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## Prescription Drug Abuse: From Epidemiology to Public Policy

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### Abstract

Prescription drug abuse has reached an epidemic level in the United States. The prevalence of prescription drug abuse escalated rapidly beginning in the late 1990s, requiring a significant increase in research to better understand the nature and treatment of this problem. Since this time, a research literature has begun to develop and has provided important information about how prescription drug abuse is similar to, and different from the abuse of other substances. This introduction to a special issue of the *Journal of Substance Abuse Treatment* on prescription drug abuse provides an overview of the current status of the research literature in this area. The papers in this special issue include a sampling of the latest research on the epidemiology, clinical correlates, treatment, and public policy considerations of prescription drug abuse. Although much has been learned about prescription drug abuse in recent years, this research remains in early stages, particularly with respect to understanding effective treatments for this population. Future research priorities include studies on the interaction of prescription drugs with other licit and illicit substances, the impact of prescription drug abuse across the lifespan, the optimal treatment for prescription drug abuse and co-occurring conditions, and effective public policy initiatives for reducing prescription drug abuse.

### Keywords

prescription drug abuse; nonmedical drug use; prescription opioids; epidemiology; treatment

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## 1. Introduction

Markers of public health impact ranging from incidence to mortality indicate that the abuse of prescription drugs has reached an epidemic level. The National Survey on Drug Use and Health (NSDUH) estimated that more than 16.7 million people age 12 and older in the United States abused prescription drugs in 2012, with approximately 2.1 million people meeting criteria for a diagnosis of a substance use disorder related to prescription drugs (Substance Abuse and Mental Health Services Administration, 2013a, 2013b). This reflects an increase of 250% in prescription drug abuse over the previous 20 years (SAMHSA, 1998, 2013a). Treatment admissions for substance use disorder services for prescription opioids alone increased more than 5-fold from 2000-2010 in the U.S. (SAMHSA Center for Behavioral Health Statistics and Quality, 2014), with some regions experiencing more than a 770% increase in admissions (SAMHSA Center for Behavioral Health Statistics and Quality, 2013). During that time, accidental prescription opioid overdoses increased almost 400%, surpassing accidental overdose deaths from heroin, cocaine, and other stimulants combined (Calcaterra, Glanz, & Binswanger, 2013).

The rapid escalation of this problem initially far outpaced clinical research on its nature and on interventions to prevent and treat prescription drug use disorders. However, in recent years, a research base on prescription drug abuse has begun to take shape. The aim of this special issue of the *Journal of Substance Abuse Treatment* is to highlight a sampling of the latest research on prescription drug abuse. The articles in this issue address a range of topics, highlighting the state of the science from perspectives such as epidemiology, clinical correlates, treatment outcomes, and public policy considerations. For the purpose of this special issue we use the term *prescription drug abuse* to encompass a range of potential patterns of nonmedical use of prescription drugs, including using a prescribed medication at a higher dose or greater frequency than instructed by the prescriber, or using without a legitimate prescription (see Compton & Volkow, 2006).

## 2. Epidemiology of Prescription Drug Abuse

The prevalence of prescription drug abuse increased dramatically and rapidly in the U.S. in the late 1990s through the mid-2000s, with some plateau since that time at approximately 2.3-2.8 million initiators of prescription drug abuse annually (SAMHSA, 2013b). In 2012, prescription drugs were second only to marijuana in prevalence of both illicit use and drug use disorders (SAMHSA, 2013b). Opioids are the most commonly abused type of prescription drug and appear to be the largest contributor to these increases. The number of adults abusing prescription opioids increased from 4.9 million in 1992 to almost 12.5 million in 2012 (SAMHSA, 1998, 2013a) and the rate of treatment receipt for prescription opioid use disorders now is second only to alcohol (SAMHSA, 2013b). After opioids, the most commonly abused prescription drugs in the US are tranquilizers (6 million people in 2012) and stimulants (3.3 million) (SAMHSA, 2013a). Although much of the attention in both the research literature and the media has focused on the abuse of prescription opioids and stimulants, this problem encompasses the range of psychotropic medications that provide potentially reinforcing effects. For example, Malekshahi et al. (2014) found that 17% of

inpatients sampled at a substance use disorder treatment facility had abused antipsychotic medications, such as quetiapine.

