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Bridging the Macro-micro Divide: A Qualitative Meta-synthesis on the Perspectives and Experiences of Health Care Providers on the Extramedical Use and Diversion of Buprenorphine

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Objectives: Opioid agonist therapy using buprenorphine is one of the most effective treatments for opioid use disorder. However, concerns regarding its extramedical use and diversion, such as adverse patient outcomes and damage to the legitimacy of addiction practice, are persistent. The aim of this review is to synthesize the perspectives and experiences of health care providers around the extramedical use of buprenorphine.

Methods: A qualitative meta-synthesis was conducted based on a systematic search of 8 databases. All primary qualitative and mixed-methods studies relating to the views of health care providers on the extramedical use of buprenorphine were included. A qualitative analysis informed by the constant comparative method was conducted, using NVivo for data management.

Results: Sixteen studies were included in this review. Findings were organized under 2 key themes: (1) Harm-producing versus harm-reducing effects of extramedical buprenorphine use and (2) driving forces of and responses to extramedical buprenorphine use.

Conclusions: The studies included in our review identified a disconnect—health care providers noted that macro, health care system-level challenges drove extramedical use whereas the recommended solutions for prevention and management were primarily aimed at the micro, individual level. This study emphasizes the critical role that health care providers can play, in partnership with patients, in informing appropriate policies and health care system design to optimize the care for people with opioid use disorder.

Key Words: buprenorphine, extramedical use, diversion, opioid use disorder, qualitative meta-synthesis

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Opioid agonist therapy (OAT) is considered the most effective therapy for opioid use disorder (OUD).¹ Internationally, however, there are persistent concerns around extramedical use of buprenorphine and methadone.^{2,3} Extramedical use is defined as “encompass[ing] use that is without a prescription (ie, obtained from outside the formal medical system), or not as directed by a [prescriber], without excluding the possibility that the user may have medically driven reasons for using the medication.”⁴ This definition includes concepts of “diversion”⁵ and “non-medical use.”⁶

There is a growing international body of research, around the extramedical use of opioid agonists.³ Mortality from extramedical methadone use has been highlighted as an important concern.^{7–11} Buprenorphine carries comparatively lower mortality risk in part because of its pharmacological properties as a partial agonist with a ceiling effect.^{12–15} Extramedical buprenorphine use has been characterized as protective, helping people who use opioids (PWUO) control drug use and reduce infectious disease transmission via intravenous drug use.^{16,17} However, extramedical buprenorphine use, too, has been involved in deaths, mainly in polydrug poisonings with alcohol and sedating substances.^{18–21} Perspectives of PWUO have indicated persistent tensions between harm-producing and harm-reducing effects of extramedical buprenorphine use.²²

Because of potential individual and societal effects, extramedical buprenorphine use has been depicted as a constant challenge to the legitimacy of OAT.^{5,12} This challenge is particularly acute for health care providers who are expected to act in the best interest of patients while also considering the broader societal repercussions of treatment decisions.^{23–25}

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We conducted a qualitative meta-synthesis to integrate the perspectives and experiences of providers (ie, physicians, nurses, medical trainees, governmental and nongovernmental treatment providers, counselors and administrative staff) around extramedical buprenorphine use. Given the varying views, we sought to understand providers' perspectives, including the factors driving the extramedical use and the proposed solutions, to inform policies and practices.

METHODS

This study was conducted as part of a larger project synthesizing the qualitative literature around OUD medications. For this review, a comprehensive literature search of MEDLINE, Medline-in-Process, Medline Epubs Ahead of Print, Embase Classic+Embase, and PsycINFO (OvidSP); CINAHL EBSCOHost; and Cochrane (Wiley) and Web of Science (Clarivate Analytics) was conducted on October 8, 2019, and updated on August 28, 2020. The search was conducted using subject headings and keywords (Supplementary File 1, <http://links.lww.com/JAM/A347>) with the assistance of a professional librarian. A hand search was also conducted. Search results were screened using Covidence. After duplicates were removed, reviewers independently screened titles and abstracts in duplicate using predetermined criteria (Table 1) to identify all primary qualitative and mixed-methods studies related to the perspectives and experiences of health care providers on extramedical buprenorphine use. For full-text eligibility, each document was reviewed in duplicate, and reasons for exclusion were tracked in Covidence. Conflicts were discussed collectively until an agreement was reached.

A quality appraisal of the studies was not completed. Supplementary File 2, <http://links.lww.com/JAM/A348>, includes the reasons for this decision, as well as the ENTREQ checklist to enhance transparency in the reporting of qualitative research syntheses.

We used the qualitative meta-synthesis approach,^{26,27} using deductive and inductive analysis informed by the constant comparative method in Charmaz's²⁸ constructivist grounded theory. This approach enabled us to synthesize qualitative data from numerous primary studies to create a new and integrative understanding while maintaining the integrity of the individual studies. Analysis across numerous studies yields conclusions from a larger number of participants and a broader range of di-

mensions than any single study could.^{29,30} We conducted our analysis using NVivo (QRS International, version 12) for data management. We reviewed each study and extracted the relevant text from the results, discussion, and conclusion sections of included studies. We included data only from the qualitative portions of mixed-methods studies. We used line-by-line coding to identify themes and concepts, as well as their underlying meanings and contexts.³¹ During this process, all researchers met to discuss, refine and reach a consensus on the coding schema. Finally, 3 researchers prepared narrative summaries based on the coding schema, and emergent themes were identified through an inductive approach. All researchers worked collaboratively to integrate these summaries into the following results. We compared our themes with those identified in a parallel review of PWUO perspectives on and experiences with extramedical buprenorphine use.²²

RESULTS

From the database and hand search, we retrieved 8609 unique records for screening (Fig. 1). We conducted full-text screening of 480 records of which we included 16 articles in our analysis (Table 2). These studies were published between 2012 and 2020, with 11 of them from the United States, 2 from Sweden, and 1 each from Taiwan, Ukraine, and the United Kingdom. There were 14 distinct author groups. Twelve publications used qualitative methods,^{32,33,35–37,40–46} and 4 publications used mixed methods.^{34,38,39,47}

Themes

We organized our findings into 2 main themes: (1) harm-producing versus harm-reducing effects of extramedical buprenorphine use and (2) driving forces of and responses to extramedical buprenorphine use.

Harm-Producing Versus Harm-Reducing Effects of Extramedical Buprenorphine Use

Similar to the perspectives of PWUO,²² there were persistent tensions in perspectives of extramedical buprenorphine use as producing harm versus reducing harms at multiple levels of health and health care. Uniquely compared with PWUO, providers identified a specific harm of extramedical use as undermining the credibility of, and therefore ultimately the accessibility and effect of, OAT and addictions care.

