









**99** *Community Case Study of Naloxone Distribution by Hospital-Based Harm Reduction Program for People Who Use Drugs in New York City*

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**110** *Integrating Cognitive Dysfunction Accommodation Strategies Into Behavioral Interventions for Persons on Medication for Opioid Use Disorder*

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## OPEN ACCESS

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# Editorial: The outbreak and sequelae of the increase in opioid use in the United States, Canada, and beyond

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## Editorial on the Research Topic

[The outbreak and sequelae of the increase in opioid use in the United States, Canada, and beyond](#)

In 2018, there were 67,367 drug overdose deaths in the United States. Unfortunately, by 2021, the latest year for which data are available, the number of deaths had increased to over 107,000 deaths. This increase in overdose mortality was probably driven by a combination of upstream processes, most of which derive from ways in which capitalism and its system of nation-states are creating economic and cultural crises. These crises include the COVID-19 pandemic, economic crises, and a deepening culture of despair (Friedman et al., 2021). Relatedly, the illicit drug markets for stimulants and opioids have changed and have come to include widespread highly-potent synthetic opioids (Baldwin et al., 2021). Articles in this special issue provide insights into existing and potential strategies to prevent risky opioid use and reduce opioid mortality. We briefly discuss each of the articles in this issue and highlight key ideas, constructs, and recommendations for research and intervention.

Friedman et al. present evidence that the opioid/overdose epidemic is not only a question of individual behaviors—although those are important—nor only of corporate greed in the over-zealous marketing of dangerous opioids as harmless pain medicines, but that the overdose epidemic is part of a deeper dialectic of one-sided class war, the impacts of economic trends on profits, wages, employment, wealth and housing inequality, and of the associated social, community, ideological and psychological changes these cause.

The recent changes in the racial/ethnic distributions of overdose mortality suggest that the processes discussed in the Friedman et al. paper have taken place in a deeply racialized society where economic, political, and ideological changes are shaped by, and in turn shape, patterns of oppression and of struggle (Friedman et al., 2022b).

Bergo et al. extend prior work by Van Handel et al. (2016) using area-level measures of several syndemically related processes to predict the *need* for overdose, HIV, and hepatitis C prevention. Lyss et al. present evidence that the CDC county vulnerability index has not been an effective predictor of HIV outbreaks. Bergo et al. add new measures to create a revised index and examine ecologic associations at the ZIPCODE rather than county level, permitting greater geographic precision. One research question raised by this paper is whether indicators of a locality's "need" for overdose interventions are actually associated with whether interventions are implemented and/or their scale. Research on the placement and magnitude of syringe service and drug treatment programs across metropolitan areas suggests that associations between "program need" and "program implementation" have been weak at best (Friedman et al., 2007; Tempalski et al., 2007, 2008). Similarly, further research is needed on whether localities that need overdose programs the most are those where interventions are likely to be most effective. Recent experience in the United States, where some States or other localities with particularly severe COVID-19 epidemics have rejected mask mandates (and have had a low response to voluntary masking) and/or have responded poorly to vaccination campaigns exemplify that need may not predict either the existence or effectiveness of programmatic responses (Kahane, 2021; Kelman, 2021; Sehgal et al., 2022).

Gaps between need and effective response may also interact with programs of stigmatization of people who use drugs, particularly since drug policy has long been racialized in the United States and this is likely to interact with trends for overdose mortality to become more associated with racially-oppressed minorities (Friedman et al., 2022a; Kiang et al., 2022; Townsend et al., 2022).

Treatment for opioid use disorder, particularly *medications for opioid use disorder (MOUD)* in the United States is sometimes pointed to as the key route to ending opioid-related overdoses and related mortality. Such suggestions, however, seem incomplete given the currently-limited population-level effectiveness of MOUD. As discussed in Williams et al. (2019), OUD treatment is inadequate in the US: Of the 2.1 million people who are estimated to need care, approximately 20% are receiving treatment, and only 35% of these are receiving FDA-approved medications (methadone, buprenorphine, extended-release naloxone). Furthermore, retention in treatment programs for 6 months or more is low, and long-term "remission" is even lower. Thus, getting enough people at risk for overdose into treatment will require a large increase in available treatment and an increase in the proportion who receive evidence-based treatment (MOUD). Once in treatment, however, the prospects for retention are low, and for a cure even lower. Thus, to have a substantial impact on the opioid/overdose crisis, treatment would need large increases in the number, geographic distribution, insurance coverage, quality, patient

satisfaction, retention, and overall improvements in efficacy and population-level effectiveness.

In sum, then, the articles on treatment in this special issue by Blazes and Morrow, Mistler et al., and Frank and Walters offer useful, though insufficient, contributions to improving the opioid/overdose crisis. Population-level improvements will likely require implementing "upstream" interventions plus effective community-level interventions.

Blazes and Morrow address the co-formulation of buprenorphine and naloxone. The rationale for co-formulating these agents was to prevent the diversion of buprenorphine prescribed as MOUD to illicit injection use. Including naloxone (an opioid antagonist) with buprenorphine blunts the opioid effects, possibly (perhaps probably) reducing overdose and, by reducing euphoria when injected, possibly reducing incentives for diversion. The authors point out that this formulation has not consistently deterred its diverted use or misuse; this is confirmed by the observation that injection of buprenorphine-naloxone formulations is prevalent and, in some jurisdictions, is the most prevalent form of illicit drug injection (Johnson and Richert, 2019). Further data on the impact of this co-formulation on population-level overdose rates are needed.

Mistler et al. highlight that cognitive dysfunction, of various etiologies, can prevent achieving effective intervention outcomes to address the harms of opioid use. They suggest that for PWUD who enter methadone treatment, it is important to develop more effective ways of recognizing and addressing mental health disorders. Based on two focus groups with providers and patients from one MMTP, they suggest ways to achieve this.

Frank and Walters conducted qualitative research with MOUD patients and treatment providers and showed that many patients enter MOUD not because they want to, but rather because they experience constrained choices attributable to drugs' illegality; peer and family pressure; fear that authorities seize custody of their children; and/or because of internalized stigma. Analyses of patients and their interaction with providers, however, often assume that patients are in treatment voluntarily, and treatment decisions are often made on that basis. Frank and Walters suggest that recognizing the often-coercive context of treatment-seeking may provide insights for providers and people in treatment to develop more productive interaction strategies. Further research is necessary to assess whether improved interaction results in reducing overdose mortality in the absence of changing the broad upstream, oppressive context.

Other papers in this issue lay the basis for community-level interventions. Some of these, such as Bagchi et al., Riazi et al., and Des Jarlais et al., approach this through community education and/or counseling. Ellis et al. suggest both educational interventions and changing the ways authorities respond to PWUD.

Bagchi et al. view opioid overdose, hepatitis C, and HIV as a syndemic that requires integrated interventions that incorporate consideration of each condition, and also suggest the need

for interventions addressing broader underlying forces that increase risk; such as stigma, structural vulnerability, and siloed systems of care. They describe a 90-min Structural Competency Curriculum to train primary care providers. The limit of 90 min is realistic, since US health care focuses on high-profit individual care, even though it is widely recognized that addressing ‘upstream’ social and structural determinants is crucial. Provider-level interventions are also self-limited. At best, they lead to better awareness and practice in patient-provider interactions, but this cannot change in oppressive structures that underlie the opioid epidemic.

Riazi et al. describe an innovative program to provide overdose education and naloxone distribution training to at-risk populations and bystanders so that overdoses can be reversed. The program was implemented at public events, community-based organizations, substance use programs, educational facilities, homeless prevention programs, faith-based organizations, and alternatives to incarceration programs. It also used a train-the-trainer model to teach medical students and nurses to train others in these techniques. This article also provides useful information about how they adapted this program during the COVID-19 initial emergency period.

Des Jarlais et al. present a model of how some people who inject drugs come to initiate other PWUD into injecting (which is associated with a higher risk of infections and overdose). The stages in this process are promulgating positive visions of injection drug use; being asked to initiate by someone, and then initiating. It has long since been proposed that harm reduction efforts might work with potential initiators to keep them from initiating others or, at least, convince them to model safer injection techniques (Hunt et al., 1998). Des Jarlais and his collaborators have developed a “Break the Cycle” intervention to locate likely initiators and train them not to initiate others. This intervention seems to reduce the extent to which such initiators initiate others into injection (Des Jarlais et al., 2019; Uusküla et al., 2022).

This is a promising intervention, but several important questions remain to be answered: 1. Do those PWUD who ask to be initiated find other people to initiate them? 2. Of those who do not, how many initiate without the assistance of an experienced injector? 3. Does the experience of being refused by a potential injector, or of being unable to find one, reduce the subsequent probability of overdosing, dying from an overdose, or becoming infected among PWUD who asked? 4. Does implementing the Breaking the Cycle intervention in a locality or in a social network of PWUD reduce the rate of initiating injection and/or overdose in that locality or network?

Ellis et al. studied the healthcare experiences of PWUD in rural Southern Illinois qualitatively. Participants reported several ways in which their treatment dissuaded them from using medical services. These included forced catheterization, divulging drug test results to law enforcement, sharing details of counseling sessions with community members, and fear

of calling emergency services if someone had an overdose. They suggest reforming and clarifying law enforcement’s role in Emergency Departments, instituting diversion policies during arrests, stigma training, and harm reduction education for emergency medicine providers, and referral systems between Emergency Departments and local harm reduction agencies. These suggestions have some basis in practical experience and in theory, but research is needed to see if they can restore PWUD’s trust in medical services and, in particular, if such efforts can reduce fatal overdoses.

Ventuneac et al. and Guarino et al., focus on the epidemiology of risk.

Ventuneac et al. show that people living with HIV disproportionately use opioids. To some extent, this may be attributable to HIV acquisition through high-risk injection or sexual practices. In addition, some people living with HIV have had periods of severe pain due to HIV-associated complications or morbidities, which may lead to drug initiation, dependency, and overdose risk.

Guarino et al. studied a group of community-recruited young adult (aged 18–29) opioid users to assess the association of childhood traumatic events with the age of initiation of seven different drug behaviors. They observed that the more types of childhood traumatic events participants experienced, the earlier the age at which they underwent each kind of drug use initiation. This suggests that childhood trauma may contribute to vulnerability to high-risk drug use. A cohort study could provide additional information about these relationships.

What is not clear, in the context of 40 years of increasing overdose mortality in the United States (Jalal et al., 2018), which during some periods has been closely tied to increasing opioid use, is whether the increase in opioid use and/or overdose mortality at the population level is, in part, caused by increases in childhood trauma. It is certainly plausible, for example, that the one-sided class war described by Friedman et al. could engender family and individual stressors among adults that would, in turn, lead to increases in childhood trauma. Greater understanding of this pathway, and its prevalence, may point the way to developing innovative prevention methods that intervene against overdose mortality by an upstream approach to reducing childhood trauma.

Many of the research and innovative proposals discussed in these papers concern upstream interventions or expanding and improving existing harm reduction and treatment efforts. Although no papers focused on these, we would also suggest ensuring a safer drug supply may reduce the overdose risks from synthetic opioid adulterants. Additionally, repealing the criminalization of drug use may lead to greater drug treatment seeking, reduced stigma, and, as a consequence, less opioid-associated mortality. Given the scope of the opioid crisis, we would urge expanded effort to develop, implement, and evaluate

innovative strategies, community partnerships, and public health policies.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships

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# A Structural Competency Curriculum for Primary Care Providers to Address the Opioid Use Disorder, HIV, and Hepatitis C Syndemic

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The interrelated epidemics of opioid use disorder (OUD) and HIV and hepatitis C virus (HCV) infection have been identified as one of the most pressing syndemics facing the United States today. Research studies and interventions have begun to address the structural factors that promote the inter-relations between these conditions and a number of training programs to improve structural awareness have targeted physician trainees (e.g., residents and medical students). However, a significant limitation in these programs is the failure to include practicing primary care providers (PCPs). Over the past 5 years, there have been increasing calls for PCPs to develop structural competency as a way to provide a more integrated and patient-centered approach to prevention and care in the syndemic. This paper applies Metzger and Hansen's (1) framework for improved structural competency to describe an educational curriculum that can be delivered to practicing PCPs. Skill 1 involves reviewing the historical precedents (particularly stigma) that created the siloed systems of care for OUD, HIV, and HCV and examines how recent biomedical advances allow for greater care integration. To help clinicians develop a more multidisciplinary understanding of structure (Skill 2), trainees will discuss ways to assess structural vulnerability. Next, providers will review case studies to better understand how structural foundations are usually seen as cultural representations (Skill 3). Developing structural interventions (Skill 4) involves identifying ways to create a more integrated system of care that can overcome clinical inertia. Finally, the training will emphasize cultural humility (Skill 5) through empathetic and non-judgmental patient interactions. Demonstrating understanding of the structural barriers that patients face is expected to enhance patient trust and increase retention in care. The immediate objective is to pilot test the feasibility of the curriculum in a small sample of primary care sites and develop metrics for future evaluation. While the short-term goal is to test the model among practicing PCPs, the long-term goal is to implement the training practice-wide to ensure structural competence throughout the clinical setting.

**Keywords:** structural competency, syndemic, curriculum, primary care, opioid use disorder, HIV, hepatitis C

## INTRODUCTION

In 2017, an estimated 47,600 Americans died from opioid overdoses, representing 67.8% of all drug-related overdose deaths that year (2). Vital statistics demonstrate significant overlap in the opioid misuse epidemic with infectious disease outbreaks, with the most recent estimates suggesting that ~67% people who inject opioids are infected with the hepatitis C virus (HCV) and 33% with HIV (3, 4). Furthermore, in the 2014–2015 HIV epidemic in Scott County, Indiana, among the 181 people newly diagnosed with HIV, 88% had injected oxycodone and 92% were co-infected with HCV (5).

These interrelated and synergistic relationships between epidemics has been defined as a “syndemic,” (6) reflecting temporal, geographical, and biological interactions between the individual disorders. The syndemic of opioid use disorder (OUD) and overdose, HIV infection, and HCV infection (hereafter, “the syndemic”) has been appropriately identified as one of the most pressing public health issues facing the United States today (7). As Milstein has described, addressing this, or any syndemic, requires prevention, and treatment of each individual problem, as well as “the forces that tie those diseases together” [(8), p. 2]. Chief among these is the need to combat structural stigmas that have led to siloed and inefficient systems of care (e.g., specialty addiction treatment facilities to manage OUD, infectious disease [ID] specialists/the Ryan White HIV/AIDS Program for HIV, and gastroenterology/ID to manage HCV and associated chronic liver disease).

While Goffman (9) is generally cited as providing the earliest treatise on stigma, more recent theorists have expanded on his original ideas to advance a more nuanced understanding of how stigma operates in the United States (9). The model of Link and Phelan (10) is particularly suitable for understanding the syndemic because it identifies labeling, stereotyping, prejudice, and discrimination as the major components of stigma, but also highlights the role that power plays in perpetuating stigma (10). In this conception, societal structures (e.g., economic, social, political, and historical systems) create inequitable systems of power that enable expressions of stigma, which then create and sustain health inequities. As such, eliminating stigma requires moving beyond individual-level interventions (e.g., behavioral treatment for substance use disorder and reducing rates of opioid prescribing) to higher-level disruptions in systemic and structural factors that perpetuate health inequities.

### The Role for Primary Care Providers (PCPs)

A commonly-cited barrier to addressing the syndemic has been the lack of access to prevention and treatment services (11–14). Estimates suggest that among the 22 million people in need of addiction services, only 11% have access to specialty care and, among those with OUD, almost 80% lack access to treatment (11, 12). In the HIV epidemic, despite long-standing recommendations from the CDC that all individuals ages 13–64 receive an HIV test (15) only 40–46% of adults have ever received one (16, 17) and, in 2018, only 8.1% of individuals at high-risk for infection received pre-exposure prophylaxis (PrEP) (18). Finally, the CDC estimates that nearly 2.4 million people

are living with HCV in the United States and notes that the cost of treatment has led to underutilization of curative therapy (19). The United States Preventive Services Task Force (USPSTF) recently posted updated recommendations for HCV testing (20). The previous recommendation was that all adults born between 1945 and 1965 be screened for HCV, but the new guidelines suggest screening for all adults ages 18–79. Although there have been successful models of care integration for management of HIV and OUD, these have largely been in specialty care settings and there has been inadequate uptake in primary care practices (21). Similarly, while there have been successful models of HCV integration into primary care (22–24), including increasing consideration for OUD (25), such comprehensive approaches remain underutilized.