Variability in definitions of prescription drug abuse and in the availability of specific types of prescription drugs limits comparison across countries. Although the U.S. appears to have the highest prevalence of prescription drug abuse internationally, significant rates of prescription opioid abuse has been reported in countries, such as Canada, New Zealand, and India, among others (Dengenhardt et al., 2008). For example, a large population-based study in Canada suggested that almost 5% of the population abused opioids in the previous year (Shield, Jones, Rehm, & Fischer, 2013). The prevalence of prescription drug abuse appears to vary based on the availability of medications with abuse potential, including the prevalence of the legal availability of these medications, proximity to areas producing these medications, and availability of alternative substance abuse (Dengenhardt et al., 2008).

In the US, increasing rates of prescription drug abuse have paralleled increases in the prescription of these medications. In 2012, there were as many opioid prescriptions written (259 million) as there were adults in the US (Paulozzi, Mack, & Hockenberry, 2014). Prescriptions for opioids have increased significantly in adult (Mazer-Amirshahi, Mullins, Rasooly, van den Anker, & Pines, 2014) and pediatric emergency departments (Mazer-Amirshahi, Mullins, Rasooly, van den Anker, & Pines, 2014), and ambulatory settings (Olfson, Wang, Iza, Crystal, & Blanco, 2013). A study of trends in prescription medication use and abuse among college students found evidence for significant *increases* in prescriptions for stimulants and *decreases* in opioid prescriptions among college students from 2003-2013; during that time, rates of stimulant abuse increased, while rates of opioid abuse decreased (McCabe, West, Teter, & Boyd, 2014).

Large epidemiologic studies suggest that Native Americans and Caucasians have the highest rates of prescription drug abuse (Huang et al., 2006; SAMHSA, 2013a). Individuals with prescription drug abuse are younger and less likely than those without this problem to be married, and prescription drug use disorders co-occur at very high rates with other substance use disorders and psychiatric illnesses (Huang et al., 2006). Although data from the NSDUH suggest that there are similar rates of prescription drug abuse between those living in rural relative to urban settings (Wang, Becker, & Fiellin, 2013), prescription drug abuse appears to be more prevalent in rural than urban areas among adolescents (Havens, Young, & Havens, 2011).

Several studies have identified gender differences in prescription drug abuse. For opioids, the higher prevalence in men observed across many substances of abuse appears to be smaller, with some studies reporting slightly higher prevalence among men, and others suggesting a similar prevalence in men and women (Back, Payne, Simpson, & Brady, 2010; Green, Grimes Serrano, Licari, Budman, & Butler, 2009; Parsells Kelly et al., 2008; Tetrault et al., 2008). This may reflect the fact that women are more likely to be prescribed an opioid than men (Parsells Kelly et al., 2008), or may reflect other factors that are unique to prescription drugs. For example, abusing prescription medication may be perceived as “safer” than abuse of illicit drugs (Fleary, Heffer, & McKyer, 2013; Mateu-Gelabert, Guarino, Jessell, & Teper, 2014). In fact, women are more likely than men to abuse

prescription opioids in a manner more consistent with their prescribed use, such as first receiving opioids via a legitimate prescription and using only via the intended route of administration (oral or sublingual) (Back et al., 2010; McHugh et al., 2013).