TABLE 1. Study Inclusion and Exclusion Criteria

Criterion	Inclusion	Exclusion
Population	All health care providers, including trainees, and administrators	Non-health care providers (eg, patients, people who use drugs), special populations (eg, people who are incarcerated), policymakers, or law enforcement
Topic	Perspectives and experiences of extramedical buprenorphine use	Perspectives and experiences of other medications for OUD (eg, methadone, naltrexone) or specific to opioid pain relievers, chronic pain, or pain maintenance
Study type	Full-text peer-reviewed and published research; primary qualitative and empirical studies or the qualitative portion of primary mixed-methods research, using a descriptive or interpretive methodology (eg, grounded theory, ethnography)	Studies labeled as "qualitative" but that did not use a descriptive or interpretive methodology (eg, structured surveys or experimental research); editorials, case reports, commentaries, abstracts, book chapters, theses, and other non-peer-reviewed or published research
Language, timing, context	No criteria for timing	Non-English-language studies

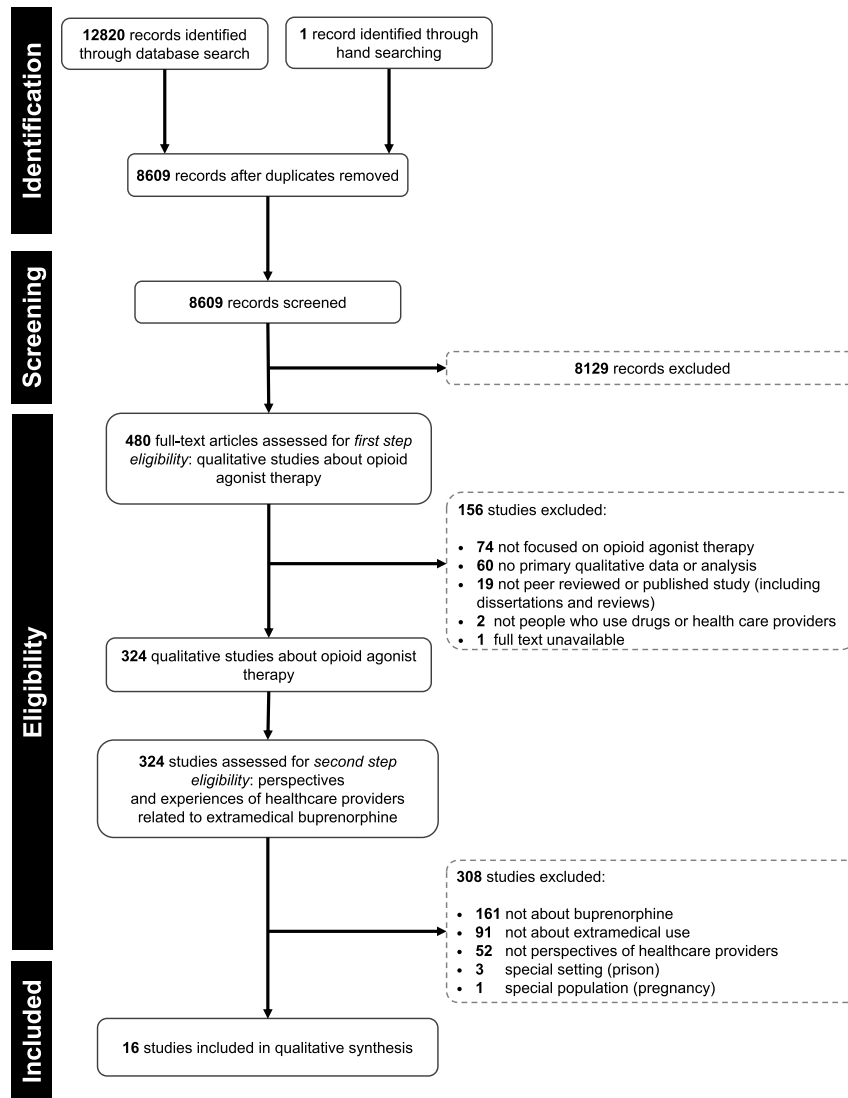


FIGURE 1. PRISMA flow diagram.

Harm-Producing Effects

According to providers in 11 studies, extramedical buprenorphine use facilitated addiction, polydrug use, overdose, and death^{34,36,40,45-47}; contributed to stigmatization of PWUO^{34,35,40,46}; undermined the legitimacy of OAT; and contributed to mistrust of the health care system.^{32,34,35,39,40,43,44,47}

Some providers in Sweden and the United States described extramedical buprenorphine use as a facilitator of addiction.^{36,40,46,47} Extramedical use was seen as “merely substituting one drug for another instead of instilling a new way of life” and then serving as a gateway to heavier drug use.^{34,40(p605)} Buprenorphine was seen as a potent narcotic with attractive features for new drug users. One physician noted that this is because buprenorphine “gives you a greater kick, if taken in small doses, and in particular if the user had not developed any tolerance.”^{40(p430)} Therefore, if diverted to adolescents or those who have not previously used these substances, it may lead to the “recruitment of new opiate/opioid users.”^{40(p429)} Other pro-

viders believed that extramedical buprenorphine use facilitated polysubstance use among PWUO with alcohol, for example.^{40,47} Buprenorphine was also seen as leading to overdose and even death.^{40,45,47} Although several providers in one study emphasized that patient deaths from buprenorphine were rare, they were noted to be typically in the context of extramedical use.⁴⁰

In Taiwan, Sweden, and the US stigmatization of PWUO was noted as another negative effect of extramedical use.^{34,35,40,46} In some regions, the increase in criminalized drug use through the overprescription of controlled drugs was a factor that contributed to the stigmatization of PWUO and, thus, “ignited a war on drugs.”^{34(p600)} This meant that drug use and addiction became a criminal issue instead of a health care issue as individuals who were identified as having addiction could be arrested and incarcerated.³⁴ Providers noted that this association of OAT to law enforcement contributed not only to the stigmatization of PWUO but also to intervention stigma, and therefore stigma toward the larger field of addiction medicine.³⁴

TABLE 2. Included Studies (Location and Setting, Methodology, Objectives, Participants, and Main Findings)