As a way to address the opioid overdose epidemic, several state- and federally-funded initiatives have focused on more responsible opioid prescribing among primary care providers (PCPs), including daily limits on milligrams of morphine equivalents (MME) and mandatory consultation of prescription drug monitoring program (PDMP) databases. However, as Dasgupta et al. (26) note, these approaches ignore institutionalized racial biases (e.g., laws that have criminalized drug use by members of ethnic minority groups as reflecting individual decision-making and “moral failures”) and structural factors (e.g., poverty and limited social capital) that underlie components of the syndemic (26). In addition, these opioid-specific approaches perpetuate the siloed nature of health services and fail to take the type of integrated approach that is needed to combat the syndemic. For example, the focus on opioid-related overdoses frequently overlooks other co-occurring substance use disorders, such as injection of methamphetamines, which also contributes to increase risk for HIV/HCV and overdose risks associated with polypharmacy (e.g., opioids and sedatives or stimulants) (27–30).

Providers in primary care settings (e.g., private practices, federally qualified health centers, and retail clinics) are uniquely positioned to offer comprehensive, patient-centered care that can accommodate individual needs. Greater incorporation of guideline-based screening into existing care and services will allow practicing PCPs to address service gaps without necessitating significant changes in clinic workflow or operations (14). Most importantly, by normalizing prevention and treatment services in primary care settings, the healthcare system can begin to address the stigma that underlies the critical intersection of the disorders within the syndemic. In general, PCPs can take a more active role in addressing structural stigmas and there have been increasing calls over the last 5 years for PCPs to develop structural competency as a way to provide a more integrated and patient-centered approach to prevention and care in the syndemic (1, 7, 31, 32). In particular, structural competency is seen as a way to address the institutionalized factors that shape social responses and clinical interactions (1). Recent reviews highlight successful office-based models for treatment of substance use disorders, which can be modified to address structural factors fueling the syndemic (13, 21, 33). For example, harm reduction programs and medication for addiction treatment (MAT) promote a patient-centered

approach to treatment that shows promise for overcoming barriers associated with socioeconomic status, institutionalized racism in the criminal justice system, and stigma.

## The Model for Structural Competency Training

In their seminal paper, Metzel and Hansen (1) defined *structural competency* as “the trained ability to discern how a host of issues defined clinically as symptoms, attitudes, or diseases ... also represent the downstream implications of a number of upstream decisions” related to public policies, supply chains operating within the healthcare system, and even “the very definitions of illness and health” (32, p., 5). The authors propose the need to expand traditional models of “cultural competency” into an educational approach that recognizes, and seeks to interrupt, these long-standing interactions, which perpetuate stigma and social inequality. As with the construct of “cultural humility,” (34) structural competency is understood not as an endpoint denoting mastery, but as a process of genuine self-reflection and recognition.

### “Recognizing the Structures that Shape Clinical Interactions” (32, p. 6)

Metzl and Hansen (1) described five skill-sets to form the basis for a structural competency curriculum for health care professionals (1). The first calls on clinicians to recognize the ways in which patient-provider interactions operate as functions of structural vulnerability. When a patient presents with poorly controlled diabetes, providers may assume that the patient (a) is reluctant to exclude “culturally preferred” foods from their diet (b) needs additional education on insulin administration, or (c) simply lacks the motivation to participate in recommended physical activity. Indeed, guidelines for management of such chronic conditions as diabetes and hypertension highlight “lifestyle changes” as the preliminary approach to management. However, such assumptions overlook factors associated with inadequate access to fresh foods and unsafe neighborhoods that restrict opportunities for daily exercise. While there is increasing awareness of these social determinants of health, structural factors, such as the pressure to conform to a 15-min encounter or the policies related to drug reimbursement, while recognized, go relatively unchallenged. It is important for clinicians to recognize that the social determinants of health may be the factors that contribute to disparities, but it is the structural conditions within society that explain why and how these factors lead to health inequities (35).

A common barrier to guideline-based screening in primary care settings is a belief that incidence of a given condition (e.g., HIV) is low in the provider’s service area (36). Such attitudes perpetuate the ineffective, siloed approach to primary care practice. Van Handel et al. (37) found that six factors of structural vulnerability are predictive of the risk for syndemic outbreaks within a given geographic area (37). Specifically, these indicators include (a) the overdose death rate; (b) the number of prescription opioid sales; (c) the capacity for buprenorphine administration, as evidenced by the number of providers with a Drug Addition Treatment Act of 2000 (DATA 2000) waiver;

(d) the percentage of non-Latino white residents; (e) per capita income; and (f) the unemployment rate. PCPs should consider these broader conceptions of risk in the provision of preventive services, including screening for HIV and HCV among patients receiving opioid prescriptions.

### “Developing an Extra-clinical Language of Structure” (32, p. 7)

The second skill of Metzel and Hansen’s (1) framework challenges PCPs to consider structural barriers from the perspective of other disciplines (e.g., psychiatry, public health, sociology, and anthropology) (1). Abundant evidence documents ethnic health disparities in infant mortality rates, obesity, and cancer screening (38–40). However, a structurally competent approach explores the nature of these disparities in their historical, economic, and sociological context. For example, Ransome et al. (41) explored the structural factors leading to late presentation for HIV testing (i.e., when infection has already progressed to AIDS) in communities with high concentrations of African American residents (41). These authors found that high socioeconomic deprivation and access to testing services did not mediate the association. They suggested the need to consider patterns of marriage/sexual partnerships and disproportionate incarceration rates as factors underlying diagnostic disparities.

### “Rearticulating ‘Cultural’ Presentations in Structural Terms” (32, p. 9)

The third skill in Metzel and Hansen’s framework requires providers to reframe “cultural differences” in terms of structural explanations (1). In their various publications, Metzl and Hansen draw a clear distinction between cultural and structural competency. They describe cultural competency as a process that operates at the individual level to identify clinicians’ biases and to enhance patient-provider communication (42). Structural competency, on the other hand, is a method of integrating explanatory frameworks from multiple disciplines to identify higher level sources of health inequities (42, 43).

In a clinical scenario they present, Metzl and Hansen (1) describe Mrs. Jones as “an African American woman in her mid-60s who comes late to her office visit and refuses to take her blood pressure medications as prescribed” (32, p. 2). Under a cultural competency framework, the clinician may see the patient’s ethnicity as a source of greater susceptibility to hypertension. The fact that she “comes late” to her appointment could be dismissed as a cultural proclivity against the value of timeliness. Finally, her “[refusal] to take” her prescribed medications may indicate to the clinician a need to provide more patient education regarding the effects of hypertension on critical organ systems and the importance of medication adherence for maintaining a healthy blood pressure. While it is important not to discount such factors in a clinical encounter, a structurally competent approach would consider, for example, how systemic structural racism can lead to a sense of hypervigilance among members of ethnic minority groups and that such a constant state of awareness leads to stress, which can in turn lead to increased blood pressure levels. The structurally competent approach moves beyond “genetic”

and individual factors and considers how society operates to reinforce racial injustice.

### “Observing and Imagining Structural Intervention” (32, p. 10)

In the traditional approach to care, clinicians would consider the case of Mrs. Jones and might provide her with a pill organizer or set up text or telephone reminders for her to take her medications. Most primary care practices abound with patient-facing educational brochures to explain common, chronic health conditions and how to better manage them. However, a structurally competent approach to care requires creativity and a willingness to disrupt long-standing assumptions about what is possible in clinical care (Skill 4). As Metz (44) eloquently put it, structural forces should not be seen as “immutable or beyond the reach of intervention or repair” but as “stories” that are “subject to revision through imagination, reparation, and transformation” (44, p. 217). As Metz and Hansen (1) point out, Dr. Jack Geiger started prescribing food as a health intervention in the 1960s (45). At the time, such an approach was seen as unusual and impractical. Today, food prescriptions have become a common practice for managing obesity, hypertension, and diabetes (46).

### “Developing Structural Humility” (32, p. 12)

The final component to a structurally competent approach is developing an openness to a patient’s evolving narrative (1). The American Academy of Pediatrics is credited with coining the concept of the patient-centered medical home in 1967 and “patient-centeredness” has been an idealized notion in the healthcare system for the past 50 years (47). However, it is rare to find a health care delivery system that treats the patient as a true co-equal collaborator in their own care. Many people who have served as the health caretaker of someone unable to speak for themselves can relate to the experience of being dismissed by a member of the medical establishment (i.e., “We can’t find anything wrong with your son/mother/brother/etc.”). However, the caretaker often knows when their loved one is “not acting right.” A clinician taking a structurally competent approach solicits the patient/caregiver’s insights as a co-equal “expert” on the patient’s condition as part of everyday practice.

According to Montoya (48), there are four keys to structural humility (48). The first reflects this view of patients as authorities and calls on clinicians to ask “real questions,” ones “for which you do not already have an answer” (48, p. 153). For example, Kleinman’s Explanatory Models Approach (49) solicits the patient’s narrative (e.g., “What do you call this problem?” “What do you believe is the cause of this problem?”), rather than simply accepting the biomedical model, which assumes the provider already knows the answers relating to the problem’s description and etiology. The second is to embrace discomfort. In describing Yale’s Department of Psychiatry Structural Competency Community Initiative (YSCCI), Rohrbaugh et al. (50) described the discomfort program participants felt when members of the local community criticized Yale University’s treatment of them as mere subjects for study (50). A structurally humble approach acknowledges

the legitimacy of these perspectives and takes them into consideration when developing interventions. Montoya’s third recommendation is for clinicians to be willing to admit that they do not know everything (i.e., “Be someone you’d like to know” (48, p. 153). This includes knowledge of oneself, not just one’s implicit biases (51) but the various types of privileges that shape one’s interactions with the world (52, 53). Finally, Montoya encourages clinicians to see their patients as more than just the problems they face (48). This means acknowledging the abilities that patients have in contributing to their care.

## Pedagogical Frameworks for a Structural Competency Curriculum

The proposed curriculum and its delivery draw on concepts from culturally relevant pedagogy (CRP) (54) and adult learning theory (55). Ladson-Billings developed CRP as an approach that draws on the cultural diversity of learners as a strength in the learning process, which helps to build “academic success,” “cultural competence,” and “sociopolitical consciousness” [(56, 57)—p. 75]. While generally grounded in a formal educational setting, the theoretical underpinnings of CRP are relevant in the clinical encounter since a critical role of clinicians is to provide patient education. When delivered in the context of a hierarchical relationship, such education is seldom effective because, in a structural competency framework, health is about more than individual behavior. When health care providers are made aware of the power differentials within the patient-provider relationship, they can approach patient education as an opportunity for mutual learning. Recognizing and incorporating the patient’s lived experience in their delivery of services raises the social consciousness of health care providers beyond the immediate encounter.

As described in detail in the sections that follow, the approach to instruction presented here challenges practicing clinicians across the six domains of the andragogical framework (55). First, through didactic instruction, providers will gain a greater understanding of the importance of addressing the structural barriers their patients face to achieving optimal health outcomes. The content of this didactic training was recently delivered to an interdisciplinary group of graduate students participating in a Health Resources and Services Administration-funded program on the management of OUD in primary care (see **Presentation 1** in **Supplementary Material**). Second, because the majority of practicing clinicians are unfamiliar with the concept of structural competency, the curriculum will encourage them to re-assess their awareness of the challenges their patients face. Third, by drawing on commonly encountered clinical challenges, providers will be able to contrast their own experiences with more comprehensive approaches to patient care. Fourth, the use of case studies will provide an opportunity to reflect on their readiness to manage the care of patients affected by the syndemic. Fifth, a structurally competent approach necessarily requires health care providers to re-orient their approach to care within broader societal structures. Finally, practice with the administration of structural vulnerability assessments will offer learners the

opportunity to examine the quality of the questions they pose within the clinical encounter.

## THE LEARNING ENVIRONMENT AND EDUCATIONAL FORMAT

A recent body of work has described structural competency training programs within medical schools, including training for pre-health/pre-med students, medical residents, and students of psychiatry (42, 43, 52, 58, 59). As described in Hansen and Metzler's (59) compendium of case studies, these efforts represent a small, but growing, number of interdisciplinary programs designed to bring awareness of structural influences on health into formal medical training programs (59). However, what is lacking is a training program that can address the knowledge and skills gaps of practicing providers. In the time-pressured environment of primary care, providers are unlikely to be willing to take the time to participate in tours of their surrounding communities to better understand the structural factors contributing to the challenges their patient's face in managing their health. However, it is critical to increase awareness of structural competency as a way to combat stigma in the syndemic and develop a more integrated approach to the provision of preventive and treatment services.

The goal of this section of the paper is to apply Metzler and Hansen's (1) five-part framework for improved structural competency in the design of a targeted educational curriculum on the syndemic that can be delivered on-site to practicing PCPs and their staff members (1). The proposed curriculum (**Table 1**) includes didactic lectures, interactive activities, case studies, discussions, individual practice assessment, and brainstorming. Altogether, the training is designed to take one and a half hours (i.e., 15 min to cover components 1 through 3 and 5 and 30 min to identify practice-specific interventions). Ideally, the training session will be followed with 3–6 monthly consultations to assist practices to implement workflow changes, applications, and other changes identified in the interventions phase. The objective is to test the feasibility of the program in a small sample (i.e., 3–5 practicing PCPs) and develop appropriate metrics to evaluate the model and refine it for further testing.

## Recognizing Structural Vulnerability in the Syndemic

The first phase of the proposed curriculum involves a didactic presentation that explores the constructs of structural competency and contrasts them with those of cultural competency and the social determinants of health (see

**TABLE 1** | Structural competency curriculum for addressing the syndemic in primary care.

Module number/topic	Time (mins.)	Activities	Mode(s) of instruction
1. Recognizing structural vulnerability in the syndemic	15	Didactic presentation - topics: <sup>a</sup> <ul style="list-style-type: none"> <li>• What's a syndemic?</li> <li>• Pharmaceutical companies' role in the opioid epidemic               <ul style="list-style-type: none"> <li>◦ Marketing of opioid medications</li> <li>◦ Understatement of opioid addictive potential</li> </ul> </li> <li>• The War on Drugs and mass incarceration</li> <li>• The Ryan White HIV/AIDS Program</li> <li>• Federal funding priorities and HIV/HCV</li> <li>• Stigma's role in the syndemic</li> </ul>	<ul style="list-style-type: none"> <li>• Presentation</li> <li>• Group discussion</li> </ul>
2. Taking a multidisciplinary approach to structural vulnerability	15	Discussion of tools for assessing vulnerability: <ul style="list-style-type: none"> <li>• Social isolation as a risk factor in the syndemic               <ul style="list-style-type: none"> <li>◦ UCLA Loneliness Scale (60)</li> </ul> </li> <li>• Defining structural vulnerability               <ul style="list-style-type: none"> <li>◦ Structural Vulnerability assessment (61)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Self-assessment</li> <li>• Group discussion</li> </ul>
3. Structural explanations in case studies	15	Case Studies in Social Medicine - from <i>The New England Journal of Medicine</i> : <ul style="list-style-type: none"> <li>• "The Structural Violence of Hyperincarceration — A 44-Year-Old Man with Back Pain" (62)</li> <li>• "Structural Iatrogenesis—A 43-Year-Old Man with "Opioid Misuse"" (63)</li> </ul>	<ul style="list-style-type: none"> <li>• Group discussion</li> </ul>
4. Structural Interventions	30	Practice assessment and brainstorming: <ul style="list-style-type: none"> <li>• Review of tools for HIV/HCV/OUd screening</li> <li>• Process for applying for a DATA 2000 waiver</li> <li>• Using the PDMP for medication management</li> <li>• Identification of referral sources practice is currently lacking</li> <li>• Review of patient education relating to safe use, storage, and disposal of opioid medications</li> </ul>	<ul style="list-style-type: none"> <li>• Small group brainstorming</li> <li>• General discussion</li> </ul>
5. Structural humility	10	Identity Wheel exercise (53)	<ul style="list-style-type: none"> <li>• Self-assessment</li> <li>• Group discussion</li> </ul>
6. Wrap up and next steps	5	Identification of additional resources/training needed for individual providers and the practice as a whole - possible examples: <ul style="list-style-type: none"> <li>• Screening and Brief Intervention (SBI) for OUD (13)</li> <li>• Clinical protocols for management of HIV/HCV/OUd</li> <li>• Contingency management in the syndemic</li> </ul>	<ul style="list-style-type: none"> <li>• Individual practice assessment</li> <li>• Brainstorming</li> <li>• Group discussion</li> </ul>

<sup>a</sup>See **Presentation 1** in **Supplementary Material**.

