youtube.com/watch?v=Tx8tgRKDjnw
27	Future Directions for Medication Assisted Treatment for Opioid Use Disorder with American Indian/Alaska Natives	Research Publication	Kamilla L. Venner et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6129390/
28	Health Equity-Oriented Approaches to Inform Responses to Opioid Overdoses: A Scoping Review Protocol	Literature Review	Karen MacKinnon et al.	https://pubmed.ncbi.nlm.nih.gov/30889075/
29	Intermediary Relending Program Rural Business Development Grant Unemployment Rate, Poverty Line Figures, and Loan Program Priorities	Letter	Bette B. Brand	https://www.rd.usda.gov/sites/default/files/RDUL-IRPRate.pdf
30	Interventions for Incarcerated Adults with Opioid Use Disorder in the United States: A Systematic Review with a Focus on Social Determinants of Health	Literature Review	Olivia K. Sugarman et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6974320/
31	Interventions for Incarcerated Adults with Opioid Use Disorder in the United States: A Systematic Review with a Focus on Social Determinants of Health	Research Publication	Olivia K. Sugarman et al.	https://pubmed.ncbi.nlm.nih.gov/31961908/
32	Latinx and the Drug War	Press release	Drug Policy Alliance	https://www.drugpolicy.org/latinxs-and-drug-war
33	LGBTQ+ Recovery Resources	Blog	Olivia Pennelle	https://facesandvoicesofrecovery.org/lgbtq-recovery-resources/
34	Looking to the Past for the Future of Harm Reduction: The Black Panthers	Publication	N/A	https://harmreduction.org/blog/bhm/

35	Opioid Crisis: Data-Related Strategies for Special Populations to Improve Health Equity and Prevent Opioid Addiction and Overdose	Official Letter	Advisory Committee on Minority Health	https://minorityhealth.hhs.gov/Assets/pdf/ACMH_Recommendations-12-27-2017.pdf
36	Opioid Crisis: Recommendations for Creating a Culturally Sensitive System of Care	Official Letter	Advisory Committee on Minority Health	https://minorityhealth.hhs.gov/Assets/pdf/ACMH%20Cultural%20Opioid.pdf
37	Opioid Epidemic in the United States: Empirical Trends, and A Literature Review of Social Determinants and Epidemiological, Pain Management, and Treatment Patterns	Research Publication	Gopal K. Singh, PhD, MS, MSc et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6804319/
38	Opioid Prevention, Treatment and Recovery: What's Working in Your Town?	Blog	Emily Cannon	https://www.rd.usda.gov/newsroom/news-release/opioid-prevention-treatment-and-recovery-what%E2%80%99s-working-your-town-6
39	Pain in the Nation: The Drug, Alcohol, and Suicide Crisis and the Need for a National Strategy	Report	Trust for America's Health	https://www.tfah.org/report-details/pain-in-the-nation/
40	Prescription Painkiller Overdoses: Especially Among Women	Webpage	CDC	https://www.cdc.gov/vitalsigns/PrescriptionPainkillerOverdoses/index.html
41	Racial Bias in the US Opioid Epidemic: A Review of the History of Systemic Bias and Implications for Care	Research Publication	Taylor N Santoro and Jonathan D Santoro	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6384031/
42	Racial Differences in Primary Care Opioid Risk Reduction Strategies	Research Publication	William C. Becker et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3090430/
43	Racial Discrimination in Medical Care Settings and Opioid Pain Reliever Misuse in A U.S. Cohort: 1992 to 2015	Research Publication	Samuel L. Swift et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6924655/
44	Racial/Ethnic Differences in Mental Health, Substance Use, and Bullying Victimization Among Self-Identified Bisexual High School-Aged Youth	Research Publication	Brian A. Feinstein et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6551981/
45	Racial/Ethnic Differences in the Medical Treatment of Opioid Use Disorders Within the VA Healthcare System Following Non-Fatal Opioid Overdose	Research Publication	Utibe R Essien et al.	https://pubmed.ncbi.nlm.nih.gov/31965528/