Author(s)	Country (Region); Location and Setting	Methodology or Analytic Approach	Qualitative Objectives	Participants	Main Findings Relating to Extramedical Use of Buprenorphine
Andraka-Christou and Capone ³²	USA; Indiana, Florida, Illinois, Wisconsin; interviews were conducted via telephone or in person; location unspecified	Qualitative thematic analysis; semistructured and in-depth interviews	Compare physician-reported barriers to sublingual buprenorphine and extended-release naltrexone prescribing in US office-based practices and identify potential policies for minimizing these barriers	Twenty physicians	<ul style="list-style-type: none"> Concerns about extramedical use was a barrier to prescribe buprenorphine Providers were concerned about malpractice liability because of adverse outcomes associated with extramedical use of buprenorphine Providers preferred extended-release naltrexone instead of sublingual buprenorphine to avoid extramedical use Improved patient monitoring could prevent extramedical use of buprenorphine Provider beliefs about motives for extramedical use; people illicitly purchased buprenorphine to treat OUD while people sold buprenorphine to gain funds to buy other opioids Concern about extramedical use was the most common barrier in providing treatment among rural physicians Providers used several strategies to minimize extramedical use of buprenorphine (ie, random pill counts, urine drug screens)
Andrilla et al. ³³	USA; representative sample from each US Census Division; interviews were conducted via telephone	Qualitative-directed content analysis; semistructured interviews	Identify strategies for overcoming commonly cited barriers for providing office-based buprenorphine treatment in rural areas	Forty-three rural physicians	<ul style="list-style-type: none"> Challenges associated with claiming insurance coverage, underregulation of buprenorphine, overprescribing driven by financial incentives, limited capacity to care for people with OUD, inconvenient psychotherapy requirement facilitated extramedical use of buprenorphine Extramedical use was considered a temporary solution for inaccessible OAT Extramedical use lead to addiction Including buprenorphine in the national health insurance was considered as a solution to extramedical use Treatment centers where buprenorphine was inappropriately overprescribed were noted to promote extramedical use Extramedical use was considered as a form of self-help Extramedical use of buprenorphine undermined the credibility of OAT, led to a distrust of the health care system and stigmatized PWOD Some pharmacists refused to stock buprenorphine or accept new buprenorphine patients because of the perceived high risk of diversion
Chen ³⁴	Taiwan; location unspecified	Mixed methods (qualitative— not specified); in-depth interviews	Understand the relationships among government, knowledge, and professionals that surround the regulation of Buprenorphine/naloxone in Taiwan	Fifteen clinical psychiatrists, 3 governmental and nongovernmental workers, 1 hospital administrative worker, and 1 product manager in a pharmaceutical company	<ul style="list-style-type: none"> Challenges associated with claiming insurance coverage, underregulation of buprenorphine, overprescribing driven by financial incentives, limited capacity to care for people with OUD, inconvenient psychotherapy requirement facilitated extramedical use of buprenorphine Extramedical use was considered a temporary solution for inaccessible OAT Extramedical use lead to addiction Including buprenorphine in the national health insurance was considered as a solution to extramedical use Treatment centers where buprenorphine was inappropriately overprescribed were noted to promote extramedical use Extramedical use was considered as a form of self-help Extramedical use of buprenorphine undermined the credibility of OAT, led to a distrust of the health care system and stigmatized PWOD Some pharmacists refused to stock buprenorphine or accept new buprenorphine patients because of the perceived high risk of diversion
Cooper et al. ³⁵	USA—rural Appalachian Kentucky counties; private location inside each pharmacy	Qualitative thematic analysis; semistructured interviews	Explore buprenorphine dispensing practices in 12 rural Appalachian Kentucky counties and analyze whether and how they were shaped by features of the rural risk environment	Fourteen pharmacists	<ul style="list-style-type: none"> Challenges associated with claiming insurance coverage, underregulation of buprenorphine, overprescribing driven by financial incentives, limited capacity to care for people with OUD, inconvenient psychotherapy requirement facilitated extramedical use of buprenorphine Extramedical use was considered a temporary solution for inaccessible OAT Extramedical use lead to addiction Including buprenorphine in the national health insurance was considered as a solution to extramedical use Treatment centers where buprenorphine was inappropriately overprescribed were noted to promote extramedical use Extramedical use was considered as a form of self-help Extramedical use of buprenorphine undermined the credibility of OAT, led to a distrust of the health care system and stigmatized PWOD Some pharmacists refused to stock buprenorphine or accept new buprenorphine patients because of the perceived high risk of diversion

Croff et al. ³⁶	USA—Delaware, Maryland, and Pennsylvania; treatment centers	Qualitative—not specified; semistructured interviews	Explains how treatment centers overcame obstacles to the adoption, implementation, and sustainability of pharmacotherapy	Thirty-nine change leaders (administrators and clinicians)	<ul style="list-style-type: none"> Extramedical use of buprenorphine facilitated addiction and jeopardized the legitimacy of OAT centers
Godersky et al. ³⁷	USA—northwestern region; location unspecified	Qualitative thematic analysis; semistructured interviews	Explore buprenorphine adherence and the acceptability of using video directly observed therapy among patients and their providers in an office-based program	Nine Clinical providers (physicians and staff) and 11 patients	<ul style="list-style-type: none"> Diversion of buprenorphine was considered as a challenge to medication adherence Video directly observed therapy was a useful tool to safeguard against diversion Surveillance cameras were used to reduce extramedical use of buprenorphine Fear of diversion affected prescribing practices of buprenorphine
Golovanevskaya et al. ³⁸	Ukraine—Simferopol, Kiev, Dnepropetrovsk, Ivano-Frankovsk, and Sumy; location unspecified	Mixed methods (qualitative—not specified); in-depth interviews	Explores the burgeoning advocacy movement for methadone and buprenorphine treatment by patients, parents, and doctors in Ukraine, and their efforts to remake a system that infantilizes and controls patients into one where patients have a voice in their treatment	Twenty-eight patient advocates and doctors	<ul style="list-style-type: none"> Lack of follow-up mechanisms, pitfalls in payment models were considered drivers of extramedical use of buprenorphine Reluctance to prescribe buprenorphine originated from presumed unintended consequences, including extramedical use Providing ready-to-go buprenorphine in supply kits or a depot form could prevent extramedical use
Im et al. ³⁹	USA; tertiary-care academic hospital	Mixed methods (qualitative-modified grounded theory approach); semistructured interviews	Better understand ED clinicians' attitudes toward the initiation of buprenorphine treatment in the ED	One hundred seventy-four ED clinicians (17 participated in the qualitative study)	<ul style="list-style-type: none"> Extramedical use of buprenorphine caused fatalities, promoted addiction, and damaged the legitimacy of OAT Selling one's medication was considered morally wrong Extramedical buprenorphine was an indication of shortage of access to OAT Used prescription monitoring program to exclude patients from the practice if suspect diversion Some providers discontinued or refused treatment on signs of diversion Concerns about extramedical use of buprenorphine could discourage organizations from implementing OAT and damage the credibility of OAT among the general public
Johnson and Richert ⁴⁰	Sweden—southern region; location unspecified	Qualitative textual analysis; semistructured interviews	Existing ideas and attitudes toward diversion of methadone and buprenorphine among OST staff in Sweden	Twenty-five professionals working in 8 OST programs	
Mendoza et al. ⁴¹	USA—New York City; location unspecified	Qualitative-grounded theory; semistructured interviews	Investigate the effect of state and federal regulations on prescribers of opioid maintenance treatment	Fifty-three public and private sector buprenorphine/Suboxone prescribers	
Molfenter et al. ⁴²	USA—Ohio; location unspecified	Qualitative-summative; qualitative content analysis; semistructured interviews	Examine barriers and facilitators to buprenorphine adoption	Thirty-six addiction treatment center providers	