**Presentation 1 in Supplementary Materials).** During this time, we will also provide an overview of the historical and social precedents (particularly stigma) that created the siloed systems of care for OUD, HIV, and HCV. This review will start by defining the syndemic and describing the interactions between the three conditions, as well as risks imposed by co-occurring substance use disorders. The presentation will include discussions of the role of pharmaceutical companies in marketing opioid medications to prescribers and minimizing the addictive potential of these drugs, as well as the racial implications of the “War on Drugs” and mass incarceration (26, 59, 64). It will provide a brief history of the Ryan White HIV/AIDS Program and the failure of the federal government to prioritize funding for the development of pharmaceutical treatments for HIV and HCV (65, 66). Finally, this segment of the curriculum will review Link and Phelan’s model of stigma (10) and identify how integration of care for the syndemic within primary care practices can help to better integrate services and reduce syndemic-related stigma.

### Taking a Multidisciplinary Approach

Recent studies suggest that loneliness is prevalent throughout U.S. society (67–69). A study that used the University of California—Los Angeles’s Loneliness Scale found that 46% of Americans report feeling alone at least some of the time (70). The study further indicated that, rather than alleviate the sense of loneliness, heavy use of social media is associated with a greater sense of loneliness (i.e., 73% of heavy social media users reported feeling alone vs. 52% among light users). During the second portion of the training, participants will review the Loneliness Scale (60) and will discuss the implications of loneliness on coping patterns (e.g., loneliness as an etiological factor contributing to substance misuse as a coping mechanism) and social engagement.

During this portion of the training, we will also present the Structural Vulnerability Assessment Tool developed by Bourgois et al. (61). The tool includes questions related to 8 structural dimensions (e.g., financial security, residence, risk environments, etc.), along with specific follow-up questions for each. For example, the question relating to residence asks, “Do you have a safe, stable place to sleep and store your possessions?” Follow-up questions include “How long have you lived/stayed there? Is the place where you live/stay clean/private/quiet/protected by a lease?” (68, p. 15) We will review the tool and talk about the practice’s readiness to incorporate the items in health assessments.

### Identifying Structural Explanations for Health Outcomes in the Syndemic

In its Perspective section, the *New England Journal of Medicine* has a regular feature called “Case Studies in Social Medicine.” These articles highlight real cases and examine the structural implications inherent in patients’ interactions with the health care system. During this section of the training, participants will review up to two cases relating to patients with complaints of chronic pain and examine the traditional approach they would take to these cases vs. one that considers structural

factors. One goal will be to discuss how structural factors are frequently seen as cultural representations. The emphasis will be on understanding how to break down stereotypes to identify the structural forces that create risks and barriers that cross ethnic and socioeconomic lines.

### Implementing Structural Interventions in Primary Care

Because the goal of the training is to motivate providers to implement changes in their practice, the training will include 30 min to discuss specific structural interventions that practices can implement to address the syndemic. Specifically, we will first assess the extent to which practices are engaging in routine HIV, HCV, and OUD screening according to guidelines; implementing harm reduction interventions (e.g., prescription of PrEP and naloxone distribution); employing prescribers with DATA 2000 waivers to prescribe buprenorphine for OUD; and using the State PDMP for prescription opioid management, particularly among patients with infectious diseases. To the extent that practices do not have these systems in place, or are not using them efficiently, we will provide information, training, scripts, and tools to facilitate their uptake. Based on the prior discussions, we will also review the practice’s list of referral sites and identify gaps in services for which new sites of referrals can be developed. Finally, we will review the practice’s educational initiatives relating to the safe use, storage, and disposal of opioid medications and will ensure that sites have a list of local disposal sites of opioid medications and information that they can provide to patients regarding when and how to dispose of medications safely when there are no local drop-off sites available. The goal will be to help practices develop a more integrated system of care that can overcome clinical inertia for managing the syndemic.

### Approaching the Syndemic With Humility

The last portion of the training will focus on recognizing privilege as a component of structural humility. We will use an abbreviated version of the Identity Wheel exercise described by Chow et al. (53). The activity involves participants filling out two rings of a circle, one which includes given identities (e.g., age, nationality, language) and the other that includes chosen identities. After participants fill out their wheels, they engage in directed discussions regarding the meanings of their social identities. The goal is for participants to understand that there are identities that are salient to others that are not as relevant to their own experiences. Under the original model, the activity is expected to last at least 40 min. Due to time constraints, the activity for this training will focus on a shortened list of discussion questions, specifically, those focusing on identities that privilege providers in their professional roles and how these experiences differ from those of their patients.

### Program Wrap Up

The final portion of the program will focus on lessons learned and next steps. As prior researchers have noted, there are many successful models of primary care, office-based management for intersecting disorders (13, 33). However, approaching care within the syndemic requires an individualized approach that addresses

the strengths and needs of the specific clinical practice site (33). As such, the final 5 min of the training will involve a summary of lessons learned and identification of additional training that individual clinicians may need, or workflow processes that need to be revised at the practice level.

## Approach to Assessment

Assessment of participant learning will be based on Bloom's Taxonomy (71). Specifically, we will focus on the knowledge, skills, and attitude domains. Specially, for the knowledge domain, we will assess participants' ability to apply concepts of structural competency in their discussions of the case studies. Through this activity, participants will be able to demonstrate their ability to evaluate their current practice and conceptualize approaches that are more responsive to the structural challenges their patients face. In the domain of skills, participants will have the opportunity to practice data gathering using the Structural Vulnerability Assessment Tool (61) and to adapt the tool to the needs of their practice. Finally, through a post-course evaluation, participants will have the opportunity to reflect on the learning and share their perceptions regarding the utility of the structural competency approach and their intentions to implement changes in their practice.

## DISCUSSION

Primary care practices are ideal settings for addressing the syndemic. Evidence shows that many people who inject drugs or are at risk for infectious diseases see their PCPs on a yearly basis but are not engaged in discussions about harm reduction; in many cases, the PCP is not even aware of the patient's risk status (72). Normalizing the management of OUD, HIV, and HCV in the primary care setting can help to reduce the stigma that exacerbates poor health outcomes in the syndemic (13, 21, 73). Until the barriers (including lack of awareness or clinical inertia to prescribe buprenorphine and federal regulations restricting methadone outside of opioid treatment programs) are removed, PCPs should be encouraged to complete training to prescribe buprenorphine and train patients in overdose prevention with naloxone (14, 21, 74). As treatment regimens have become more efficacious and simpler, PCPs should be encouraged to accept the responsibility for medical management of patients with substance use disorder, HIV, and HCV (14, 75). Training in structural competency will help these providers understand that the conditions underlying these intersecting disorders

(e.g., stigma, social isolation, and disadvantage) are ideally addressed in settings that promote frequent contact and enhanced trust (13, 14, 26, 32). The goals of the proposed curriculum are 2-fold. First, we seek to expand existing models of structural competency training to target other disciplines, particularly PCPs in active practice. Second, while the proposed training focuses on the theoretical and practical aspects of the syndemic, it also incorporates practical, hands-on activities that can be readily implemented in the busy primary care setting.

The ultimate objective is to deploy and evaluate the training within a sample of primary care practice sites across New Jersey. We expect this to be a multiphase process. The preliminary phase will be a feasibility trial with three to five practicing PCPs to test the content and timing of the various activities. Information gleaned from this trial will be used to refine the content and identify appropriate clinical markers of program efficacy. Obvious objective candidate measures include stigma reduction; number of patients screened for HIV, HCV, and OUD; number of new applications for DATA 2000 waivers; and number of times the PDMP is consulted when prescribing opioid medications. More subjective indicators of program success would include satisfaction with the program and confidence in assessing patients for structural barriers. The long-term goal is to implement the training practice-wide to enhance the structural competency of the entire clinical setting. Eventually, we plan to apply for continuing education credits to implement and test the program across a wide range of practice settings.

## DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/Supplementary Materials, further inquiries can be directed to the corresponding authors.

## AUTHOR CONTRIBUTIONS

The author confirms that all work conducted in the development of this paper was solely by AB.

## SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpubh.2020.00210/full#supplementary-material>

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tablets, buprenorphine's opioid effects dominate naloxone and blocks opioid withdrawals. If the sublingual tablets are crushed and injected, however, the naloxone effect dominates and can bring on opioid withdrawals (2).” Based largely on this characterization, it has become the standard of care to use this combination in preference to buprenorphine monotherapy in the United States except in certain special circumstances such as pregnancy.

However, patient experience commonly stands in contrast to the prevalent view of naloxone as a strong deterrent to parenteral misuse of buprenorphine/naloxone products. Many patients with substance use disorders make use of independent, non-evidence based internet harm reduction sites such as “Bluelight” and “Erowid.” These are international, online harm-reduction communities, committed to reducing the harm associated with drug use. They host forums and blogs with discussions about patterns and modes of drug use. These sites provide detailed descriptions of pharmacokinetic and pharmacodynamic properties of the substances, and show how this knowledge can be used to maximize the clinical effects of drugs while minimizing potential side effects and withdrawal syndromes. Specific instructions are readily available on these sites for dissolving different preparations of buprenorphine/naloxone and injecting them intravenously. Following these instructions, patients typically experience moderate euphoria and report no symptoms of withdrawal. Such experiences have led to a belief in the drug-using community that the naloxone in these preparations is “inert.” We turned to the literature to assess whether there is a scientific basis for this belief, especially since stigma often leads health care professionals to subconsciously discount observations from people with substance use disorders.

## Pharmacology

There is pre-clinical evidence to support the claim that naloxone has very limited effects when buprenorphine is present. First, though naloxone can displace most opioids due to its relatively high binding affinity, buprenorphine has a 10-fold greater binding affinity for the  $\mu$  opioid receptor compared to naloxone (3–5). The slow receptor dissociation kinetics of buprenorphine in conjunction with the rapid elimination kinetics of naloxone further suggests that buprenorphine would largely supplant co-administered naloxone from  $\mu$  opioid receptors, thus effectively rendering naloxone inert (6). Furthermore, the half-life of naloxone is only 30–40 min. Buprenorphine has a half-life of 24–60 h with other clinical effects such as analgesia and euphoria lasting at least 6 h. Any attenuation of buprenorphine's effects by co-administered naloxone would therefore likely be short-lived. For these reasons, a monograph commissioned by the National Institute on Drug Abuse for exploring the potential of buprenorphine for treatment of opioid dependence recommended against combining sublingual formulations of buprenorphine with naloxone: “Naltrexone, which is approved for maintenance as an oral product, is preferred to naloxone for incorporation into a sublingual buprenorphine product for takehome use. Its duration of action is significantly longer than that of naloxone,

more evenly matching that of buprenorphine. Naloxone's short duration of action means that, even if present in substantial dose in the combination, it would only delay the onset of buprenorphine's agonist effects (7).” SAMHSA's clinical guidelines for the use of buprenorphine also state, “Those receiving prescription buprenorphine or buprenorphine/naloxone tablets who dissolve and inject their own medication: This population would experience an agonist effect from buprenorphine but no antagonist effect from naloxone, as large doses of opioid antagonists are needed to precipitate withdrawal in buprenorphine-maintained subjects (8).”

Several clinical studies have demonstrated that parenteral administration of the combined formulation causes precipitated withdrawal symptoms in opioid-dependent subjects (9–11). However, these dramatic consequences only occur under certain specific conditions, namely in subjects who are taking a full opioid agonist such as morphine or hydromorphone and still have significant concentrations of the agonist in their circulation at the time of buprenorphine/naloxone administration. This effect is cited as the main reason naloxone is added to buprenorphine formulation, but the effect is not unique to the combination product. Because it is a high-affinity partial agonist at the  $\mu$ -opioid receptor, buprenorphine itself will cause precipitated withdrawal in an opioid-dependent person who has a full opioid agonist on board. The presence or absence of naloxone makes little practical difference in this clinical scenario.

## Effects on Reward

One of the main findings leading to the conclusion that the combination product has significantly reduced abuse liability is that intravenous naloxone reduces the subjective rewarding effects of buprenorphine. For example, Jones et al. reported in 2017 that naloxone produces an “almost complete attenuation of reinforcing and positive subjective effects” of buprenorphine (12). This reduction of subjective effects has indeed been a consistent finding in multiple clinical studies (12–15), however many of those same studies also showed that the attenuation was only temporary (13, 15, 16). Most subjects report feeling a comparable “high” to buprenorphine alone just 20 to 30 min after co-injection of buprenorphine and naloxone. Though slower pharmacodynamics are known to reduce abuse liability (17), a 20- or 30-min delay in the onset of action is still more than capable of supporting addictive behavior, as evidenced by the widespread abuse of immediate-release oxycodone, whose subjective effects typically peak 1–2 h after ingestion (18).

In any case, multiple lines of evidence have suggested that the subjective effects of drugs are not the primary determinants of their abuse liability. Rather, addictive drug use is driven by a desire to pursue drug-associated rewards that is largely subconscious, sensitized with repeated drug exposures, and can be entirely dissociated from the pleasurable effects of the drug (19–22). In fact, the pleasurable effects of drugs typically fade away as the user builds tolerance, while the desire to use only grows stronger. The effects of naloxone on actual intravenous self-administration of buprenorphine have been decidedly less clear than the subjective consequences of such use. One study found intravenous self-









## THE OPIOIDS/OVERDOSE CRISIS AS A DIALECTICS OF PAIN, DESPAIR AND ONE-SIDED STRUGGLE

Millions of words have been written about the opioid/overdose epidemic in the United States, Canada and other countries (1–3). Many of the foremost experts on psychoactive drugs and the treatment of drug problems have written data-filled articles on the topic. So have many social scientists, pundits, and politicians.

This literature makes clear that the opioids/overdose crisis is multifaceted and complex (1, 2, 4). Understanding it takes transdisciplinary knowledge and transdisciplinary theory. In particular, knowledge about chemical dependency and drug treatment is too narrowly focused to come to grips with either the causes of the overdose outbreak or its solutions. Dasgupta, Belesky & Ciccarone provide a useful though general overview of the social and economic roots of the opioid crisis, including its relationships to “deaths of despair” based on changing economic conditions in some communities, and the interactions of these roots with other processes (5, 6). Jalal et al. after careful analysis of the contours of overdose rates in the United States since 1979, framed this as follows (2):

This historical pattern of predictable growth for at least 38 years suggests that the current opioid epidemic may be a more recent manifestation of an ongoing longer-term process. . . . Paradoxically, there has been substantial variability with which specific drugs have become dominant in varying populations and geographic locales. . . .

Understanding the forces that are holding multiple subepidemics together into a smooth exponential trajectory may be important in revealing the root causes of the epidemic. . . . Economic and technological “push” factors may be at work to increase supply, such as improved communications and supply chains, efficiencies in drug manufacturing, and expanding drug markets, leading to lower prices and higher drug purities (7, 8). Sociological and psychological “pull” forces may be operative to accelerate demand, such as despair, loss of purpose, and dissolution of communities (9, 10).

Their claim that overdose mortality has been increasing since 1979, that it has been based on a changing variety of drugs, and thus that it is likely the result of social or other processes of a general nature, seems to be accurate (11, 12). A National Academy of Sciences report made a related point (13):

While increased opioid prescribing for chronic pain has been a vector of the opioid epidemic, researchers agree that such structural factors as lack of economic opportunity, poor working conditions, and eroded social capital in depressed communities, accompanied by hopelessness and despair, are root causes of the misuse of opioids and other substances and SUD.