## 2.1. Impact Across the Lifespan

Much like for other drugs of abuse, the primary developmental risk period for the onset of prescription drug abuse is during adolescence (McCabe, West, Morales, Cranford, & Boyd, 2007). Data from the 2013 Monitoring the Future Study—an annual survey of 8th, 10th, and 12th graders in the U.S.—reported alarmingly high rates of nonmedical use of prescription drugs, particularly stimulant and opioid medications. Opioids were the most commonly abused medications, with almost 13% of 12th graders reporting lifetime prescription opioid abuse (McCabe, West, Teter, & Boyd, 2012). Abuse of prescription stimulants was as common as lifetime medically approved use (9.5%; McCabe & West, 2013), and abuse of benzodiazepines was also high (7.5%; McCabe & West, 2014). As with adults, Caucasians and Native Americans have higher rates of prescription drug abuse relative to other racial and ethnic groups (McCabe, Cranford, & West, 2008), and gender differences in the prevalence of prescription drug abuse are small (McCabe et al., 2008; SAMHSA, 2013b). Rates of abuse are even higher among college students, with data from the Monitoring the Future Study suggesting that 23% of college students had a lifetime history of prescription drug abuse (Johnston, O'Malley, Bachman, & Schulenberg, 2007).

Certain risk factors are associated with prescription drug abuse among youth. Youth and adolescents with other substance use disorders are more likely to abuse prescription drugs (McCabe, Boyd, & Teter, 2005; Whiteside et al., 2014). In a study of youth presenting to emergency departments, Whiteside et al. (2014) found that those with prescription drug abuse were more likely to have a number of risk factors, including poor school performance, interpersonal violence, and other substance use. Among adolescent offenders, prescription drug abuse is associated with exposure to violence, co-occurring psychiatric disorders, and delinquent behavior (Drazdowski, Jaggi, Borre, & Kliewer, 2014).

Relatively little research has focused on issues related to the impact of prescription drug abuse across other specific life stages. For example, few studies have examined prescription drug abuse in reproductive age or pregnant women. Martin and colleagues (2014) found that despite a relatively constant rate of admissions of pregnant women to substance use disorder treatment settings from 1992 to 2012, the prevalence of pregnant woman seeking treatment specifically for prescription opioid abuse has increased 14-fold. Prescription drug abuse may be more prevalent among rural pregnant women (Shannon, Havens, & Hays, 2010). Given the importance of treatment for pregnant women to both the health of the mother and of the developing fetus, more research with this subgroup is needed.

It appears that prescription drug abuse is less common in older adults relative to other age groups (Huang et al., 2006). However, the prescription of potentially addictive medications (particularly opioids and benzodiazepines) is highly prevalent in this group (Shannon et al., 2010), highlighting the importance of better understanding the potential abuse of prescription medications among older adults. For example, benzodiazepine dependence

appears to be common—and underrecognized—among adults aged 65 and older (Simoni-Wastila & Yang, 2006; Voyer, Preville, Cohen, Berbiche, & Beland, 2010).

## 2.2. Is Prescription Drug Abuse Different Than Other Types of Drug Abuse?

Prescription drugs can be obtained legally and are almost universally present in households, and thus are different in meaningful ways relative to both access and perceptions of risk than drugs only obtained illegally. Accordingly, there appear to be meaningful differences between prescription and illicit drugs of the same class. For example, cue-induced craving appears to be less robust among those abusing prescription opioids relative to those abusing heroin (McHugh, Park, & Weiss, 2014), and these groups may also have different responses to treatment (see below). Stein et al. (2014) found that prescription opioid- and heroin-dependent individuals report different life concerns, with those dependent upon prescription opioids less concerned about infectious disease, but more concerned about alcohol use relative to heroin users. College students are more likely to abuse stimulants than college-age young adults who are not enrolled in higher education, which is not consistent with other stimulants, such as cocaine (Johnston, O'Malley, Backman, & Schulenberg, 2013).

Nonetheless, there also appear to be a number of similarities between prescription drug abuse and abuse of other drugs. For example, risk factors for the development of substance use disorders also appear to confer risk for prescription drug abuse, such as earlier age of initiation of use and the presence of psychiatric and medical conditions (Katz, El-Gabalawy, Keyes, Martins, & Sareen, 2013; Martins et al., 2012; McCabe et al., 2007). Like other substance use disorders prescription drug abuse is strongly associated with psychiatric severity, violence exposure, and stress in cross-sectional studies (Berenson & Rahman, 2011; Martins, Keyes, Storr, Zhu, & Chilcoat, 2009; McCauley et al., 2009; McCauley et al., 2010).