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TABLE 2. (Continued)

Author(s)	Country (Region); Location and Setting	Methodology or Analytic Approach	Qualitative Objectives	Participants	Main Findings Relating to Extramedical Use of Buprenorphine
Molfenter et al. ⁴³	USA—Ohio; location unspecified	Qualitative content analysis approach; semistructured interviews	Identify systemic barriers to providing buprenorphine treatment in Ohio	A representative sample (18) of Ohio's Alcohol, Drug Abuse and Mental Health Services county boards	<ul style="list-style-type: none"> The public was not favorable to buprenorphine use because of the high rate of extramedical use Diverted medication often originated from cash-based medical practices that did not follow the buprenorphine diversion prevention policies Extramedical use of buprenorphine led to community resistance and mistrust of the health care system Providers were reluctant to prescribe buprenorphine because they did not want to contribute to the community's illegal drug problem Extramedical use of buprenorphine lead to provider uncertainty around dosing of buprenorphine Counselors supported discharging patients when diversion was suspected
Monico et al. ⁴⁴	USA—Baltimore; location unspecified	Qualitative thematic analysis; semistructured interviews	Examine staff perceptions of organizational dynamics associated with the delivery of buprenorphine maintenance within 3 formerly “drug-free” outpatient treatment programs	Fifteen counseling and medical staff	<ul style="list-style-type: none"> Extramedical use of buprenorphine was seen as posing medical risks; overdose, addiction Stigma toward OAT and underregulation of OAT programs facilitated the extramedical use of buprenorphine Mandatory psychotherapy contributed to the inaccessibility of treatment and thus extramedical use
Notley et al. ⁴⁵	England—urban and community; drug treatment services premises	Qualitative- grounded theory approach; semistructured interviews	Assess the experience of supervised and unsupervised consumption of methadone or buprenorphine	Fifty-five Multidisciplinary staff and Twenty-nine patients	<ul style="list-style-type: none"> Stigma toward OAT and underregulation of OAT programs facilitated the extramedical use of buprenorphine Mandatory psychotherapy contributed to the inaccessibility of treatment and thus extramedical use
Richard et al. ⁴⁶	USA—Ohio; participants' places of work	Qualitative- thematic approach; semistructured interviews	Characterize perceptions and attitudes toward MAT and the environmental factors contributing to these views in Appalachian Ohio	Thirty-four stakeholders (12 health care professionals, 12 substance use treatment providers, 7 law enforcement agents and judicial officials, and 3 members of relevant organizations)	<ul style="list-style-type: none"> Extramedical use of buprenorphine promoted addiction Individuals who were left on waiting lists to receive formal treatment or those who were ineligible to receive OAT primarily used extramedical buprenorphine The possibility of widespread buprenorphine diversion to adolescent drug users was usually seen as low Extramedical use of buprenorphine could cause fatalities, especially with polydrug use and undermine the credibility of OAT Harm-reduction measures, including education on the risk of overdose directed at adolescents, were identified as an important intervention to minimize extramedical use
Richert and Johnson ⁴⁷	Sweden—Gothenburg, Malmö, Lund, Norrköping, and Jönköping; interviews took place over the telephone, face to face; location unspecified	Mix methods (qualitative textual analysis); semistructured interviews	Investigate the extent to which illicit use of methadone and buprenorphine occurs among adolescents and young adults in Sweden, and the stage in a user's drug career these substances tend to appear	Eighty-six professionals who, in their line of work, come into contact with young people with varying degrees of drug use	<ul style="list-style-type: none"> Extramedical use of buprenorphine promoted addiction Individuals who were left on waiting lists to receive formal treatment or those who were ineligible to receive OAT primarily used extramedical buprenorphine The possibility of widespread buprenorphine diversion to adolescent drug users was usually seen as low Extramedical use of buprenorphine could cause fatalities, especially with polydrug use and undermine the credibility of OAT Harm-reduction measures, including education on the risk of overdose directed at adolescents, were identified as an important intervention to minimize extramedical use

OAT indicates opioid agonist therapy; OUD, opioid use disorder; PW/OD, people living with opioid use disorder.

In these same countries, extramedical buprenorphine use was also thought to jeopardize the credibility and legitimacy of OAT.^{34,35,40,47} Some studies noted an increase in extramedical use and the distribution of buprenorphine through clinics which were known to overprescribe and overdispense. These clinics were seen as undermining the legitimacy of addiction medicine and creating a negative impression of OAT among the general public, other actors working with addiction and substance dependence, and political decision makers.^{34,40} Some participants noted that these views on extramedical use made it difficult for some treatment facilities to secure operational resources.⁴⁰ Others were concerned about community resistance and mistrust of the health care system because of the prevalence of extramedical buprenorphine use from overprescribing for financial gain.⁴³ A fear of contributing to their community's drug problem^{39,43,44} led them to think that they would "look bad" despite the "stricter guidelines about how [they] deliver [buprenorphine]."^{43(p275)} Other providers were afraid that they would face malpractice liability because of the adverse outcomes associated with extramedical use.³²

Harm-Reducing Effects

Five studies from Sweden, Taiwan, and the United States illustrated providers' harm-reducing views.^{32,34,35,40,47} Extramedical use was seen by some as a form of self-help,^{35,40,47} as a temporizing solution to inaccessible OAT,^{34,40} and as a source of awareness about buprenorphine's therapeutic potential.^{32,40} However, when compared with the perspectives of PWUO, providers made no reference to how extramedical use may foster autonomy for PWUO in contrast to the dependence that may be fostered by OAT programs.