Current efforts to address the opioid/overdose crisis have shown considerable imagination and involve the expenditure of additional funds for treatment of those whose lives have been disrupted by opioid use. Comparatively large amounts of research money are being devoted to this crisis. In particular, the Federal

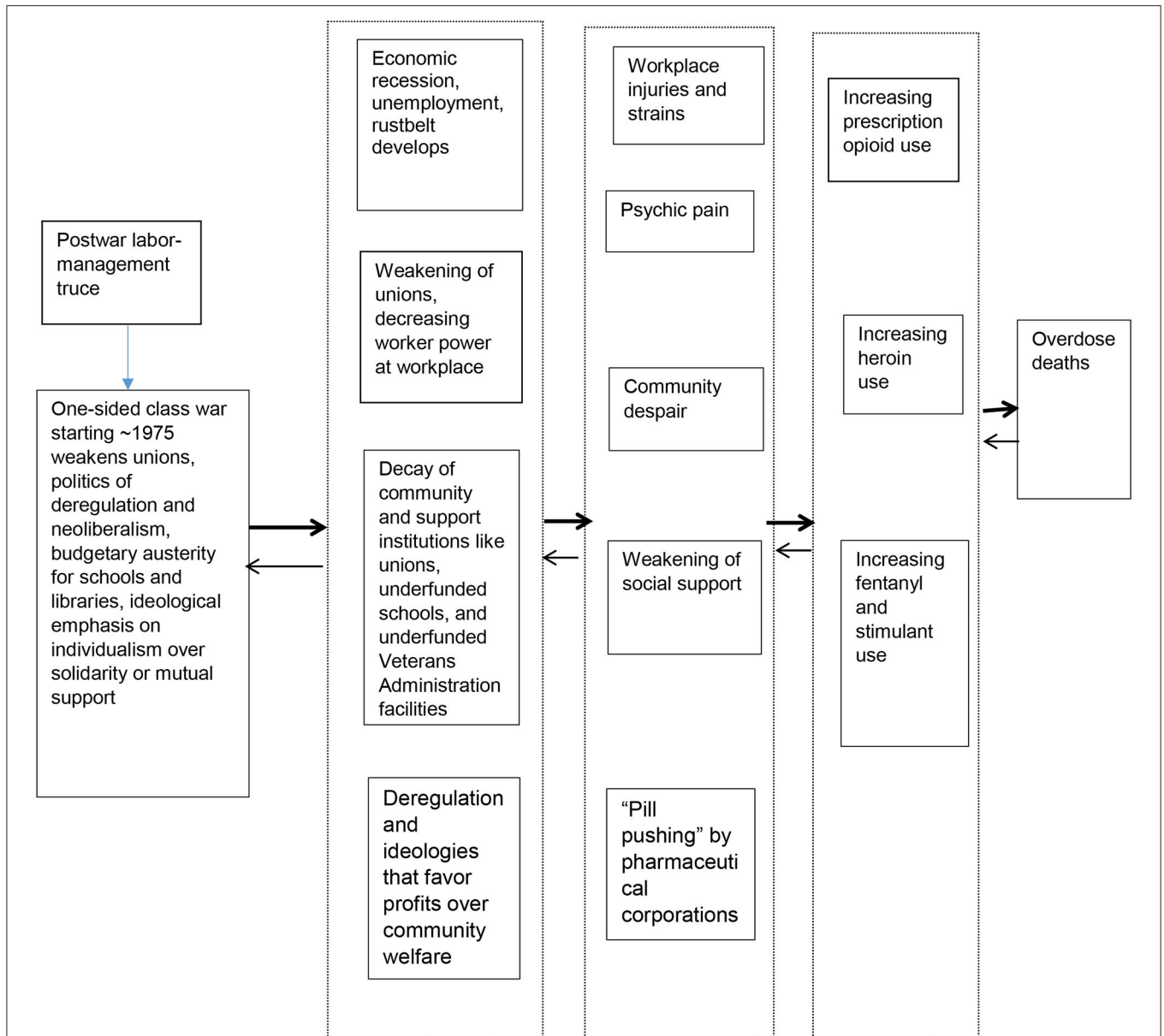
HEALing Communities initiative and other programs for rural communities and for criminal justice populations are devoting considerable money to learn how existing services and their coordination can be improved (14–17). It will be some years before we will know the extent to which these initiatives—which focus on only a small subset of the most impacted communities—actually improve current outcomes. It is important to note, however, that the thrust of these initiatives is to reduce harm to existing opioid users and to help some of them to stop using opioids. These are undoubtedly important goals. They are not the only goal, however. Although programs to reduce opioid prescribing may have some effect, and some community learning about the destruction opioid use can entail is undoubtedly taking place (and may be increased by these initiatives) (5, 18, 19), these programs themselves do not address the social roots of the crisis<sup>1</sup>, and thus are unlikely to reduce the numbers of people beginning to use opioids or other potentially-fatal drugs greatly.

In this article, we first very briefly outline an overall model that ties upstream socioeconomic, political, and community forces to increases in opioid use. We then present an overview of data on the trajectory and magnitude of the epidemics of opioid use and fatal overdose. We then examine some of the proximal roots of this crisis—the role of the pharmaceutical industry and related changes in the funding and regulation of medical care, “communities of despair” (which is a term closely tied in with “deaths of despair”) (3, 6), and *pain*, since the use of opioids in many cases is an attempt to alleviate physical and/or psychological pain, with special attention to the roots of such pain in various forms of alienation and in trends in the social nature of work and occupations. We then briefly discuss the implications of this analysis for action.

### A BRIEF SOCIOHISTORICAL MODEL OF UPSTREAM PROCESSES AND PATHWAYS WHICH HELPED GENERATE THE OPIOID/OVERDOSE EPIDEMIC

**Figure 1** presents an overview of this model. As has been well-documented, the period from 1947 through the early 1970’s was one of relative labor-management truce and government focus on economic growth while respecting this peace in almost all industrialized countries (20–25). However, as discussed (and referenced) later in this paper, this truce was replaced by a period of one-sided class war in the 1970s that weakened unions, cut budgets for social services, reduced regulations in transportation (and other) industries in ways that weakened unions, and led to the victory of a political economy of neoliberalism and of ideologies emphasizing individualism and the right of companies to make profits over solidarity or mutual support. This led in the United States to a great growth in economic inequality, to economic recession and the development of the Rustbelt,

<sup>1</sup>This is not a criticism of these programs. They are important and intelligent programs to determine how best to help people with opioid-related problems. That is a valuable goal—just not the focus of this paper. Likewise, we applaud and support the many grassroots and institutionally-based efforts to embed naloxone availability and use in communities to reduce overdose fatalities.



**FIGURE 1** | A brief sociohistorical model of upstream processes and pathways through which they helped generate the opioid/overdose epidemic\*. \*As is discussed in the text, items on the left seem to contribute causally to items to their right. A degree of reverse causation and of causal influence on items higher or lower in this diagram also seems to take place.

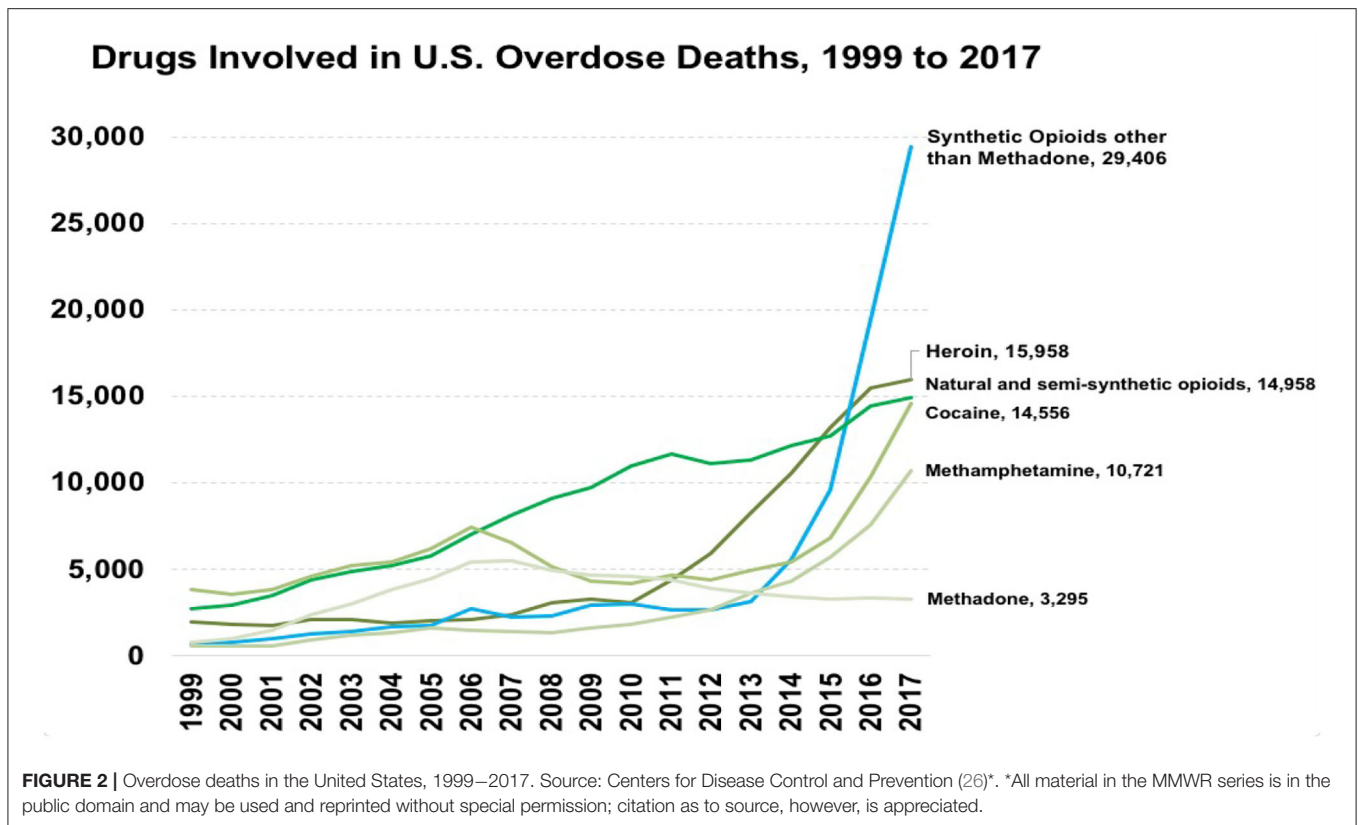
to weakened unions and reduced ability of workers to defend their working conditions, and to the decay of public schools and other community institutions. This set of events led to communities of despair and to workplace injuries—and thus to physical and psychic pain with reduced community capacity to offer social support to those suffering from these ills. Decreased regulation of pharmaceutical companies and the dominant ideology emphasizing the profitability of companies enabled and perhaps encouraged pharmaceutical companies to introduce new opioid products and to market them aggressively.

This set of processes paved the way for a great increase in prescription opioid use, followed by an increase in the use

of heroin, and later of other opioids including fentanyl and of stimulants. Massive increases in overdose mortality were the result.

## BRIEF REVIEW OF THE TRAJECTORY AND MAGNITUDE OF THE EPIDEMICS OF OPIOID USE AND OF FATAL OVERDOSE

The drug overdose epidemic has had multiple phases up to the current time (see **Figure 2**). While the number of drug overdose deaths has been increasing since 1979 (early in the one-sided



class war), it entered a new period in the late 1990s when the first phase of the current epidemic period started with a rapid rise in the use of prescription opioids to treat chronic pain, a subsequent increase in prescription opioid misuse and in prescription opioid overdoses (27). The second phase started in the late 2000s when the prevalence of prescription opioid misuse and overdoses began to stabilize, but heroin use and heroin-related overdoses sharply increased. It has been hypothesized that the rise in heroin use is related to increased trafficking of purer and lower-priced heroin in the illicit market and to increased restrictions placed on the prescription opioid supply (28), with the Great Recession and its socioeconomic effects perhaps serving as a “Big Event” to exacerbate this increase and to produce an increase in methamphetamine use (29–32). A third phase began in 2013, with the introduction of illegally manufactured synthetic fentanyl and related synthetic drugs into the drug market. Overdose deaths spiked, as fentanyl and its analogs are considerably stronger than heroin, and are considerably stronger than heroin, and is often mixed in with other drugs, including other opioids, cocaine, and methamphetamine (33). It has been proposed that we are now in a fourth phase, characterized by polysubstance use, as overdoses involving both opioids and stimulants such as methamphetamine and cocaine have seen an increase, although this may be a continuation of trends in polysubstance use that began after the 2008 economic crisis (29, 34). It is not clear whether the three proximal partial causes of the overall epidemic that we focus on in this paper—pharmaceutical industry activities, community

despair, and pain—were differentially important in these three phases, although it is likely that the pharmaceutical corporate contribution was greatest in the first phase.

Although death rates during this period of increased overdose mortality have been highest among American Indians and Non-Hispanic Whites, in recent years overdose mortality rates among African Americans and Hispanics have been increasing more rapidly (35).

## THE ROLE OF THE PHARMACEUTICAL INDUSTRY AND RELATED CHANGES IN THE FUNDING AND REGULATION OF MEDICAL CARE

Much current thinking blames the early phases of the current opioid epidemic on the pharmaceutical industry and in some cases on inadequate regulation of this industry, coupled with an increasing push to consider pain as “the fifth vital sign” (36, 37). In 1996, the American Academy of Pain Medicine and the American Pain Society issued a consensus statement on “The Use of Opioids for the Treatment of Chronic Pain,” which argued that opioids should have a role, even a first line role, in the treatment of patients with chronic non-cancer pain (38). Many states then enacted “Intractable Pain Acts” which removed sanctions for prescription of long-term and high-dose opioids. Opioid sales quadrupled between 2000 and 2010. As of 2017, 57

million people (17.4%) in the US received opioid prescriptions, including 15% of men and 20% of women (39).

The pharmaceutical industry played an important role in this push to consider opioids as a safe, non-addictive alternative to no treatment or to the use of other medications without addictive potential for chronic, non-cancer pain. The FDA approved OxyContin in 1996, which Purdue Pharma marketed as non-addictive and effective in treating chronic pain (40). The claim that OxyContin was non-addictive was based on one very flawed and small report (41); this statement is now considered to be factually incorrect (40, 42). The pharmaceutical industry spent tens of millions of dollars annually marketing prescription opioids to physicians, with a subsequent increase in opioid prescribing, including among physicians who received marketing-related payments from the pharmaceutical industry (43). Another important driver of prescription opioid proliferation was the creation of unregulated pain management clinics, or “pill mills,” which functioned as hubs for distribution and sale of prescription opioids across the country (7, 44). For example, in Florida, where such clinics proliferated, and oxycodone-related overdose deaths increased 265% from 2003 to 2009 (8).

## RESTRICTION OF THE PRESCRIPTION OPIOID SUPPLY AND THE RISE OF THE HEROIN MARKET

Federal and state governments responded to growing prescription opioid overdose deaths by regulating prescription opioids (e.g., approving supposedly abuse-deterrent formulations of oxycodone), controlling and monitoring legal access to prescription opioids (e.g., enacting regulations on pain clinics) and shaping prescribing practices (e.g., prescribing guidelines, prescription drug monitoring programs). Prescription opioid overdose deaths stabilized but heroin overdose deaths increased, perhaps because restrictions on the prescription opioid supply led to heroin use among people dependent on opioids (9, 10). (Prescription opioids and heroin have similar pharmacological properties, prescription opioids are often the first opioid used by heroin users, and people with a history of prescription opioid misuse are more likely to begin heroin use than non-users) (28, 45). For example, in one New York City sample of young opioid users, the average time from initiating opioid use to initiating heroin use was <4 years. However, the restricted prescription opioid supply was likely only one contributing factor to the rise in heroin overdose deaths. At the same time as prescription opioid became less available, heroin prices decreased and heroin purity and supply increased (42, 46, 47). After 2013, the introduction of fentanyl into the illegal drug market, and the adulteration of heroin with fentanyl contributed greatly to the rise in heroin overdose deaths.

## COMMUNITIES OF DESPAIR

Another common explanation of the opioid crisis is that it is a reaction to economic and social despair, an argument usually

tied to the decline in industrial manufacturing in most of the United States and the “rustbelt communities” it produced. This concept became popular through the works of Case and Deaton (3, 6) which described high death rates among US non-Hispanic whites, particularly among those with cumulative disadvantage and suggested that the prescription of opioids for chronic pain had exacerbated the problem (6).

Case & Deaton’s work on this issue were widely publicized. The concepts of deaths of despair and communities of despair were further popularized by an article in *New York Magazine* by Andrew Sullivan (48). Recent evidence that the closing of automobile assembly plants may have increased opioid-related overdose mortality rates in their counties tends to support this argument (49). Relatedly, Pear et al. have shown that non-fatal overdose rates are more common in impoverished localities (50). Thomas et al. reviewed relevant qualitative research studies based in rural areas and found that economic, isolation and other physical conditions, social and policy environments were implicated in opioid-related harm (51).