46	Racial/Ethnic Disparities in Arrests for Drug Possession After California Proposition 47, 2011–2016	Research Publication	Alyssa C. Mooney, MPH et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6050868/
47	Rural-Urban Trends in Opioid Overdose Discharges in Missouri Emergency Departments, 2012–2016	Journal Article	Whitney Coffey et al.	https://pubmed.ncbi.nlm.nih.gov/31022309/
48	Societal Implications of Health Insurance Coverage for Medically Necessary Services in the U.S. Transgender Population: A Cost-Effectiveness Analysis	Research Publication	William V. Padula, PhD et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4803686/
49	Society for Public Health Education's (SOPHE's) comments on the proposed Healthy People	Report	Office of the Assistant Secretary for Health Office of Disease Prevention and Health Promotion	https://www.sophe.org/wp-content/uploads/2019/02/HP-2030-Objectives-Comments_EA_3-002.pdf
50	State Unintentional Drug Overdose Reporting Surveillance: Opioid Overdose Deaths and Characteristics in Rhode Island	Research Publication	Yongwen Jiang et al.	https://pubmed.ncbi.nlm.nih.gov/30189700/
51	Strategies to Address the Opioid Epidemic in Black and Hispanic/Latinx Communities	Webinar series	SAMHSA and NNED	https://share.nned.net/2019/09/strategies-to-address-the-opioid-epidemic-in-black-and-hispaniclatinx-communities/
52	Strategy for Substance Abuse Reduction	Policy Review	WHO	https://iris.paho.org/bitstream/handle/10665.2/4844/CE146-13-e.pdf?sequence=1&isAllowed=y
53	Study Shows Major Increase in Deaths from Prescription Opioids	News Article	Columbia University	https://www.cuinjuryresearch.org/study-shows-major-increase-in-deaths-from-prescription-opioids/
54	The Effectiveness of Substance Use Interventions for Homeless and Vulnerably Housed Persons: A Systematic Review of Systematic Reviews on Supervised Consumption Facilities, Managed Alcohol Programs, and Pharmacological Agents for Opioid Use Disorder	Literature Review	Olivia Magwood et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6964917/
55	The Forgotten Population in HIV Prevention: Heterosexual Black/African American Men	Publication	Camille Abrahams et al.	https://harmreduction.org/wp-content/uploads/2012/02/Forgotten-Population-Position-Paper.pdf

56	The Mental Health Parity and Addiction Equity Act (MHPAEA) Evaluation Study: Did Parity Differentially Affect SUD and Mental Health Benefits Offered by Behavioral Healthcare “Carve-Out” and “Carve-In” Plans?	Research Publication	Sarah A. Friedman et al.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6197987/
57	The Opioid Crisis and the Black/ African American Population: An Urgent Issue	Report	SAMHSA	https://www.naccho.org/uploads/downloadable-resources/The-Opioid-Crisis-and-the-Black-African-American-Population-An-Urgent-Issue.pdf
58	The Opioid Crisis and the Black/ African American Population: An Urgent Issue	Issue brief	SAMHS	https://store.samhsa.gov/product/The-Opioid-Crisis-and-the-Black-African-American-Population-An-Urgent-Issue/PEP20-05-02-001
59	The Opioid Crisis is Hitting White Communities the Hardest	Publication	Changing the Narrative	https://www.changingthenarrative.news/opioids-race
60	The Society for the Analysis of African American Public Health Issues (SAAPHI)	Publication	Rebecca Hasson, et al.	https://ajph.aphapublications.org/doi/pdfplus/10.2105/AJPH.2013.301672
61	The Value of Harm Reduction for Injection Drug Use: A Clinical and Public Health Ethics Analysis	Research Publication	Laura Vearrier	https://pubmed.ncbi.nlm.nih.gov/30600096/
62	This Vulnerable Population is Critical to Preventing the Spread of COVID-19: Addiction Experts Give This Guidance to Health Workers	Press release	Public Health Institute	https://www.phi.org/press/this-vulnerable-population-is-critical-to-preventing-the-spread-of-covid-19-addiction-experts-give-this-guidance-to-health-workers/
63	To Be Equal: Legalizing Marijuana	Blog	National Urban League	https://nul.org/news/be-equal-legalizing-marijuana
64	TODAY: Elected Officials, Community Members and Civil Rights Groups Demand Racial Equity in New York’s Response to the Heroin and Opioid Crisis	Press release	Drug Policy Alliance	https://www.drugpolicy.org/news/2016/06/today-elected-officials-community-members-and-civil-rights-groups-demand-racial-equity-
65	Treatment Instead of Prison HIA (Case Story)	Case Study	HIP and WISDOM	https://humanimpact.org/hiprojects/treatment-instead-of-prison-hia-case-story/
66	Uncovering Health Disparities: Racial Equity and Substance Abuse Prevention in Minnesota	Webinar	Minnesota Prevention Resource Center and Minnesota Department of Health	https://mnprc.org/2019/02/27/uncovering-health-disparities/