Providers in Sweden and the United States identified PWUO using extramedical buprenorphine to avoid relapse after being discharged from an OAT program. Self-medication was characterized as being "more or less identical to treatment."^{40(p431)} Providers were compassionate toward these individuals stating, that they "sympathize with clients who are buying their buprenorphine on the street to feel OK, instead of running around, committing crimes to buy heroin."^{47(p7)}

In Taiwan and Sweden, providers identified extramedical use as a symptom of inaccessible OAT. They perceived the extramedical use positively because it allowed PWUO to use buprenorphine while waiting to get formal OAT.⁴⁰ Some went so far as to claim that extramedical use was necessary to "prevent the current addiction treatment system from collapsing"^{34(p605)} by providing a temporizing solution to the inaccessibility of formal treatment.^{34,40}

Similar to the experiences reported by PWUO, some providers in Sweden and the United States described that exposure to extramedical buprenorphine encouraged some PWUO to enter OAT.^{32,40}

Driving Forces of and Responses to Extramedical Buprenorphine Use

Providers in 6 studies noted system-level factors that drove extramedical buprenorphine use, including barriers to accessing formal treatment, lack of follow-up mechanisms for those with OUD, and the underregulation of buprenorphine.^{34,35,39,40,46,47}

Nine articles discussed more control and monitoring at the individual patient level to limit the supply of buprenorphine as a solution to extramedical use.^{32,33,35,37–39,41,44,46} Two studies noted changing accessibility to buprenorphine at a system level as a solution to extramedical use.^{34,39}

Driving Forces

Similar to perspectives of PWUO, providers from studies set in Sweden, Taiwan, and the United States thought that extramedical use was a symptom of the limited capacity to care for PWUO.^{34,39,40,47} Some providers in Sweden emphasized that it is the health care system's duty "to ensure that [there is] sufficient access to treatment for [the] patient population [who needs it]."^{40(p432)} Others reported that it was primarily individuals left on waiting lists to receive formal treatment or those who were ineligible to receive OAT that used extramedical buprenorphine.^{40,47}

Providers in Taiwan and the United States noted that government-run hospitals required them to complete a slew of documents (ie, informed consent forms, counseling documents, withdrawal symptom scales, and drug education sheets) to claim insurance coverage for these treatments, which contributed to delays in coverage and treatment.^{34,46} Challenges associated with claiming insurance coverage contributed to financial concerns that led many to seek medications extramedically.^{34,39}

Public clinics in Taiwan and the United States, which required adjunctive "talk therapies" such as counseling, psychoeducation, or intensive psychotherapy treatments, made OAT a lengthy process that contributed to inaccessible OAT and drove extramedical use.^{34,46(p603)} Some emergency physicians in the United States stated that, compared with patients with other conditions, there was a disparity in follow-up care for PWUO.³⁹ For example, although guidelines were in place to schedule follow-up visits within 48 hours of seeing a diabetic patient with hyperglycemia, there were no comparable systems in place to prevent those with OUD from "falling through the cracks," and thus using buprenorphine extramedically.^{39(p269)}

Poor or undersurveillance of buprenorphine use and the prevalence of treatment centers where buprenorphine was inappropriately prescribed or dispensed were also noted to drive extramedical use.^{34,35,46} In some countries, buprenorphine was lower on the national drug schedule compared with other opioids, meaning that it was subject to less stringent surveillance (eg, in Taiwan, heroin and morphine were listed as schedule 1 drug, whereas buprenorphine was listed as a schedule 3 drug).^{34,35} In one study conducted in the rural counties of Appalachian Ohio (United States), numerous clinics were noted to have physicians who prescribed buprenorphine primarily for financial gain.⁴⁶ Some participants described this environment of high prescribing as contributing to an oversupply of buprenorphine in the community and facilitating its "distrib[ution], diver[sion], and abuse."^{46(pp3–4)}

Three studies identified stigma as a driver of extramedical use.^{34,41,46} Providers noted that members of the local Narcotic Anonymous chapters who were on OAT felt stigmatized attending meetings as they were considered "not clean" until they were not on any form of opioid treatment.^{46(p3)} This kind of stigma influenced many individuals to use buprenorphine in secretive and illegal ways.

Responses

Unlike PWUO, who have either not provided or not been asked about solutions to extramedical use,²² we identified several levels of responses and solutions offered by providers. Although most of the driving factors for extramedical use described above were at the systems level, most of the proposed solutions by providers were at the individual level in the form of prescribing changes and monitoring.^{32,33,35,37,39,44,46} Providers in only 2 studies identified system-level changes around buprenorphine accessibility as possible solutions to extramedical use.^{34,39}

As one response, emergency physicians in one US study were reluctant to initiate treatment with buprenorphine because of fears of adverse outcomes, despite their understanding of the evidence for therapeutic efficacy.³⁹ In another study, US general physicians noted this reluctance as originating from presumed unintended consequences of this drug, including extramedical use and accidental overdoses.³² Others preferred prescribing extended-release naltrexone instead of sublingual buprenorphine in an attempt to altogether avoid the possibility of extramedical buprenorphine use.³² Some pharmacists even refused to stock buprenorphine or accept new buprenorphine patients because of the perceived high risk of extramedical use.³⁵ The risk of extramedical use was also seen to contribute to physician uncertainty around dosing.^{37,44} Providers were unsure whether all of the medication prescribed to a specific person was going to that person or someone else.³⁷ Thus, some physicians were uncomfortable with prescribing above a threshold of 20 mg.⁴⁴ In another study, providers could elect to discharge patients from OAT programs when extramedical use was suspected.⁴⁴

Some providers noted close and regular monitoring of patients as a further solution to prevent extramedical use. Monitoring methods included integrating patient electronic health records to check past prescriptions and previous interactions with the health care system,³⁹ conducting frequent urine drug tests,^{32,33} doing regular pill counts,³³ using state prescription drug monitoring programs,³³ developing relationships with local pharmacies to identify those suspected to be using buprenorphine extramedically,³³ checking local police blotters, investigating allegations from community members,³³ and requiring patients to bring their medication and associated wrappers to their appointments to verify the serial numbers.³³ Video directly observed therapy and in-clinic surveillance cameras were also proposed as tools to monitor adherence.^{37,38} Others suggested the use of prescription monitoring programs to help differentiate “legitimate” patients from “deviant” patients and possibly excluding the latter from their practice if they were suspected to be using extramedically.⁴¹ However, a lack of time to carry out these methods of monitoring was noted as an implementation barrier.³²

The importance of ensuring follow-up mechanisms for PWUO was cited by emergency department clinicians as a means of reducing extramedical use.³⁹ They suggested that dedicated staff help patients navigate the health care system and provide ready-to-go buprenorphine supply kits stocked for 3 to 7 days of oral medications or depot formulations to ensure that patients had the necessary supply until follow-up.