It should be noted that despair leading to drug use is not a new concept—indeed the heroin and crack epidemics were largely concentrated in impoverished communities of color where lack of jobs, structural racism and over-policing and criminalization created despair in many people (19, 52–55). Opioid use continues to be high in many impoverished minority neighborhoods (56).

Sociological qualitative community studies help explain some of the processes through which changes in economic circumstances lead many people to opioid use or problematic drug or alcohol use (57–59). We will present evidence from two of these conducted in small New England cities. The first, Woonsocket, Rhode Island, is multiracial: In 2017, it was 64% White (60), 18% Hispanic, 6% Black, 7% Asian. The second, Weymouth, Massachusetts, is overwhelmingly (94%) White (61).

Ikeler’s study of Woonsocket first provides a historical overview (58). It was a textile center for many years, and was 84% of its workforce was organized by the Congress of Industrial Unions (CIO) in the 1930s. The union established considerable control over workplace life, and over the culture and daily life of the community.

Starting in the 1950s, however, an early Rustbelt experience came to Woonsocket as textile companies moved their production to the US South. A large proportion of Woonsocket’s workers, and their descendants, found employment only in short term, precarious work for temp agencies or retail shops. As Ikeler argues:

Attachment to the formal economy or even to a craft or occupation that could provide “ontological security” had declined considerably in post-industrial Woonsocket. . . .

Yet when work is no longer dependable and its forms increasingly vary—customer service, construction, cab driving, you name it—it ceases to be a dependable site for effort expenditure and identity formation. Precarious workers find alternatives.

These alternatives often involve alcoholism and drug use. As Ikeler goes on to describe:

Alongside fragmented work and absent union experience, subjects described, over and over, the continuity and immanence of substances. Many were not themselves addicts but all witnessed heavy, endemic use in their immediate surroundings.

.... Substance use appeared to replace work as the most unifying daily practice; resisting it appeared to replace unionism.

Many of the participants in Ikeler's research both used opioids and other substances and continued to work at those precarious jobs that were available to them. They also fulfilled family roles such as mother and father. In many cases, they did these roles well. Thus, as one participant reported:

"My parents are both junkies," she told me. "They were good parents though, always emotionally there, just addiction gets annoying." Corinne had dabbled in opioids herself: "I did heroin only a handful of times and I was like 'this is stupid' so I stopped." But she opined on the reasons for its use around her: "I think it's a hard time," she said, referring to the economy. "And it's easy—people get depressed, it's easy to grab a bottle or do heroin and just not think for a little awhile. That is why I did it."

Ikeler goes on to present a complex picture of contradictory tendencies in Woonsocket's community culture. On the one hand, there are forces which lead many people to take up substance use. On the other, neighbors support each other when someone has problems due to drug use and/or when people attempt to quit using drugs.

Ikeler summarizes his analysis as follows:

These stories suggest two things. First, they display the depth and pervasiveness of substance abuse in general and opioid abuse in particular among key groups of contemporary workers. They show this in a way that is not simply parallel to other pursuits, such as work, family, or hobbies, but central and in many ways a replacement.

But second, ... they display a reorientation of resistance toward their own habits and those of users around them. Either way, this struggle is internal: internal to the *self* among recovering addicts; internal to *working-class communities* among nonusers.

Class-based resistance ...has thus not entirely disappeared in the 21st century. It has in large part been redirected toward substances, the new agents of dependence, rather than employers.

He then briefly discusses the contradictory experiences of West Virginia. He presents data showing that West Virginia had the highest rate of overdose deaths of any state in 2016 and that it had seen the fifth highest decline in union density from 1983–2016. In spite of this (or perhaps in part as a consequence of this), West Virginia was also the state where the mass teacher strikes of 2018 began, and where they got massive community support, undoubtedly including support from many people who use opioid and their families and neighbors.

Susan Starr Sered conducted an ethnographic sociological study of Weymouth, Massachusetts, a suburban blue collar town south of Boston (57). Her overall analysis complements Ikeler's, in part because she focused less on the experiences of people using drugs and more on issues of what she calls social and cultural capital as described by a wide range of

community residents. Like Ikeler, she describes the decline of union employment as leading men (particularly) and women to lose access to long-term full time employment. Unlike Ikeler, and relevant to our discussion of how one-sided class war facilitates both occupational pain and community despair—and thus opioid use, she reports that:

A long-time union member explained, "In working class communities people get injured on the job [and then are] overprescribed pills. If they don't go to work they don't get paid so they fight through injuries. And then one thing leads to the next and the next."

Although occupational injuries and subsequent use of pain medication made pills accessible, Weymouth residents more often related the current opioid crisis to the "lack of hope for decent [blue collar] jobs," especially for young men. Thus, several respondents talked about teenagers getting their start with drug mis/use with "finding" pain pills in the medicine cabinets of their blue collar parents. In other words, the parent may have used and perhaps misused prescription pain medication but for the most part in ways that did not significantly interfere with managing a job and daily life. But the kids ... took their drug use up to a whole new level.

Like Ikeler, she also shows ways in which the dominance of precarious employment generates a crisis of meaning and of identity. She describes this in terms of "cultural capital; that is, the repertoire of meaningful scripts that help individuals and communities make sense of life's pain, challenges and tedium. Without meaningful scripts, individuals and communities may be more inclined to misuse mind and mood altering substances in order to manage their pain, disappointments and restlessness." Major sources of decline in such cultural scripts that she identifies include changes in the local school system from one that helped blue collar children form social ties to one oriented to college-based careers focusing on individual material success and problems caused by neoliberal attacks on other public institutions like the Veterans Administration.

She then added:

As access to varied useful and healthy ways to interpret and manage suffering declines or is blocked, opioids and other pain killing and mood changing substances may come to be seen as the only or the most available means of dealing with pain of all kinds.

## PAIN: TRENDS, AND ITS SOCIAL ROOTS

As Sered mentioned, a third proximal cause that has been pointed to for increases in opioid use and overdose deaths is pain, both physical and psychic (57). As discussed above, although pharmaceutical companies increased the supply of opioid pain relievers and engaged in aggressive marketing of these products, initial uptake of these medicines depends, at least in part, on the extent to which people being offered or asking for prescribed opioids, as well as potential prescribers, feel that pain relief would help them. (We specify "initial uptake" because opioid dependence or enjoyment can change the motivations for use).

As we discuss below, there is considerable, though contested, evidence than pain has been increasing in the United States.

Supporting such a claim, however, is difficult, because data on pain have many sources of inaccuracy. One potential source of inaccuracy is that to the extent that data depend on self-reported or self-assessed pain levels, there are possibilities both for culturally-induced biases to enter the data, for public attention to pain to increase perceived need for pain relief, and for differential responses by respondents who use different metrics for assessing their own pain levels. In addition, as Dasgupta et al. argue, people sometimes somaticize economic hardship and other stresses into the form of pain, and this could affect both the statistics and the extent of pain suffered by the population (1).

The United States Institute of Medicine considered these issues in a report issued in 2011 (62). It concluded that approximately 100 million Americans suffered from chronic pain. Basing itself in part upon NHANES data, it found that pain had been increasing in the United States. More recently, Nahin et al. used data from the Medical Expenditure Panel Survey to show that non-cancer-related pain that interfered with daily work (including both work outside the home and work in the home) had increased from 1997/98 to 2013/14 among US adults (63). Overall, the proportion of adults reporting painful health condition(s) increased from 32.9% (120 million adults) in 1997/1998 to 41.0% (178 million adults) in 2013/2014. The use of what they classified as *strong* opioids increased more than did non-cancer pain, as did the use of strong opioids within each level of pain interference with work. This trend was particularly strong among those with severe interference due to pain, where the use of strong opioids increased from 11.5% (4.1 million adults) to 24.3% (10.5 million adults) (2).

Nahin et al. also summarize some of the specific causes of pain that have been increasing. These include musculoskeletal conditions, particularly arthritis and spine-related outcomes, and also mental disorders. Keyes et al. point out that both non-medical opioid use and chronic pain and injury are more common in rural areas (64).

## Workplace Sources of Pain

Our model of upstream processes suggests that the one-sided class war leads to less worker control, or even input into, working conditions, safety, and ability to socialize on the job, and thus to loneliness and despair, all of which can lead to more physical and psychic pain (1). The study of what happens at *workplaces* is an issue that many economists, drug researchers, and epidemiologists rarely study (13), even though some earlier reports on increasing opioid deaths dealt with workers' compensation data (65). For example, as shown in the quotation in the Introduction to this paper, the NAS report on *Pain management and the opioid epidemic* mentioned working conditions, but did not substantively examine them. In their otherwise insightful review of the opioid crisis, Dasgupta, Beletsky & Ciccarone do mention working conditions and their association with pain, but do so primarily in connection with poverty and with conditions in poor communities (1). They do not explore the mechanisms or time-trends that might contribute to workplace issues causing *increasing* substance use or overdoses by causing pain. A recent overview shows the evidence for and importance of workplace environments in causing physical and

psychological pain, opioid use and overdose deaths, but does not tie this into changes in union power and efficacy or to the economic and social changes tied to the one-sided class war (66).

Leukefeld et al. (p. 516) discuss how medicating pain with pain killers had become a part of the culture in Appalachian Kentucky based on the needs of loggers and miners who suffered from occupationally-related pain (67). Specifically, they report that:

Overall, these seventy key informants agreed with the media that the non-medical use and misuse of prescription drugs is widespread and has been a long standing problem with “deep roots” in Appalachian Kentucky and could be part of the “culture.” ... This rural drug culture was described by our key informants and others as emerging from loggers who worked with limited power equipment and coal miners who worked bent over in three to four foot high coal mines. The families of loggers and in “coal camp communities” accepted the use of prescription drugs to relieve physical pain and to help wives cope with their depression and their “depressing” surroundings

Buer's *Rx Appalachia* provides additional data about how occupational injuries and Black Lung had led to opioid use, to stressful family situations, and thus to opioid use by family members of those suffering from workplace-induced pain (68, 69).

Cross-sectional data show that people who work in industries and occupations in which workplace injuries or other sources of pain are prevalent are more likely to die of drug-related overdose. *MMWR* reported this for national data for 2007–2012, finding that “Construction occupations had the highest PMRs [proportional mortality ratios] for drug overdose deaths and for both heroin-related and prescription opioid-related overdose deaths. The occupation groups with the highest PMRs from methadone, natural and semisynthetic opioids, and synthetic opioids other than methadone were construction, extraction (e.g., mining, oil and gas extraction), and health care practitioners” (70). A detailed report from Massachusetts for later years (2012–2015) found similarly that construction and extraction occupations were at highest risk; specified that those in health care who were at high risk were health care support staff; and added that those in farming, fishing, and hunting; material moving; installation, maintenance and repair; transportation; production; food preparation and related positions; and building and grounds cleaning and maintenance were also at enhanced risk (71). Cerdá et al. found that, in California, localities with more manual labor industries had a higher rate of hospital discharges for prescription opioid poisoning (72). Most of the industries mentioned above are occupations in which musculoskeletal injuries are frequent. Some of them are also among the occupations in which employment has been growing rapidly; and in these and other industries, the effects of the one-sided class war discussed in depth below also tend to produce more injuries and more physical and psychic pain.

Ompad et al. used National Survey on Drug Use and Health data to compare drug use among construction and extraction workers to that among other workers (73). They found that construction and extraction workers were significantly more

likely to report non-prescription opioid use. Missing work due to sickness or injury was also associated with non-prescription opioid use.

## “ONE-SIDED CLASS WAR”

We have discussed three major facilitators of the opioids/overdose crisis: actions by pharmaceutical companies, the growth of communities of despair, and increased pain among the population, particularly that owing to injuries, exposures or other sources of pain at work. None of these processes is easy to reverse, although court cases and opioid regulation may have some effect on pharmaceutical industry actions. This suggests it might be useful to investigate whether these three processes have common sources that might be changeable.

Many commentators have investigated these issues. In general, they point to economic globalization, the growth of neoliberal policies and ideologies that include restricting regulation of corporations' activities (including both regulation of pharmaceutical companies and oversight of employers' actions that might lead to injury or harmful exposures of their employees) and result in the movement of much manufacturing and other economic activity away from the Rust Belt. They generally see economic globalization as enforcing a mode of competition that works symbiotically with neoliberalism to create a “race to the bottom” for social welfare and labor protections (24, 25, 74). In some cases, they see these changes as irreversible—which would imply that these drivers of the opioid/overdose crisis might also be irreversible.

The framework we presented at the beginning of this paper and in **Figure 1** presents a more hopeful perspective. It frames changes such as globalization, deregulation, and neoliberalism as part of a process of “one-sided class war” through which corporate interests and their political supporters have enforced the dominance of corporate profitability, neoliberal ideology, a global pattern of commodity chains in which production is done where it is cheapest (which forces workers and localities to compete with the poorest countries for employment), and the financial “bottom line” over government policies all over the world. This effort has succeeded in creating declines in unionization, social welfare, protective regulation, and labor standards, and has led to pressures to convert education and health care into profit-making enterprises (75). This one-sided class war framework has been presented in books by Harvey, Davis, and Moody, among others (20–22, 24, 76, 77). The basic thrust of this position is that in the mid- to late-1970s, those who own and run large businesses switched to a more aggressive stance toward unions, social programs, and regulation of business.

One of the first examples of this successful one-sided class war campaign was the “New York fiscal crisis” of 1975 where financial institutions declared that the debts of New York City required massive cutbacks<sup>2</sup>. After New York State established a fiscal control board in charge of the City budget, it made major

<sup>2</sup>This is an example of a Structural Adjustment Program being applied to a major city in a core superpower.

cuts in municipal services and spending, froze municipal salaries (at a time of rapid increases in the cost of living), laid off large numbers of civil servants, including many union members, raised bus and subway fares, cut welfare spending, and closed many local hospitals, libraries and fire stations. They also successfully demanded that the unions representing city workers allocate much of their pension funds to the purchase of city bonds—putting the pensions at risk if City bankruptcy took place. As Wallace & Wallace have shown, the closures of fire stations and the general onset of austerity led to massive fires breaking out and spreading in the poorer, mainly Black and Latino, areas of New York (78). These, in turn, led to extreme overcrowding in nearby areas as the dispossessed sought places to live, the decay of school and recreation facilities for youth, and an increase in drug use and vulnerability to infectious disease epidemics such as of tuberculosis and HIV (79).

The one-sided class war took many forms. One of these was the deregulation of the air and trucking industries, which greatly weakened union power and protections for workers in these large industries. More broadly, business increasingly took anti-worker and anti-welfare stands on a wide variety of legislative and administrative issues. This led to some militant rhetoric by some labor union leaders and others—rhetoric which was not by and large backed up by their later actions. A symbolic example of this was a letter made by Doug Fraser, President of the United Automobile Workers, which was at that time a powerful union if and when it chose to strike. This event is described in an article by Jefferson Cowie as follows (75):

In July of 1978, Douglas Fraser ... resigned from John Dunlop's Labor-Management Group in a flurry of publicity. The committee had been set up under the Nixon administration to seek out cooperative solutions to labor-management problems and to pass advice along to the White House. Although the group was supposed to reflect the postwar consensus in labor-management relations, Fraser's public resignation and the press conference that accompanied it shredded the fiction of that consensus ... “I believe leaders of the business community, with few exceptions, have chosen to wage a one-sided class war today in this country—a war against working people, the unemployed, the poor, the minorities, the very young and the very old, and even many in the middle class of our society,” he declared. “The leaders of industry, commerce and finance in the United States have broken and discarded the fragile, unwritten compact previously existing during a past period of growth and progress.”

Later, as Cowie describes, the letter argues that:

The new flexing of business muscle can be seen in many other areas. The rise of multinational corporations that know neither patriotism nor morality but only self-interest, has made accountability almost non-existent. At virtually every level, I discern a demand by business for docile government and unrestrained corporate individualism. Where industry once yearned for subservient unions, it now wants no unions at all.

As we discussed above, the increase in overdose deaths began in 1979 and has increased dramatically since then (see Footnote 2). During this time, the dominance of neoliberal ideology and

globalization of investment and supply chains proceeded apace, as did the decline in unionized percentages of the workforce. (And as discussed above, Ikeler has presented evidence that the decline of unionization has been a predictor of overdose deaths both longitudinally and cross-sectionally) (58). Elections in both the United States (Reagan) and the United Kingdom (Thatcher) put explicit advocates of neoliberal ideology and policies in charge of two major countries. The Federal Reserve of the United States soon thereafter enacted policies designed to “contract” the economy and thus to increase unemployment—which often meant that companies moved industrial production out of what became the Rust Belt to areas where unions were less prevalent so lower wages could be paid and working conditions worsened in efforts to improve productivity rates.