**2.2.1. Access and Motives for Use**—Prescription drugs that are abused appear to come from a variety of sources, ranging from prescriptions received by a doctor, to diversion from friends and family, to purchase through illicit markets. Adolescents, most commonly reported receiving prescription for free from a friend or relative, although significant proportions of adolescents also used their own prescriptions, purchased drugs from a dealer, or took them from friends or family without asking (SAMHSA, 2013b). A study of adolescents and young adults aged 14-20 presenting to emergency departments found that almost 10% reported abuse of prescription opioids or stimulants, but fewer than 15% of that group had valid prescriptions for these medications (Whiteside et al., 2013).

Studies on motives to abuse prescription drugs have found that, much like for other drugs of abuse, there are a range of reasons for abusing prescription drugs, such as to getting high, regulating pain and negative affect, and improving sleep. Studies in adolescents have found that motives are often but not always aligned with the intended purpose of the drug (e.g., pain relief for opioids, improving sleep for sleep aids; Boyd, McCabe, Cranford, & Young, 2006; McCabe & Cranford, 2012). It appears that those who report multiple motives for use are most likely to also experience greater problems with use (Boyd et al., 2006; McCabe & Cranford, 2012). Moreover, negative motivations in particular (e.g., using prescription drugs

in relation to unpleasant emotions, physical discomfort or conflict with others), are associated with prescription drug use disorders (Kelly, Rendina, Vuolo, Wells, & Parsons, 2014). In adults, data suggest that although the most typical motive for initiating opioid use is pain relief, the primary motive often shifts over time to managing withdrawal and negative affect, to get high, or to sleep (Barth et al., 2013; Weiss et al., 2014).

**2.2.2. Prescription Drug Abuse Subtypes**—In attempting to better understand the degree to which prescription drug abuse may differ from illicit drug abuse, several studies have attempted to determine whether there are meaningful subgroups in this population. Several studies have utilized large epidemiologic surveys to attempt to address this question. An analysis of prescription opioid abuse in the National Epidemiologic Survey on Alcohol and Related Conditions found four subtypes, characterized by those who also used marijuana, those who also abused other prescription drugs, those who also used marijuana and hallucinogens, and polydrug users (Wu, Woody, Yang, & Blazer, 2010). These subgroups were different with respect to a number of sociodemographic variables as well as substance use and psychiatric histories. Similar results emerged from an analysis of prescription stimulant abuse in the NSDUH, with a subgroup at low risk for other substance use, a group that abused other prescription drugs, a group that used alcohol and marijuana, and a polysubstance using group (Chen et al., 2011). A study in adolescents of prescription drug abuse more generally found a subgroup at low risk for any substance use, one with high risk for polysubstance use, one with risk for alcohol/tobacco/marijuana use, and one with risk for alcohol and prescription drug use (Cranford, McCabe, & Boyd, 2013). Meaningful subgroups characterized by fewer risk behaviors and initiating use for the indicated purpose of the medication (e.g., opioids for pain) also have been identified (Nielsen et al., 2011).

Another approach has involved classifying subtypes based on motives for use, such as recreational users, “self-medicators,” and combinations of motives (Kelly et al., 2014; McCabe, Boyd, & Teter, 2009; McCabe & Cranford, 2012). Such studies have suggested that self-medicating groups report fewer problem behaviors, such as non-intended routes of administration, and other substance use. Such subgroup analyses have been relatively consistent in their findings; greater understanding of the implications of these groups on prevention and treatment will be an important direction for future research.

**2.2.3. The Transition from Medical Use to Abuse**—Defining and assessing prescription drug abuse is complicated by unclear boundaries between “appropriate” use of these medications and inappropriate use or abuse. Research on motives for the use of prescription drugs suggests that although motives to feel high and to enhance social experiences are common, this population also uses these medications to manage symptoms of pain, anxiety, sleep disruption, and other conditions that are receiving inadequate treatment or no treatment at all. Patients in substance use disorder treatment settings reporting prescription opioid abuse are more likely to report pain symptoms than heroin users (Brands, Blake, Sproule, Gourlay, & Busto, 2004), and anxiety is more common among those abusing tranquilizers (Chen et al., 2011). Ensuring that this population—and those with substance use disorders in general—are not denied adequate treatment for such conditions is critically important.