Providers in Taiwan suggested changing health policy to incorporate addictions treatment into insured care, particularly

by including buprenorphine in their national health insurance.³⁴ By doing so, one study noted that buprenorphine could be less affected by the market that is so closely tied to the complex interaction between pharmaceutical companies, physicians, health care institutions, and PWUO. The study also noted that the national health insurance database would register every use of buprenorphine, which could help optimize future treatment. This change could subsequently allow PWUO, regardless of their stigmatized status, to be eligible for health services and reduce the incentives for extramedical use.³⁴

DISCUSSION

In many ways, the perspectives and experiences of providers align with the findings of our parallel meta-synthesis of the perspectives and experiences of PWUO,²² particularly highlighting the ongoing tensions between harm-producing and harm-reducing effects of extramedical buprenorphine use. In terms of drivers of extramedical use, PWUO described lack of OAT clinics close to homes or workplaces, rigid enrollment criteria, long waitlists, inadequate insurance coverage. Providers, however, stated both insufficient accessibility and insufficient regulation drove extramedical buprenorphine use. More control measures to limit the supply of buprenorphine were the most commonly provided solutions. Many of these strategies, including drug testing, pill counts, and prescription drug monitoring programs, have also been recommended in previous studies.^{48,49} Providers in this synthesis also identified that they changed their prescribing practices, such as reducing prescribed doses, to minimize the risk of extramedical use. Such practices contribute to the barriers that PWUO already face in accessing treatment, and may perversely drive further extramedical use.²²

This suggests a key disconnect in provider views: they saw that macro, health care system-level challenges primarily drove extramedical use, but their recommended solutions were primarily at the micro, individual patient level. The macro-micro disconnect in health care governance may help to explain this phenomenon.⁵⁰ Macrolevel policy framing and coordination efforts, which take place through administrative top-down decision making, resource allocation, planning, and implementation, are frequently disconnected from microlevel mechanisms aimed at improving provider-patient interactions.⁵⁰⁻⁵² Although macrolevel governance is supposed to improve the quality of care, cost reduction and operational efficiency are driving priorities.^{50,53} Assessments of nationwide trends in OAT need and capacity indicate that such priorities have resulted in significant gaps in access to buprenorphine.^{54,55} Despite this lack of health infrastructure, providers are expected to act in the best interests of their patients while fulfilling the demands of various parties and conforming to various guidelines, best practices, and regulations. To add to this challenge, they must additionally consider the broader social implications of extramedical use.

This macro-micro divide is further evidenced in the relationship between stigma and extramedical buprenorphine use. Stigma operates in many contexts including health care system, workplace, media, and criminal justice system.⁵⁶ Although stigma is often discussed in terms of individual attitudes that can be addressed through individual-focused interventions such as health care provider education,⁵⁷ stigma has long been

conceptualized as a system-level phenomenon linked to structural power dynamics in society.⁵⁸ Some studies have traced opioid-related stigma to structural roots such as the criminalization of drug use^{59–61} and lack of addictions education.⁵⁶ Some literature highlights fostering autonomy in stigmatized individuals as an important solution.⁵⁶ The individual-level monitoring and control measures that are meant to reduce or prevent extramedical use have been extensively identified as manifestations of structural iatrogenesis that perpetuate stigma.⁶² That health care providers have identified some of these connections further reinforces the need for coordinating macro- and microlevel interventions to address extramedical buprenorphine use.

Treatment expansion (ie, offering universal access to treatment, increasing the availability of extended-release buprenorphine), creating mechanisms for warm hand-offs of patients from emergency rooms to primary care clinics, and integrating OUD care services with mainstream health care are some of the macrolevel interventions to address extramedical use of buprenorphine. However, monitoring buprenorphine use is also relevant as underregulation can facilitate extramedical use. A challenge lies in achieving a balance between reasonable restrictions and adequate access to buprenorphine, which many others have grappled with it.^{63,64} To achieve this balance, this review emphasizes the need of integrating macro-micro governance in OUD care and the critical role of providers together with PWUO in empowering macrolevel governance—for which are a number of relevant examples in this therapeutic area.^{65–67}

Strengths and Limitations

To our knowledge, this is the first systematic review in the global qualitative literature that focuses on the extramedical use of buprenorphine from the perspective of health care providers. This complements and reinforces the findings from related work focusing on the perspectives and experiences of PWUO.²² An important limitation of this synthesis was that the perspectives and experiences of providers working with specialized populations, such as individuals who are pregnant or incarcerated were not included as these unique contexts require a more specific analysis that cannot be established in a general review. We were also limited by the data to make in-depth comparisons between different types of providers, settings, and populations served. Notably, there was minimal literature relating to the perspectives and experiences of other unique and relevant stakeholders, such as administrators. Additionally, many providers in the study were primarily from high-income countries, suggesting future studies should focus on the perspectives of administrators and of providers in low- and middle-income countries.

CONCLUSIONS

Ultimately, providers, alongside PWUO, need to be effectively integrated at all levels of the health care system and play requisite roles in the design, implementation, and operation of the health care system to address extramedical buprenorphine use. A top-down approach to health care delivery, without integration of the experiences of frontline providers, may be fraught with challenges and perverse effects. Incorporating the views and perceptions of health care providers, together with those of PWUO, in health system development can help anticipate

the barriers, provide solutions to mitigate them, and successfully facilitate the implementation of treatment.