In both the US and the UK, nationally-coordinated efforts deliberately provoked powerful unions to strike and then mobilized the power of the government and of corporate-owned media to defeat the strikes and (in the US) to de-certify the union (the Professional Air Traffic Controllers Organization). Large-scale decreases in the staffing and the authority of regulatory agencies have also taken place. The power of US unions, and the ability of workers to resist worsening work conditions, has been weakened by bureaucratic internal union regimes; racial/ethnic divisions; political dependence on the Democratic Party; the lingering effects of the red-baiting era and other factors (22, 80–82).

The Great Recession that began in 2007 exacerbated many of these effects by increasing fiscal pressure on governments to implement austerity programs and by increasing unemployment, part-time employment and precarious employment—which have been associated with increased injury rates and other sources of pain—and it should be noted that sharp increases in overdose deaths from opioids and stimulants began shortly thereafter (83).

Pharmaceutical companies were assisted in become massive purveyors of addictive pain medicines by the reduction of government regulatory power over corporations and by the dominance of neoliberal ideologies that support companies’ taking actions that yield large profits without regard to “collateral damage”. This was also facilitated by active intervention on the part of pharmaceutical companies to influence clinical pain treatment assessments, guidelines and practices (1). Furthermore, since the era of neoliberalism has been a time in which short-term gains have been emphasized as the key economic indicator, corporate managers and boards of directors were induced to strive for high profits even if some patients might become opioid-dependent as a result. Finally, another thrust of neoliberal thought, and one which has been useful in helping corporations take potentially-profitable activities away from state control, has been the emphasis on *efficiency via cost-cutting* (84). In health care systems, this has taken the form of insurance companies’ decisions that doctors and medical organizations can only be reimbursed for performing particular activities, and the pressure this creates for medical institutions to emphasize that doctors process patients rapidly. One aspect of this process was a de-emphasis on behavioral pain therapy and an emphasis on using pharmacotherapy, i.e., analgesics—and particularly opioids—as a way to treat pain (1). In sum, then,

the one-sided class war impelled pharmaceutical corporations to maximize their profits lest they go bankrupt or face hostile take-overs, made the production and aggressive marketing of opioid a lucrative way to do this, and reduced regulatory and other counter-pressures that might have deterred them from emphasizing opioids.

The one-sided class war also created communities of despair. Our discussion above showed how it led to the economic abandonment of many communities by manufacturing and other industries that had previously provided stable jobs (with health and other stabilizing benefits); to the destruction or significant weakening of unions that provided social support and identity to many residents; and to the weakening of schools, youth programs, and other community institutions (57, 85, 86). In addition, the neoliberal project that has been a major political form that one-sided class war took has included an ideological emphasis on “individual responsibility” and thus on “individual blame” for failure. Political leaders of both parties, notably including both Presidents Reagan and Clinton, emphasized personal responsibility and the guilt of failure. Thus, neoliberal ideology frames the effects of economic disasters and social institutional decay on each individual and on each family member as being their own fault. This sense of failure, guilt and hopelessness is a major component of communities of despair. Scripts and solidarities that can oppose this sense of guilt and failure were, as both Ikeler and Shered Starr demonstrate, greatly weakened as their institutional bases like unions and some public school systems were attacked by the powerful and as over-policing interacted with these to create a “school-to-prison pipeline” and neighborhood disruption (87). Further, as these same authors also demonstrate, opioids and other psychoactive substances have helped to alleviate (albeit perhaps transiently and with later resultant morbidity) the psychic pain, and drug cultures have created some oases of solidarity.

The discussion above showed that there are positive associations of high-risk occupation and industry with drug use and with fatal overdose. Moody’s work, among others, describes pathways through which one-sided class war contributed to increases in both acute and chronic pain. One historic function of unions has been to protect the health and safety of workers. When unions have been stronger, this has been more effective; when they have been weaker, injuries and painful exposures have increased (21, 22, 88–90). Similarly, the ability of individual workers and work groups to defend their safety and health is stronger when their economic security is greater and when solidarity-supporting belief systems are stronger in a community. In the absence of these protections, employers force workers to work more; workers are less likely to hear of and respond to dangerous machinery or risky occupational exposures in time to prevent adverse consequences; and workers are less able to help each other resist management demands that they perform tasks that might lead to musculoskeletal or other injuries. Similarly, many of the employed and some classified as “unemployed” work at part-time or off-the-books jobs with even less than average protection against injury and pain. This is one reason why overdoses are high in agricultural, restaurant and non-union sectors of construction work.

In addition, the lack of worker power on the job often leads to, and perhaps results from, workers' having no time to be sociable or form bonds of solidarity on the job. Further, employers control work-time scheduling so that workers' schedules do not overlap as much as in traditional work. This can contribute to loneliness and to demoralization both at work and in the community—and this, in turn, can open paths to drug use.

Another way in which one-sided class war can lead to higher rates of painful exposures and injuries is through deregulation. Protective government organizations like the Occupational Safety and Health Administration (OSHA) have had their authority to conduct workplace inspections reduced. They have also been starved budgetarily, which has resulted in great reductions in staff availability to conduct inspections. (Similar pressures have also weakened the statistical ability of the government to produce accurate and consistent records of workplace safety and health).

In sum, then, one-sided class war has been a major contributor to the opioid/overdose epidemic by facilitating pharmaceutical companies in their push to increase profits through selling addictive pain medications, specifically opioids; creating communities of despair; and contributing to pain in the population. This suggests that ending (or at least reducing) the one-sided class war might help address the opioid/overdose epidemic.

## INTERNATIONAL OPIOID EPIDEMICS: EVOLVING EVENTS AND CONSIDERATIONS

The discussion and analysis above have focused on the United States, which has been the country most dramatically affected by the opioid epidemic. However, a very similar constellation of forces has led to a significant opioid epidemic in Canada (91–94), affecting every region of the country, albeit unevenly as has occurred in the US. Given that the processes of neoliberalization which contributed to the environment in which the opioid epidemic developed in the US and Canada have also impacted many other countries, reasons for the lack of apparent development of opioid epidemics elsewhere require further study. One potential factor contributing to the varying risk of opioid epidemics in different countries may be the nature of their respective health care systems; health care systems which are primarily for profit and without a single payer, and where high proportions of the population lack health insurance (as in the USA although not Canada) may be at greater risk for a variety of reasons, including that these factors may make it more profitable for pharmaceutical companies to heavily market opioids. Use of restrictive national formularies, which limit the types of opioids which may be used for non-cancer pain, and more restrictive prescribing regulations, may also play a role (95). A study comparing opioid prescribing in eight countries, for example, found that US patients were more likely to receive opioid prescriptions than patients in other countries (96). There are also differences in national and regional regulations which limit various forms of advertising and marketing as well as

degrees to which pain treatment guidelines were influenced by pharmaceutical companies. Nonetheless, it is also plausible that opioid and overdose epidemics may occur at different times in different countries due to different balances of “market forces” (meaning neoliberalization, de-industrialization, occupational pain), pharmaceutical marketing efforts and class struggle. Importantly, there are reports that pharmaceutical companies are currently utilizing marketing strategies (such as claims of low addictive potential) that have been curtailed or diminished in the US and Canada, in other countries such as Germany, Italy, Australia, Brazil, Mexico, China and elsewhere (97–99). Also, opioid consumption is increasing in the Netherlands, and the UK NHS has reported that the number of opioid prescriptions has risen dramatically from 2008 to 2018 (100, 101).

There are, of course, many other forces and processes that affect which drugs are available for sale in which locations around a given country or the world. For example, the presence of synthetic fentanyl as a street drug or laced in the heroin drug supply has been reported much more frequently in U.S. relative to most European countries, and likely contributes to differential opioid use and overdose patterns across these regions (102).

Finally, there are clear differences in the extent to which the class war has been one-sided in different countries of the world (22, 77). The United States has long been an outlier among developed countries for lacking a large socialist, social democratic, labor or communist party, for example. In addition, at the start of the period of one-sided class war in the United States, the labor movements in different countries varied widely in political power, organization and capacity to disrupt the economy. The United Kingdom, for example, had a very strong shop stewards movement that was able to organize widespread strikes that drove at least one Prime Minister from power, whereas no comparable capacity existed in the United States. Although the period since then has seen many defeats for workers in Britain, they retain both influence in the Labor Party and capacity for strike action that, at least until 2016, are far greater than comparable forces in the United States. Research is needed on the extent to which these differences underlie international differences in the degrees of regulation imposed on pharmaceutical opioids, the extent of occupationally-induced pain, and/or the dynamics of communities of despair or the ways in which members of these communities do or do not get involved in opioid use.

More research on the international dimensions and implications of the opioid and overdose epidemics are clearly needed. The discussion in this section suggests that such research will need to consider a wide range of social, economic, political and regulatory factors and will need to consider both the historical records and longitudinal data.

## IMPLICATIONS FOR ACTION

Many strategies have been proposed and some implemented for dealing with the opioid/overdose crisis. The Federal and some state governments have expanded drug treatment availability, including evidence-based medications for opioid use disorder.

This is much needed; treatment gaps in the United States are huge (103). Efforts are being made to improve coordination among treatment, harm reduction, law enforcement and other community organizations, and to increase availability of naloxone with which to conduct overdose reversals. In addition, the medical community is shifting standards for pain prescribing, and both regulation and law suits have served to reduce pharmaceutical corporations' efforts to increase prescription opioid use. It is too soon to tell whether these efforts will reduce the overdose crisis. It is notable that overdose mortality due to stimulant use has been increasing rapidly in recent years. Furthermore, harm reduction and drug treatment services, as well as drug treatment regulations, budgets, and the cultures of many communities (and of people who use drugs within these communities) have been deeply affected by the COVID-19 pandemic and its related socioeconomic crises, with unknown implications for the future of opioid and stimulant use and of overdose mortality (104–106).

Harm reduction efforts such as expansion of naloxone access, as well as efforts to regulate opioid prescribing through prescription drug monitoring programs and pain management clinic laws, have been associated with reductions in opioid overdose deaths (107–112). Indeed, following investment in multiple efforts to curb high risk prescribing and regulate overall opioid prescribing, prescription opioid overdose rates leveled off (although they did not decrease). At the same time, overdoses involving synthetic opioids continue to increase, as well as overdoses involving both opioids and stimulants.

Furthermore, there is a strong likelihood that in the absence of action to reverse the one-sided class war, conditions in American communities will get worse for a majority of people due to further cuts in services, further rollbacks of safety regulations, and the increasing consequences of climate change and its many ramifications (113, 114). The worsening conditions are likely to increase despair and to produce additional sources of injury and pain. Thus, unless the disruption due to climate change disrupts access to drugs, these changes are likely to induce additional drug use and overdose mortality.

The COVID-19 pandemic and its associated economic crisis may have devastating impacts on efforts to reduce community despair and occupational pain. These events have created enormous costs for state and local governments and have reduced their revenues to a great degree. Political battles over how to make their budgets are likely to occur as long as the economic crisis persists, and to be full of conflict. The one-sided class war has created the conditions under which what Naomi Klein has called the "Shock Doctrine" is likely to be successful (115). The Shock Doctrine describes how corporations and politicians use crises to seize the initiative and cut public services such as schools, welfare and public health and eliminate regulations that limit what corporations can do. These are precisely the types of policies that have facilitated the opioid/overdose crisis. Beyond that, such policies are likely to lead to cuts in treatment for opioid use disorder and other drug treatment approaches, and perhaps weaken harm reduction programs as well.

The analysis in this paper points to counteracting the one-sided class war as a strategy that focuses on an upstream cause of

pain, community despair, and pharmaceutical sales of addictive medicines, and that also organizes power to resist Shock Doctrine kinds of attacks. (We would argue that this would have many advantages to many people in addition to those specifically concerned with drug use and overdose, including making it more feasible to reduce greenhouse gas emissions. Those who support or profit from the one-sided class war might disagree).

Counteracting the one-sided class war is not easy, and will involve internal discussion and struggle within the working class among racial/ethnic groups, gender groups and among people with different employment statuses and occupations. These issues have been discussed by scholars and activists from many disciplines (22, 77, 80, 82, 116, 117). We will not propose a fully developed strategy for addressing these issues here. The social and economic disruptions related to COVID-19 have created a rapidly changing sociopolitical and economic environment that poses particular difficulties for strategic planning at this time, although they also offer opportunities for social change (see below).

What we will do is point to two general lines for strategic action. These should be studied and evaluated.

The one-sided class war has been supported politically by the ideologies of neoliberalism that posit individuals and corporations as the building blocks of society and see governments (except in their law enforcement and military mores) as taxing away resources from these building blocks and as limiting individuals' and corporations' freedom to innovate and bring prosperity. One strategy for weakening or reversing the one-sided class war is to attack these ideologies. Indeed, many people have been trying to do this since the 1970s. Articles like this one, which show some of the harmful effects of neoliberal one-sided class war, are indeed inherently part of this strategy.

The other basic strategy is to make the class war two-sided. In recent years, but before COVID-19, mass teacher strikes that had won gains for teachers, other government employees, and school kids had shown that such an approach can make gains. Events during the first half of 2020 have initiated a period of social contestation that seems to create additional avenues for opening up the class war insofar as they have led to mass activism by Black people and their allies around police violence and other issues. It should be remembered that similar movements in the 1960s contributed to increases in both union organizing and active struggle within and by previously organized unions (including struggles over racism within unions) (80, 81, 88). The first half of 2020 has also seen a wave of more wildcat (unofficial) and other strikes than have taken place for decades (118). Mass struggles over how to resolve the COVID-19-related budget deficits in state and local governments are just one form of such likely struggles over the next few years. More generally, efforts to build a mass-based social movement unionism along the lines Moody has put forward, if successful, could do much to make the class war two-sided and to reduce community despair and occupational pain and injury (22).

Community organizing of various sorts can also help blunt and reverse the damages wrought by one-sided class war. Indeed, Moody, Shered Starr and Ikeler all point to ways this can be done. We would add, based on our experience and that of harm reductionists globally, that people who use drugs have set up organizations of their own in some areas that sometimes take part in community and other activist movements. They can be effective members of such community organizing, and can contribute to ensuring that community and union efforts address opioid- and overdose-related workplace and community problems.

In sum, then, one-sided class war has been an important upstream contributor to the chain of causation that has led to, and continues to drive, the opioid and overdose epidemics. Our paper points to important issues for new research to address and to new intervention approaches that might help reduce opioid and overdose problems.

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SF took overall responsibility for the paper. MC drafted some sections. All authors contributed ideas and contributed to the writing of the paper, and reviewed it and agreed it should be submitted.

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# Breaching Trust: A Qualitative Study of Healthcare Experiences of People Who Use Drugs in a Rural Setting

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**Background:** Increased drug use has disproportionately impacted rural areas across the U.S. People who use drugs are at risk of overdose and other medical complications, including infectious diseases. Understanding barriers to healthcare access for this often stigmatized population is key to reducing morbidity and mortality, particularly in rural settings where resources may be limited.

**Methods:** We conducted 20 semi-structured interviews with people who use drugs, including 17 who inject drugs, in rural southern Illinois between June 2018 and February 2019. Interviews were analyzed using a modified grounded theory approach where themes are coded and organized as they emerge from the data.

**Results:** Participants reported breaches of trust by healthcare providers, often involving law enforcement and Emergency Medical Services, that dissuaded them from accessing medical care. Participants described experiences of mistreatment in emergency departments, with one account of forced catheterization. They further recounted disclosures of protected health information by healthcare providers, including communicating drug test results to law enforcement and sharing details of counseling sessions with community members without consent. Participants also described a hesitancy common among people who use drugs to call emergency medical services for an overdose due to fear of arrest.

**Conclusion:** Breaches of trust by healthcare providers in rural communities discouraged people who use drugs from accessing medical care until absolutely necessary, if at all. These experiences may worsen healthcare outcomes and further stigmatize this marginalized community. Structural changes including reforming and clarifying law enforcement's role in Emergency Departments as well as instituting diversion policies during arrests may help rebuild trust in these communities. Other possible areas

for intervention include stigma training and harm reduction education for emergency medicine providers, as well as developing and implementing referral systems between Emergency Departments and local harm reduction providers and medically assisted drug treatment programs.