APPENDIX D. TAILORED ORGANIZATION SEARCH LIST

Organization Name	Website
NACCHO & CDC Subject Matter Expert Recommendations	
Harm Reduction Coalition	https://harmreduction.org/
Network for Public Health Law	https://www.networkforphl.org/news-insights/the-network-for-public-health-law-launches-harm-reduction-legal-project-with-funding-support-from-arnold-ventures/
Drug Policy Alliance	https://www.drugpolicy.org/issues/harm-reduction
Faces and Voices of Recovery	https://facesandvoicesofrecovery.org/key-harm-reduction-strategies/
Open Society Foundation	https://www.opensocietyfoundations.org/voices/topics/harm-reduction
National Urban League	https://nul.org/
USDA Rural Development	https://www.rd.usda.gov/
Human Impact Partners	https://humanimpact.org/
Public Health Institute	https://www.phi.org/
Public Health Awakened	https://publichealthawakened.com/
NACCHO – Toolbox / Opioid Overdose Epidemic Toolkit	https://www.naccho.org/programs/community-health/injury-and-violence/opioid-epidemic/local-health-departments-and-the-opioid-epidemic-a-toolkit
ASTHO	https://www.astho.org/default.aspx
AHRQ (Advanced Search)	https://search.ahrq.gov/search?q=Search+AHRQ
MN Prevention Resource Center	https://mnprc.org/resources/
CDC Office of Minority Health and Health Equity	https://www.cdc.gov/minorityhealth/index.html
CDC Opioid Overdose Publications	https://www.cdc.gov/drugoverdose/pubs/index.html
The Food and Drug Administration Office of Minority Health and Health Equity	https://www.fda.gov/about-fda/office-commissioner/office-minority-health-and-health-equity
Trust for America’s Health	https://www.tfah.org/
Centers for Medicare & Medicaid Services (CMS) Office of Minority Health	https://www.cms.gov/About-CMS/Agency-Information/OMH

The Advisory Committee on Minority Health	https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=2&lvlid=3
SAMHSA's Office of Behavioral Health Equity	https://www.samhsa.gov/behavioral-health-equity
SAMHSA's Office of Tribal Affairs	https://www.samhsa.gov/tribal-affairs
National Institutes of Health, National Institute on Minority Health and Health Disparities (NIMHD)	https://www.nimhd.nih.gov/
National Council for Behavioral Health	https://www.thenationalcouncil.org/
ETR	https://www.etr.org/
NASTAD	https://www.nastad.org/
Injury Prevention Control Centers	https://www.cdc.gov/injury/erpo/icrc/centers.html
Currently funded centers:	
Columbia University: Columbia Center for Injury Science and Prevention (CCISP)	https://www.cuinjuryresearch.org/
Emory University: Injury Prevention Research Center at Emory (IPRCE)	http://iprce.emory.edu/
Johns Hopkins University: Center for Injury Research and Policy (CIRP)	https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-injury-research-and-policy/
Nationwide Children's Hospital: Center for Injury Research and Policy (CIRP)	https://www.nationwidechildrens.org/research/areas-of-research/center-for-injury-research-and-policy
University of Iowa Injury Prevention Research Center (UI IPRC)	https://iprc.public-health.uiowa.edu/
University of Michigan Injury Prevention Center (UM IPC)	https://injurycenter.umich.edu/
University of North Carolina: Injury Prevention Research Center (UNC IPRC)	https://iprc.unc.edu/

University of Pennsylvania: Penn Injury Science Center (PISC)	https://www.penninjuryscience.org/
University of Washington & Harborview Medical Center: Harborview Injury Prevention & Research Center (HIPRC)	https://depts.washington.edu/hiprc/
Other Organizations	
Agency for Toxic Substances and Disease Registry	http://www.atsdr.cdc.gov/
American Public Health Association	http://www.apha.org/
Association of Public Health Laboratories	http://www.aphl.org/Pages/default.aspx
Association of State and Territorial Health Officials	http://www.astho.org/
California Association of Public Health Laboratory Directors	http://www.caphld.org/
National Association of Local Boards of Health	http://www.nalboh.org/
National Environmental Health Association	http://www.neha.org/index.shtml
National Institutes of Health	http://www.nih.gov/
Pan American Health Organization	https://www.paho.org/en/united-states-america
Public Health Foundation	http://www.phf.org/Pages/default.aspx
US Public Health Service	http://www.usphs.gov/
American College of Epidemiology	https://acepidemiology.org/
Society for Public Health Education	https://www.sophe.org/
Society for the Analysis of African American Public Health Issues	https://www.saaphi.org/
The City Project	https://www.cityprojectca.org/
Poor People's Campaign	https://poorpeoplescampaign.org/

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