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REFERENCES

- Jin H, Marshall BDL, Degenhardt L, et al. Global opioid agonist treatment: a review of clinical practices by country. *Addiction*. 2020;115(12):2243–2254.
- Parida S, Carroll KM, Petrakis IL, et al. Buprenorphine treatment for opioid use disorder: recent progress. *Expert Rev Clin Pharmacol*. 2019;12(8):791–803.
- Johnson B, Richert T. Non-prescribed use of methadone and buprenorphine prior to opioid substitution treatment: lifetime prevalence, motives, and drug sources among people with opioid dependence in five Swedish cities. *Harm Reduct J*. 2019;16(1):31. doi:10.1186/s12954-019-0301-y.
- Larance B, Degenhardt L, Lintzeris N, et al. Definitions related to the use of pharmaceutical opioids: extramedical use, diversion, non-adherence and aberrant medication-related behaviours: opioid treatment: defining patient practices. *Drug Alcohol Rev*. 2011;30(3):236–245.
- Bell J. The global diversion of pharmaceutical drugs: opiate treatment and the diversion of pharmaceutical opiates: a clinician's perspective. *Addiction*. 2010;105(9):1531–1537.
- World Health Organization. Lexicon of alcohol and drug terms. Published online 1994. https://www.who.int/substance_abuse/terminology/who_lexicon/en/
- Bernard JP, Havnes I, Slørdal L, et al. Methadone-related deaths in Norway. *Forensic Sci Int*. 2013;224(1–3):111–116.
- Ledberg A. Mortality related to methadone maintenance treatment in Stockholm, Sweden, during 2006–2013. *J Subst Abuse Treat*. 2017;74:35–41.
- Fugelstad A, Stenbacka M, Leifman A, et al. Methadone maintenance treatment: the balance between life-saving treatment and fatal poisonings. *Addiction*. 2007;102(3):406–412.
- Morgan O, Griffiths C, Hickman M. Association between availability of heroin and methadone and fatal poisoning in England and Wales 1993–2004. *Int J Epidemiol*. 2006;35(6):1579–1585.
- Madden ME, Shapiro SL. The methadone epidemic: methadone-related deaths on the rise in Vermont. *Am J Forensic Med Pathol*. 2011;32(2):131–135.
- Campbell ND. From 'magic bullets' to medical maintenance. In: Fraser S, Moore D, eds. *The Drug Effect*. Cambridge University Press; 2011:122–136.
- Walsh SL, Preston KL, Stitzer ML, et al. Clinical pharmacology of buprenorphine: ceiling effects at high doses. *Clin Pharmacol Ther*. 1994;55(5):569–580.
- Campbell ND, Lovell AM. The history of the development of buprenorphine as an addiction therapeutic. *Ann N Y Acad Sci*. 2012;1248(1):124–139.
- Blazes CK, Morrow JD. Reconsidering the usefulness of adding naloxone to buprenorphine. *Front Psych*. 2020;11:549272. doi:10.3389/fpsy.2020.549272.
- Yokell MA, Zaller ND, Green TC, et al. Buprenorphine and buprenorphine/naloxone diversion, misuse, and illicit use: an international review. *Curr Drug Abuse Rev*. 2011;4(1):28–41.
- Bridge T. Safety and health policy considerations related to the use of buprenorphine/naloxone as an office-based treatment for opiate dependence. *Drug Alcohol Depend*. 2003;70(2):S79–S85.
- Wikner BN, Öhman I, Seldén T, et al. Opioid-related mortality and filled prescriptions for buprenorphine and methadone: buprenorphine and methadone mortality. *Drug Alcohol Rev*. 2014;33(5):491–498.
- Auriacombe M, Fatséas M, Dubernet J, et al. French field experience with buprenorphine. *Am J Addict*. 2004;13(s1):S17–S28.
- Seldén T, Ahlner J, Druid H, et al. Toxicological and pathological findings in a series of buprenorphine related deaths. Possible risk factors for fatal outcome. *Forensic Sci Int*. 2012;220(1–3):284–290.
- Megarbane B, Hreiche R, Pirnay S, et al. Does high-dose buprenorphine cause respiratory depression?: possible mechanisms and therapeutic consequences. *Toxicol Rev*. 2006;25(2):79–85.