**Keywords:** rural, opioid, inject, drugs, healthcare, stigma, access, barriers

## INTRODUCTION

People who use drugs, especially via injection, are at increased risk for medical complications, including HIV, hepatitis C virus (HCV), sexually transmitted infections (STIs), endocarditis, skin and soft tissue infections, psychiatric illnesses, and overdose (O'Connor et al., 2014; Kievlan et al., 2015; CDC, 2018, 2019). It is also highly likely that people who use drugs are at increased medical risks from COVID-19 (Vasylyeva et al., 2020; Volkow, 2020). Despite these risks, people who use drugs access primary care less often and utilize emergency medical services (EMS) more frequently than the general population. The under-utilization of preventative healthcare services in this population can lead to a variety of adverse health outcomes, including high infectious disease prevalence and poorer mental health, as well as higher costs from medical complications and overuse of EMS (French et al., 2000; Ahern et al., 2007; Patrick et al., 2012; Artenie et al., 2015; Paquette et al., 2018; von Hippel et al., 2018).

One explanation for the under-utilization of medical care by people who use drugs may be their experiences with stigmatization. (Earnshaw and Chaudoir, 2009) conceptualized the theory of enacted and anticipated stigma of those living with HIV and have since adapted the concept to people who use drugs (Earnshaw et al., 2013). The authors define enacted stigma as “experiences of prejudice, stereotypes, and discrimination from others in the past” and anticipated stigma as “expectations of prejudice, stereotypes, and discrimination from others in the future” (Earnshaw et al., 2013, page 3). The enacted stigma that people who use drugs face from society, as well as the associated adverse effects on risk behavior and health outcomes, is well-documented. For example, research by Friedman et al. (2017) showed that after people who inject drugs experienced interpersonal attacks on their dignity, they partook in riskier health behaviors, such as needle sharing. Similarly, an Australian study found that among people who inject drugs, those who reported discrimination in the past 12 months had elevated rates of overdose, diminished physical functioning, and mental illness (Couto e Cruz et al., 2018). The primary sources of discrimination reported by participants in this study included pharmacies, doctors, and hospitals. This correlates with findings that medical providers may harbor negative attitudes toward people who use drugs and often lack sufficient training or knowledge to address their medical concerns (Merrill et al., 2002; Brener et al., 2010; van Boekel et al., 2013; Pullen and Oser, 2014; Chiarello, 2016).

Rural communities are disproportionately burdened by opioid and methamphetamine use in the United States (Ellis et al., 2018; Palombi et al., 2018; Baker et al., 2020). Stigma and other barriers

to accessing medical care can be magnified in rural settings where there are fewer options for healthcare services and perhaps less anonymity in medical interactions (Jones et al., 2009; Pullen and Oser, 2014; Buer, 2020). This problem is compounded by a fear of legal consequences that can follow the identification of illicit drug use by a patient, such as incarceration or losing custody of their children (Koester et al., 2017; Latimore and Bergstein, 2017). Such legal consequences and vulnerability to discrimination and stigmatization may be exacerbated by recent changes to rules governing confidentiality of patient records in substance use disorder treatment (Knopf, 2020). Despite the profound impact that such barriers have on health outcomes, few studies have elicited the experiences and perceptions of people who use drugs regarding healthcare interactions, particularly in rural settings. Understanding the healthcare experiences of people who use drugs in rural communities can help inform interventions that improve access to, and quality of, healthcare for this vulnerable population.

Through qualitative interviews in rural southern Illinois, we explored people who use drugs' experiences with healthcare systems, particularly Emergency Departments (ED) and EMS. In this paper, we describe the barriers they faced when seeking medical care and their responses to those barriers. We also explore the role law enforcement played in their medical decisions and experiences.

## MATERIALS AND METHODS

This study reports findings from qualitative data of the Delta Rural Health Study, a member of the multisite Rural Opioid Initiative (ROI) cooperative agreement (see Funding). The ROI focuses on understanding rural opioid use and the potential for HIV, HCV, and other sexually transmitted infections in nine rural regions of the United States.

### Study Setting

The study was performed in the Illinois counties of the Delta Regional Authority, an understudied area with high rates of HCV infection and drug overdose (Illinois Department of Public Health, 2017). This region consists of the 16 southernmost counties of Illinois: Randolph, Perry, Franklin, Hamilton, White, Jackson, Williamson, Saline, Gallatin, Union, Johnson, Pope, Hardin, Alexander, Pulaski, and Massac. According to the 2018 American Community Survey, these counties are predominantly rural, with an average population of 20,623 and the region has substantially lower median household incomes than Illinois as a whole (United States Census Bureau, 2019).

## Participant Eligibility and Recruitment

Participants had to be at least 15 years old, report injecting any non-prescribed drug or using non-prescribed opioids by any route in the past 30 days, reside in one of the aforementioned counties, speak English, and provide informed consent. Participants were recruited from three sources: (a) an indigenous local harm reduction organization (HRO) that provided mobile syringe services, naloxone and HIV/HCV/STI testing, (b) persons who completed the study's survey component and referred additional participants as part of an incentivized respondent-driven sampling approach (Heckathorn, 2011), and (c) a community-based drop-in center that primarily served people experiencing housing instability. As interview recruitment progressed, participants were purposively selected to provide variation in demographics, drug of choice, and county of residence, as well as variations in experiences with medical care among persons who knew themselves to be HCV-positive.

## Data Collection

All participants completed the informed consent process. Persons incapable of informed consent due to drug withdrawal or intoxication were rescheduled. Three members of the research team conducted semi-structured, audio-recorded narrative interviews with participants using an interview guide described below. Interviewers had no affiliation with healthcare providers used by people who use drugs in the study area. Interviews took ~45–90 min and were audio-recorded. A unique ID and pseudonym were created for each participant, and interview transcripts were de-identified. Participants were paid \$40 cash for their contribution. The study protocol was reviewed and approved by the institutional review board at the University of Chicago and participant involvement was covered by a Federal Certificate of Confidentiality.

## Interview Guide

The interview guide was collaboratively developed by researchers from all sites participating in the Rural Opioid Initiative and aimed to investigate sociocultural factors associated with illicit opioid or other drug use, high-risk drug and sex behaviors, harm reduction, and social network characteristics. It also explored factors impacting healthcare and social service utilization, treatment for substance use, experiences with law enforcement, and knowledge of laws regarding drug paraphernalia, naloxone (an opioid reversal agent), and overdose reporting. Specific questions regarding healthcare experiences included "Have you ever decided that you needed care, but didn't go?" and "Tell me about your most recent interaction with any doctor or other health care provider." Demographic data were collected with each interview.

## Data Analysis

Recorded interviews were professionally transcribed and then reviewed by interviewers to correct transcription errors and omissions. After finishing an interview, interviewers made notes regarding the interview, including identifying potential themes. Data analysis combined structural coding (Guest et al., 2012) reflecting specific topics of interest at the study's inception

and a modified grounded theory approach where themes are coded and organized as they emerge from the data (Charmaz, 2006). A primary coder developed a code book of mostly *a priori* codes based on the interview guide and then coded one transcript, refining the code book throughout the process. A second coder coded the same transcript to check for fidelity and overall consistency in the application of codes. Once these codes were agreed upon, iterative coding was conducted by the primary coder for the remaining 19 transcripts. For this study, further thematic analysis was conducted regarding participants' experiences with medical care providers, with a focus on barriers to seeking or accessing medical care and participants' responses to these barriers. Transcript coding and analysis was done in NVivo 12®.

## RESULTS

Twenty participants were interviewed, their mean age was 36.6 years and the majority were white (90%), which aligns with census data for this area, and male (65%). In the 30 days before their interview, the average number of drugs used was 4.6 and over half (17) of participants had used methamphetamine. Other commonly used drugs were prescription anxiety drugs (12 participants), heroin (10 participants) opioid painkillers (10 participants) and cocaine or crack (10 participants). There are no definitive descriptions of drug use prevalence in the area studied, but our sample appears to reasonably align with substance use patterns suggested by local harm reduction providers, drug treatment programs, police drug seizures, and newspaper reports.

The primary finding is that participants reported multiple, interrelated barriers to seeking medical care. Structural, financial, and interpersonal issues often led participants not to seek care or created barriers when they sought care. Structural and financial barriers included limited nearby services, lack of transportation, and inability to pay for care. However, interpersonal factors, many of which were linked to participants' prior experiences with medical services, were described by participants as the most formidable barriers to care.

We divided interpersonal factors into three broad themes: (1) stigma, (2) inappropriate treatment, and (3) fear of negative consequences. Participants' responses to these barriers were included within each theme. We found that most of the medical services discussed were provided by EMS or EDs and their associated providers and that law enforcement interactions played an important role in participants' healthcare experiences and decisions. We use pseudonyms throughout the paper when quoting participants.

### (1) Stigma

Descriptions of stigma and discrimination were pervasive throughout participants' narratives. Enacted, or past experiences of stigma, led to expectations of future stigma, which affected participants' healthcare seeking decisions.

#### (a) Enacted Stigma:

Participants reported being treated poorly or differently by medical providers as a result of their drug use or providers' assumptions about their drug use. Participants recalled being

identified as a person who used drugs by drug testing, track marks on their arms, or the inability of staff to access veins for blood draws. After being identified as a person that used drugs, participants felt immediately stigmatized and mistreated. Sam, a 40-year-old man, described a medical interaction as “[...] horrible, horrible. They treated me like shit because they knew I was a drug user.” He went on to describe what he experienced as a forced catheterization.

It was a local hospital up here in [Town A]. They treated me like shit. They obviously knew that... I had scarred veins and stuff like that... They needed me to pee for urinalysis just to see what was in my system and they said that if I couldn't... I told them I didn't have to pee but if they brought me some water that I'd be able to drink the water and give me about 15 minutes and I'd be able to pee. They brought in the water cup and they let me take one sip of it and then they asked me to pee. I told them I couldn't and they catheterized me... They held me down and cathed me, yeah... It wasn't the best experience.

Maya, a 60-year-old woman, Walter, a 33-year-old man and Sarah, a 38-year-old woman, respectively, described being treated like a “second class citizen,” “piece of crap,” and “drug addict” in medical settings. Maya explicitly stated “I don't like going to the ER because you're treated like a junkie.” Emily, a 27-year-old woman, described an initial evaluation that she felt led to stigmatizing treatment.

When I have had to go to the ER for anything, the first thing they do is drug test. Like if you go in for a legit reason, like something's really wrong, and the first thing they do is drug testing, like, “Well, you're not going to treat somebody that's on drugs?” They make it a point to have you drug tested and then they want to... You get treated different if you do fail your drug test in there.

These examples show how participants felt stigmatized, dehumanized, and mistreated by medical providers based on their identification as people who use drugs when they accessed care. The next section explores how past experiences of discrimination affected decisions about future utilization of healthcare.

#### (b) Anticipated Stigma:

Participants often described situations in which anticipated stigma, in the form of judgment or discrimination, discouraged them from accessing medical care or disclosing their drug use to providers. Rob, a 42-year-old man, described being “too embarrassed” to seek care for an injection-related abscess. Similarly, Jack, a 43-year-old man, expressed a concern about facing stigma due to a medical diagnosis when asked if anything kept him from seeking care.

Yeah. Yeah. Because pretty much if you got hep C nowadays, it's because you were an addict. That's usually pretty much the only way nowadays that people have it. They're going to know you're an addict... I don't want to be judged.

Due to anticipation of stigma or mistreatment, participants often reported avoiding medical care. Alex, a 40-year-old man, said

he would not seek care unless he was “in extreme pain,” and Emily explained “I don't ever see any doctors or I try to avoid the ER at all possible costs.” When asked about one healthcare setting, Walter recalled being “treated fine there, so long as it's not for drugs” but when pressed further about his experiences he responded “I try not to get sick much.”

Some participants sought care but described strategically withholding disclosure of their drug use to providers to avoid judgement. As Kelly, a 30-year-old woman, responded when asked if she discloses her drug use: “No, I don't. Not until it comes down to it. Especially if... Because I don't want everybody that comes across my paperwork to read it.” A few reported that they generally were upfront about using drugs. For example, Anthony, a 25-year-old white man, initially told us that he was “totally comfortable” making this disclosure, although he described providers' reactions as “disbelief” due to his “clean-cut” appearance. This description suggests that white race and a middle-class appearance can be deployed to offset at least some of the stigmatization that a person using drugs is likely to encounter when seeking medical services. However, in section 2, below, Anthony also described using a calculus to decide when to disclose.

Jack described the relationship between needing pain medication for an injury, but also wanting it for his “addictive mentality” and struggling with how much to tell his providers in order to be treated like a patient and not an addict.

So, I need to go get stitches. Me not wanting to look like an addict, but at the same time I knew I was in pain then and I knew I'd be in pain after they'd put the stitches in, so I wanted pain pills, and my addictive mentality wanted the pills too. Over the years, I have been looked at, looked down on because I was an addict and treated different in a hospital. I don't think that's right. Your job is there to treat the problem but you had so many addicts going in there and trying to work the system to get free pain pills... That makes it look bad for the people that actually kind of need them... Myself included, I've done it myself. Went and said I had a backache or a toothache and nothing was on me just so I can get pain pills... But then when you need them, you don't want to ask because then if you already know what you're talking about and what you're asking for, they'd pretty much know you're an addict, that's some con... They do treat you different.

Overall, between enacted stigmatizing behaviors by medical providers, and the anticipated stigma that participants felt they would face in medical settings, stigma played a key role in participants' medical decisions and acted as a barrier to seeking care and disclosing important health information.

#### (2) Inappropriate Treatment

Participants described experiences in which they felt their medical issues were undertreated or inappropriately treated because of their drug use, particularly regarding pain management.

Participants described not receiving the medical attention they needed and providers not taking their pain or medical concerns seriously. Sometimes participants felt they were undertreated because providers assumed that they were seeking drugs. In response, Anthony said that the decision to disclose his drug use

depended on the reason he was seeking medical care: “Yeah, so I don’t know, it just depends on what the reason that I’m going. If I’m going because I have respiratory issues going on, I’m going to tell them the truth. If I go there because I broke a rib, I’m going to lie.”

Other participants attributed their poor care and follow up to providers’ perceptions of them as drug users and their past experiences of stigmatization in medical settings. For example, Matthew, a 27-year-old man, described long wait times and frustrating results from his local emergency department.

Like I said, you don’t get, you can’t go in off the street and get real care there... You can’t, it’s very, very hard to go to that ER without being there for two or three hours and walking out with nothing other than more resentment, more frustration and pain and anxiety and feeling more wronged and more dehumanized and less trust and faith in your own nation. Honestly, every day of my life, I’d give anything just to have real healthcare and real support health wise.

Kelly described experiences of visiting multiple hospitals in unsuccessful attempts to receive adequate care.

Oh, I mean just in general. We call [facility A] the band aid hospital. Sometimes they give us our kind of band aid and push them on their way. Other hospitals give our... We end up leaving that hospital and go straight to another one because they’re still bleeding, and they give them a suture or two, or something like that.

While some participants described having sought pain medication from EDs or other providers when they were not in need of medical treatment, they also described situations in which they were in considerable pain from legitimate medical conditions but felt they were not treated appropriately because of their drug use history. For example, Maya explained, “you go to the hospital and they won’t so much as give you a pain shot because they see track marks and they think you’re fishing for pain medicine, when you’re in legitimate pain.”

Other participants described specific situations in which they believed their medical issues had been undertreated. Trevor, a 38-year-old man, described being left “on the back burner” at an ED when he tried to receive care for a neck abscess. He also stated that ED staff were “profiling” to determine who to give pain medication to: “If you’re older and you look straighter, if you look fine, good cleaned up and look fine, they’ll give you [pain medication].” In another example involving mental health, Allison, a 38-year-old woman, described self-medicating in response to the long wait times to see a psychiatrist: “Here, you can’t get into one for months at a time and people have got to get rid of that, that whatever, anger, hurt, and dulling it is the easiest way to do it. It’s easy to do with drugs.” David, a 39-year-old man, spoke of the risk of being denied medical care all together because of drug use: “they might not treat you after they find out you’re on drugs.” Overall, as Evan, a 57-year-old man explained about his local hospital, a general sentiment was that hospitals “ain’t doing shit” for the medical concerns of people who use drugs.