22. Sud A, Salamanca-Buentello F, Buchman DZ, et al. Beyond harm-producing versus harm-reducing: a qualitative meta-synthesis of people who use drugs' perspectives of and experiences with the extramedical use and diversion of buprenorphine. *J Subst Abuse Treat.* 2021;135:108651. doi:10.1016/j.jsat.2021.108651.
23. McCarty D, Rieckmann T, Green C, et al. Training rural practitioners to use buprenorphine. *J Subst Abuse Treat.* 2004;26(3):203–208.
24. Rieckmann T, Daley M, Fuller BE, et al. Client and counselor attitudes toward the use of medications for treatment of opioid dependence. *J Subst Abuse Treat.* 2007;32(2):207–215.
25. Wallack SS, Thomas CP, Martin TC, et al. Substance abuse treatment organizations as mediators of social policy: slowing the adoption of a congressionally approved medication. *J Behav Health Serv Res.* 2010;37(1):64–78.
26. Sandelowski M, Barroso J. Creating metasummaries of qualitative findings. *Nurs Res.* 2003;52(4):226–233.
27. Sandelowski M, Barroso J. Toward a metasynthesis of qualitative findings on motherhood in HIV-positive women. *Res Nurs Health.* 2003;26(2):153–170.
28. Charmaz K. *Constructing Grounded Theory.* 2nd ed. SAGE Publications Ltd, 2014.
29. Harden A. Applying systematic review methods to studies of people's views: an example from public health research. *J Epidemiol Community Health.* 2004;58(9):794–800.
30. Mays N, Pope C, Popay J. Systematically reviewing qualitative and quantitative evidence to inform management and policy-making in the health field. *J Health Serv Res Policy.* 2005;10(1_suppl):6–20.
31. Saldaña J. *The Coding Manual for Qualitative Researchers.* SAGE Publications Ltd., 2015.
32. Andraka-Christou B, Capone MJ. A qualitative study comparing physician-reported barriers to treating addiction using buprenorphine and extended-release naltrexone in U.S. office-based practices. *Int J Drug Policy.* 2018; 54:9–17.
33. Andrilla CHA, Moore TE, Patterson DG. Overcoming barriers to prescribing buprenorphine for the treatment of opioid use disorder: recommendations from rural physicians: rural physicians' buprenorphine recommendations. *J Rural Health.* 2019;35(1):113–121.
34. Chen J. Therapy without a prescription: buprenorphine/naloxone diversion and the therapeutic assemblage in Taiwan. *Sociol Health Illn.* 2020;42(3): 596–609.
35. Cooper HL, Cloud DH, Freeman PR, et al. Buprenorphine dispensing in an epicenter of the U.S. opioid epidemic: a case study of the rural risk environment in Appalachian Kentucky. *Int J Drug Policy.* 2020;85:102701. doi:10.1016/j.drugpo.2020.102701.
36. Croff R, Hoffman K, Alanis-Hirsch K, et al. Overcoming barriers to adopting and implementing pharmacotherapy: the medication research partnership. *J Behav Health Serv Res.* 2019;46(2):330–339.
37. Godersky ME, Saxon AJ, Merrill JO, et al. Provider and patient perspectives on barriers to buprenorphine adherence and the acceptability of video directly observed therapy to enhance adherence. *Addict Sci Clin Pract.* 2019;14(1):11.
38. Golovanevskaya M, Vlasenko L, Saucier R. In control?: Ukrainian opiate substitution treatment patients strive for a voice in their treatment. *Subst Use Misuse.* 2012;47(5):511–521.
39. Im D, Chary A, Condella A, et al. Emergency department clinicians' attitudes toward opioid use disorder and emergency department-initiated buprenorphine treatment: a mixed-methods study. *West J Emerg Med.* 2020;21(2):261–271.
40. Johnson B, Richert T. Diversion of methadone and buprenorphine from opioid substitution treatment: a staff perspective. *J Psychoactive Drugs.* 2014; 46(5):427–435.
41. Mendoza S, Rivera-Cabrero AS, Hansen H. Shifting blame: buprenorphine prescribers, addiction treatment, and prescription monitoring in middle-class America. *Transcult Psychiatry.* 2016;53(4):465–487.
42. Molfenter T, Sherbeck C, Zehner M, et al. Implementing buprenorphine in addiction treatment: payer and provider perspectives in Ohio. *Subst Abuse Treat Prev Policy.* 2015;10(1):13.
43. Molfenter T, Fitzgerald M, Jacobson N, et al. Barriers to buprenorphine expansion in Ohio: a time-elapsed qualitative study. *J Psychoactive Drugs.* 2019;51(3):272–279.
44. Monico L, Schwartz RP, Gryczynski J, et al. Two models of integrating buprenorphine treatment and medical staff within formerly “drug-free” outpatient programs. *J Psychoactive Drugs.* 2016;48(2):101–108.
45. Notley C, Holland R, Maskrey V, et al. Regaining control: the patient experience of supervised compared with unsupervised consumption in opiate substitution treatment: patient experience of supervised consumption. *Drug Alcohol Rev.* 2014;33(1):64–70.
46. Richard EL, Schalkoff CA, Piscalko HM, et al. “You are not clean until you're not on anything”: perceptions of medication-assisted treatment in rural Appalachia. *Int J Drug Policy.* 2020;85:102704. doi:10.1016/j.drugpo.2020.102704.
47. Richert T, Johnson B. Illicit use of methadone and buprenorphine among adolescents and young adults in Sweden. *Harm Reduct J.* 2013;10(1):27. doi:10.1186/1477-7517-10-27.
48. Yang A, Arfken CL, Johanson CE. Steps physicians report taking to reduce diversion of buprenorphine: steps to reduce diversion. *Am J Addict.* 2013; 22(3):184–187.
49. Lin L, Lofwall MR, Walsh SL, et al. Perceptions and practices addressing diversion among US buprenorphine prescribers. *Drug Alcohol Depend.* 2018;186:147–153.
50. Bodolica V, Spraggon M, Tofan G. A structuration framework for bridging the macro-micro divide in health-care governance. *Health Expect.* 2016; 19(4):790–804.
51. Bodolica V, Spraggon M. Clinical governance infrastructures and relational mechanisms of control in healthcare organizations. *J Health Manag.* 2014; 16(2):183–198.
52. Willem A, Gemmel P. Do governance choices matter in health care networks?: an exploratory configuration study of health care networks. *BMC Health Serv Res.* 2013;13(1):229.
53. Walsh K. Clinical governance: costs and benefits. *Int J Health Policy Manag.* 2014;2(3):149.
54. Jones CM, Campopiano M, Baldwin G, et al. National and state treatment need and capacity for opioid agonist medication-assisted treatment. *Am J Public Health.* 2015;105(8):e55–e63.
55. Saloner B, Karthikeyan S. Changes in substance abuse treatment use among individuals with opioid use disorders in the United States, 2004–2013. *JAMA.* 2015;314(14):1515–1517.
56. Fraser S, Pienaar K, Dilkes-Frayne E, et al. Addiction stigma and the biopolitics of liberal modernity: a qualitative analysis. *Int J Drug Policy.* 2017;44:192–201.
57. Nyblade L, Stockton MA, Giger K, et al. Stigma in health facilities: why it matters and how we can change it. *BMC Med.* 2019;17(1):25. doi:10.1186/s12916-019-1256-2.
58. Link BG, Phelan JC. Conceptualizing Stigma. *Annu Rev Sociol.* 2001;27(1): 363–385.
59. Buchman DZ, Leece P, Orkin A. The epidemic as stigma: the bioethics of opioids. *J Law Med Ethics.* 2017;45(4):607–620.
60. McCradden MD, Vasileva D, Orchanian-Cheff A, et al. Ambiguous identities of drugs and people: a scoping review of opioid-related stigma. *Int J Drug Policy.* 2019;74:205–215.
61. Tomar N, Thormicroft G. Principle of gradient rationality: revisiting stigma and conceptualizing its guiding mechanism. *Soc Sci Med.* 2020;245:112716.
62. Stonington S, Coffa D. Structural iatrogenesis—a 43-year-old man with “opioid misuse.”. *N Engl J Med.* 2019;380(8):701–704.
63. Li X, Shorter D, Kosten TR. Buprenorphine prescribing: to expand or not to expand. *J Psychiatr Pract.* 2016;22(3):183–192.
64. Doernberg M, Krawczyk N, Agus D, et al. Demystifying buprenorphine misuse: has fear of diversion gotten in the way of addressing the opioid crisis? *Subst Abuse.* 2019;40(2):148–153.
65. Sorrell TR, Weber M, Alvarez A, et al. From policy to practice: pilot program increases access to medication for opioid use disorder in rural Colorado. *J Subst Abuse Treat.* 2020;114:108027.
66. American Medical Association, Manatt Health, Colorado Medical Society. *Spotlight on Colorado: Best Practices and Next Steps in the Opioid Epidemic;* 2019. <https://www.manatt.com/getattachment/69aeb8bb-1c38-41ac-ba45-f64774783d3b/attachment.aspx>
67. Colorado Health Institute, Colorado Consortium for Prescription Drug Abuse Prevention. Colorado Opioid Crisis Response Blueprint: A Guide for Opioid Settlement Investments; 2020. https://www.coloradohealthinstitute.org/sites/default/files/file_attachments/Opioid%20Response%20Blueprint%2023-24-2020.pdf