There were a few examples in which participants perceived they had been inappropriately treated with psychoactive substances by medical providers. Megan, a 38-year-old woman, expressed that she felt a provider had overprescribed her anti-anxiety medication that she did not need at the time. Kelly noted cutting the dosage of her opioid prescriptions in half because her providers gave her dosages that were too high. She went on to describe medical providers as “Pez dispensers.” In another example, David, who primarily injected methamphetamine, described convincing a nurse to inject him with his prescribed pain medication in a rehabilitation facility because it did not work fast enough when he took it orally.

And so they started with the therapy really intense, and it hurt. It hurt so bad, and just taking the pills just wasn’t fast enough...I talked one of the nurses into breaking one down for me. And she injected it for me for the first time. And it worked. So she started breaking them down for me, and I started injecting myself. After 6 weeks of doing this, they released me from the hospital, and they put me through pain therapy, and they took me off of it, and it was hell. Started looking for them on the street.

A common result of these negative experiences as expressed by participants was to lose faith and trust in their medical system. As Anthony described about providers, “They cover each other’s asses. I don’t like it. They’re not... I just don’t trust them, and for good reason.” Matthew described his feelings that medical providers are more worried about their livelihoods than their patients and that medical institutions’ financial concerns are more important to them than patient care.

They don’t care about people at all. They care about the student loans they had to take out to go to school to work at that hospital taking care of other people. I see it every day and it just breaks my heart.

When participants felt their medical concerns were ignored or they were inappropriately treated, they chose to hide their drug use from providers, treat themselves, or give up on the system and avoid accessing care all together.

### (3) Fear of Negative Consequences

Another barrier to accessing medical care was a fear of negative legal and social consequences. These consequences came in two general forms, the most common was a fear of law enforcement involvement due to participants’ drug use. This fear was often cited when EMS responded to an overdose. The other form was a fear of breaches in participants’ confidentiality, which could harm their reputation in their communities. We found that these fears were often rooted in both past personal experiences and the experiences of others known to participants.

(a) Fear of law enforcement involvement in medical interactions:

Participants described fears of encountering law enforcement and possible arrest when seeking medical care while they had drugs in their system or were carrying drugs. Ryan, a 35-year-old man, explained that he never goes to the doctor when he has drugs in his system because “(I) don’t want to be investigated.” Trevor described overdosing and begging not to be taken to the

hospital because “I had meth on me.” When asked about how she decides when to access care and how she is treated in local ERs, Emily stated she avoids the ER “at all possible costs” and reported a time that her brother sought medical attention and was arrested for drug possession in the ED.

My brother actually went to the ER. I don't even remember what he went for. And they drug tested him and they called the cops on him. And they're not even supposed to do that. And he ended up going to jail because they called the cops because he failed his drug test and they didn't like him anyways... But, they called the cops on him and then the cops come up there and searched him at the hospital. And he had drugs on him, so he went to jail.

Heather, a 31-year-old woman, was convinced that if she sought medical care with drugs in her system, her medical test results would be shared with law enforcement

I haven't been to the doctor in a long time. When I'm on meth, I don't go to the doctor. You go... if you go to the doctor on meth, and they drug test you, then they fucking file a report with the police, like every fucking time.

Sarah reported not wanting to be treated by a specific ED provider who had previously let police officers into the area where she was being treated because the provider believed she was lying about the causes of her injuries.

In another form of medical service and law enforcement interaction, Maya and Kelly described experiences in which police officers took their legal medications or legal prescription slips from their homes or cars during searches. In both cases, the participants' access to legally prescribed medications was delayed. These actions were seen as disrespectful and dehumanizing, as they suggested that law enforcement concerns outweighed medical care.

Based on personal or second-hand experiences, participants' felt that law enforcement was frequently inappropriately included in their medical care and that accessing medical care, especially while using drugs, would lead to their arrest or investigation.

(i) Fear of calling EMS for an overdose:

Most fears of law enforcement involvement in medical interactions regarded accessing EMS in response to an overdose. While many participants described themselves as willing to call 911 despite experiences or fear of arrest, they recounted others' unwillingness for the same reasons due to, as Anthony put it, a “culture of fear.” Multiple participants recalled situations in which EMS was not called when a person was overdosing. The decision to avoid calling 911 was almost always attributed to fear of legal repercussions. Kelly describes one of these instances:

His whole body was swelling up, his feet, his arms, everything. I told everybody ‘I think he's overdosing.’ But nobody had a car to take him to 911. The other people I was with didn't want 911 called because they were at a house that had a bunch of drugs at it.

When EMS was called for an overdose or any other reason, police officers were said to be the first to respond. Participants felt that in these situations law enforcement was often more concerned

with arresting people or finding evidence for arrests than with addressing the emergency that prompted the call. For example, Emily described being arrested due to an outstanding warrant for a missed court appearance when she called 911 for a friend who had overdosed. Maya described a situation in which police officers first searched her house instead of administering CPR or naloxone while she was overdosing.

They've been called here numerous times that I've overdosed. Cops have to show up before the ambulance. One time, I was sitting in that chair and I was turning bluer and bluer and [husband] called 911. They came in and they said, ‘Well you're going down for homicide,’ to [husband]. He says, ‘I don't care what the fuck you arrest me for. Get her to a hospital. She's turning bluer.’... They sat there and they started searching through the house, dumping out the garbage can in the bathroom and he said, ‘Hey, I didn't give you permission to go through my house. I called 911 to take my wife to the hospital.’... But I sat there for 20 minutes while they argued with [husband], turning bluer and bluer.

Some participants expressed negative attitudes toward EMS, either because they associated them with law enforcement, or felt they behaved as law enforcement rather than medical providers. Sam described not calling EMS when a friend was overdosing because “I just don't like law enforcement at all.” Matthew explained, “EMTs, people who drive and operate ambulances and go to the scenes of crashes and crimes, they need better bedside manner. Every day people are suicidal and having panic attacks and anxiety attacks. When the ER shows up and they act like fucking cops. The cops in this town have more of a bedside manner than the ambulance people.”

Despite these negative experiences, Anthony believed the police had been treating people better since they had been trained to deliver naloxone to those overdosing: “They're trained more to worry about saving this person's life instead of worrying about what fucking... Ted or Alan's got in his fucking cabinets.” However, Anthony also believed a police officer administered CPR improperly to an overdose victim because “you don't want to get a little fucking junkie fucking saliva on your mouth?” Another participant, Walter, described waking up from an overdose in jail, rather than in a hospital: “they had to hit me like six times with [naloxone] and found out I had a warrant so (I) came to in jail.”

Overall, fear of law enforcement involvement, leading to investigation or arrest, was a factor in many of participants' decisions around medical care, and often acted a direct barrier to accessing care, particularly when calling EMS for an overdose.

(b) Fear of breaches in confidentiality:

Another feared consequence that served as a barrier to accessing medical care was that private medical information would be inappropriately shared by medical providers. This was especially relevant given the rurality of the area and the small-town nature of the communities described throughout participants' narratives. For example, when asked if he is worried about a local provider performing his STI testing, Evan expressed concern that his test results may be shared by the local health department. His response suggested that he is skeptical about the







































































































































# Integrating Cognitive Dysfunction Accommodation Strategies Into Behavioral Interventions for Persons on Medication for Opioid Use Disorder

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**Background:** Cognitive dysfunction is disproportionately prevalent among persons with opioid use disorder (OUD). Specific domains of cognitive dysfunction (attention, executive functioning, memory, and information processing) may significantly impede treatment outcomes among patients on medication for OUD (MOUD). This limits patient's ability to learn, retain, and apply information conveyed in behavioral intervention sessions. Evidence-based accommodation strategies have been integrated into behavioral interventions for other patient populations with similar cognitive profiles as persons with OUD; however, the feasibility and efficacy of these strategies have not yet been tested among patients on MOUD in a drug treatment setting.

**Methods:** We conducted a series of focus groups with 25 key informants (10 drug treatment providers and 15 patients on MOUD) in a drug treatment program in New Haven, CT. Using an inductive approach, we examined how cognitive dysfunction impedes participant's ability to retain, recall, and utilize HIV prevention information in the context of drug treatment.

**Results:** Two main themes capture the overall responses of the key informants: (1) cognitive dysfunction issues and (2) accommodation strategy suggestions. Subthemes of accommodation strategies involved suggestions about particular evidence-based strategies that should be integrated into behavioral interventions for persons on MOUD. Specific accommodation strategies included: use of a written agenda, mindfulness meditation, multi-modal presentation of information, hands-on demonstrations, and a formal closure/summary of sessions.

**Conclusions:** Accommodation strategies to compensate for cognitive dysfunction were endorsed by both treatment providers and patients on MOUD. These accommodation strategies have the potential to enhance the efficacy of behavioral interventions to reduce HIV transmission among persons on MOUD as well as addiction severity, and overdose.

**Keywords:** opioid use disorder (OUD), behavioral interventions, cognitive dysfunction, accommodation strategies, qualitative analysis









of information (<5 min of the facilitator talking), followed by the use handouts, videos, group discussion, and/or hands-on demonstrations. For example, one patient on MOUD indicated: “It is a combination of paper material and a video; I think it’s always better to have both. Hands-on is always helpful.” A provider described it below:

“I would tell them about opioid receptors and I would use magnets to demonstrate how opioids transit in the brain. I had a little box and I had balls and I would use different color balls and say ‘this is how methadone affects the brain,’ this is how the naloxone mimics the opioids, and use a square box with a round ball to show how the receptors react differently. A lot of people are more visual so that way, ya know, they’re not verbal, they are visual.”

When discussing the use of video clips, it was consistently recommended to keep them short (<10–15 min) and to include a debrief of the topics discussed immediately following the video. For example, “Incorporating short clips in educational group, the more formats to present the information, the better.” One patient on MOUD noted how videos help to recall information by saying “you’re watching something and, in your mind, you keep looking at it and thinking about it, and you think about it afterwards too.”

The use of simplified verbiage, catchphrases, and visuals were also recommended to be considered when developing handouts for patients to maximize their learning. Providers highlighted the importance of simplifying complex language for patients to better understand, as exemplified by: “so that they can relate to this broken-down version. I just really break it down a few pictures and there’s like a lot of little things like catch phrases or slogans that catch their attention.”

Other accommodation strategies to help patients with cognitive dysfunction focus on the information being presented to them that were supported for use in a drug treatment setting included the use of a written agenda, memory aids, a short (1–2 min) mindfulness meditation and/or breathing activity at the beginning of sessions, and the use of a formal closure at the end of sessions. One patient on MOUD mentioned that “anything you see or actually do, as opposed to just hearing, will help people remember a lot better.”

Patients on MOUD supported the use of a written agenda to help keep them focused. For example, one patient indicated: “I think it’s helpful, it helps me anyways and I can keep looking up there, and in my mind, I keep trying to remember what was put on that board and what we’ve talked about.” A provider also noted how a written agenda can reinforce goals and that patients “feel more accomplished” in striving to meet those goals when they can see what they covered in the sessions. A brief mindfulness meditation and/or breathing exercise was also supported to help improve patient’s ability to focus on presented material. One provider mentioned doing “meditation here [the methadone clinic] for a year, 5 min for every group and it was always successful; they were more receptive to me and the information.” This was exemplified by:

“I think with my experience of running groups with these clients, I’ve been more surprised with how receptive the clients are to some of the things I was anxious about trying. The game group, meditation, I mean I’ve had big burly construction guys

who love the meditation. So, I guess the only thing I would ask is to try! And if it doesn’t work, adapt it for the next time.”

Patients on MOUD consistently noted the use of memory aids to help them remember to take their medications and attend appointments. One patient said “the text message reminder would really help me remember to take it [medication].” Both patients and providers supported the use of an automated reminder system to inform patients of upcoming treatment protocols, such as monthly check-ins with a counselor. One provider specifically mentioned that “it would be feasible” to integrate text message check-ins into treatment protocols. The use of a formal closure at the end of sessions to help patients recollect on the information and set realistic goals to focus on for the next session was also recommended. Participants noted that this gives them the opportunity to engage if they did not feel heard throughout the session; “I like this because sometimes you have a chance to talk, if you’re quiet most of the time or don’t like talking in front of other people, giving an opportunity to talk at the end is better.” A provider mentioned how they would “have them [patients] put out particular goals that they’re trying to obtain, and confirm that that’s what the goal is.” For example, one provider indicated:

“At the end of the session, we would do a review of the material to show you paid attention and learned something or have been affected by something that someone said. And you’ll find commonality and people will build off of it and we discuss themes of the day and the topic of the group and the themes of the day. Being supportive and giving back to one another and just the whole concept of not being alone and sense of community or family.”

## DISCUSSION

Research on the influence of cognitive dysfunction among people on MOUD is quite limited. Studies have shown that cognitive dysfunction may impede treatment outcomes among people on MOUD (10, 14); however, no studies have investigated which cognitive dysfunction accommodation strategies may be most useful and feasible for integration into behavioral interventions in a drug treatment setting. This study is novel in exploring the endorsement of specific accommodation strategies that may be optimal for maximizing treatment outcomes (medication adherence, retention in treatment, healthcare utilization) for persons on MOUD. Themes identified in this qualitative analysis indicated high rates of cognitive dysfunction among people on MOUD and support for the integration of certain specific accommodation strategies into behavioral HIV prevention interventions during routine drug treatment.

Key informants (drug treatment providers and patients on MOUD) endorsed specific accommodation strategies including: a brief mindfulness meditation at the beginning of sessions, memory aids to help patients remember information, going over group etiquette at the beginning of sessions, using agendas to keep participants on track during sessions, use of simple language and visuals in handouts, brief videos, hands on demonstrations, use of props and games, and use of closures focused on

information reiteration and goal setting. Based on the success of these strategies in accommodating cognitive dysfunction among other patient populations with similar cognitive profiles, these strategies may enhance the efficacy of behavioral interventions by increasing patient's ability to learn, retain, and apply health behavior change information. Ideally, these strategies would be integrated into behavioral intervention sessions, and facilitated by drug treatment providers, to maximize participants' ability to engage in harm reduction behaviors.

Outcomes from this study can aid in informing future research to determine which of the proposed accommodation strategies may be most useful in compensating for (i.e., working around) the cognitive dysfunction often experienced by people on MOUD. Given the novelty of this area of inquiry, we recommend a series of future studies to investigate the impact of integrating these strategies on key outcomes among people on MOUD, including HIV prevention, overdose prevention, and retention in drug treatment. We recommend pilot work to test the feasibility of integrating these accommodation strategies into behavioral intervention sessions and to first determine the extent to which such strategies may boost outcomes. Although it is unclear whether certain individual or combinations of accommodation strategies might be most helpful among people on MOUD—given the diversity of cognitive profiles in this patient population—future research should examine key outcomes stemming from inclusion of a variety of combinations of strategies (e.g., Multiphase Optimization Strategy; MOST) (41). This research design would allow researchers to identify which combination of strategies most enhance patient's ability to process and utilize intervention content.

The present study provided analysis of what accommodation strategies were most supported by key stakeholders in a common type of drug treatment setting. We determined the preliminary acceptability of these accommodation strategies which provides an empirical foundation for further investigation/testing of selected strategies. While the outcomes from this study supported our concept of adapting accommodation strategies from other patient populations for use in a drug treatment setting, the efficacy of these strategies has not yet been examined among persons with MOUD.

## CONCLUSION

The economic and societal costs of OUD have continued to increase in the U.S. in the past 20 years (42). Nearly one

million people have died from an overdose since 1999 (43), and over 100,000 people died from an overdose in the past 12 months (44). Additionally, people who inject drugs accounted for 10% of new HIV infections in 2018 (45). Treatment for OUD utilizes behavioral interventions to limit these negative outcomes among people on MOUD and to reduce a range of health risk behaviors. As researchers continue to investigate methods to improve patient's ability to engage in positive health behavior change, cognitive dysfunction is an often overlooked limitation to behavioral interventions in persons on MOUD. In focus group interviews, both treatment providers and patients on MOUD endorsed various accommodation strategies to compensate for cognitive dysfunction. These accommodation strategies have the potential to increase the efficacy of behavioral interventions to reduce overdose, death, and HIV transmission among persons on MOUD, and are worthy of further investigation in future work.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by University of Connecticut Institutional Review Board. The patients/participants provided their written informed consent to participate in this study.

## AUTHOR CONTRIBUTIONS

Material preparation, data collection, data analysis, and manuscript write-up were performed by CM and MC. CI contributed to the data analysis and final edits on the manuscript. The first draft of the manuscript was written by CM and all authors commented on previous versions of the manuscript. All authors contributed to the study conception and/or design. All authors have read and approved the final manuscript.

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