Data on the risk of developing prescription drug abuse and prescription drug use disorders from an initial medical prescription are limited. Importantly, studies of rates of prescription drug abuse among those with medical prescriptions provide a poor estimate for risk because they fail to control for the risk of abuse even if the person was not prescribed the medication (including the potentially elevated risk among those with an untreated disorder or condition). For example, results of a meta-analytic review of studies examining the risk for developing stimulant abuse suggested that medication for attention deficit hyperactivity disorder may actually protect against the development of substance use disorders (Faraone & Wilens, 2007). Nonetheless, diversion of medications is common; studies suggested that approximately 1/4 of those with prescribed stimulants will divert their medications at some time (Poulin, 2007; Rabiner et al., 2009; Wilens et al., 2008).

Evaluation of prescription drug abuse may be particularly important among those with psychiatric and medical conditions, who are more likely to be prescribed medications, and may also face a number of negative consequences related to use. For example, Newville and colleagues (2014) found that among HIV-positive individuals receiving antiretroviral treatment, prescription drug abuse was associated with a range of negative outcomes, such as more medication side effects.

Research on the prediction of risk groups for the development of prescription drug abuse among medical users has been mostly cross-sectional. Studies have found that individuals with chronic pain who abuse their medications have higher pain sensitivity, more catastrophic interpretations of pain, greater craving for opioids, and more psychiatric symptoms than those who do not abuse their medications (Edwards et al., 2011; Martel, Wasan, Jamison, & Edwards, 2013; Morasco, Turk, Donovan, & Dobscha, 2013; Wasan et al., 2007; Wasan et al., 2009). Prior history of other substance use disorders appears to predict prescription drug abuse, both among those receiving a prescription and in the general population (Faraone & Wilens, 2007; Sweeney, Sembower, Ertischek, Shiffman, & Schnoll, 2013). Assessment of clusters of risk factors has demonstrated some promise for identifying those at risk of prescription opioid abuse (Butler, Budman, Fernandez, & Jamison, 2004; Holmes et al., 2006).

Another concern, particularly among prescription opioid abusers, is the transition to risky substance use behaviors, such as injection use. Mateu-Gelabert et al. (2014) found that the transition from prescription drug abuse to injection drug use was common among urban young adults, and that a subgroup also reported both drug (e.g., needle sharing) and sexual risk behaviors. Of note, heroin use among those abusing prescription opioids has been increasing (Jones, 2013), and the use of heroin in those dependent upon prescription opioids appears to be associated with higher rates of other substance use disorders (Wu, Woody, Yang, & Blazer, 2011) and poorer treatment outcomes (Weiss et al., 2011).

Although more research is needed in this area, the rates of prescription drug abuse among those with a legitimate prescription for a psychoactive medication highlight the importance of assessing for diversion, abuse, and other aberrant behaviors. Subgroups with high risk for abusing their medications may benefit from targeted intervention to prevent these problems (Jamison et al., 2010).

### 3. Treatment and Public Policy Considerations

Increases in prescription drug abuse and substance use disorders related to prescription drugs have resulted in a substantial increase in the need for treatment for this population. Large-scale surveys such as the NSDUH and the Treatment Episode Data Set estimate increases of between 250–400% in the receipt of treatment for prescription drugs from 2000–2012 (SAMHSA, 2013b; SAMHSA Center for Behavioral Health Statistics and Quality, 2014). Nonetheless, consistent with data on other substance use disorders, the majority of those with prescription drug use disorders do not seek treatment, and the most common type of treatment sought is self-help (e.g., 12-step groups; McCabe et al., 2008). Thus, there is a significant need for research on the optimal treatment of this population, as well as barriers to access.

Studies of treatment for prescription drug use disorders are few, and have focused largely on prescription opioid dependence. The Prescription Opioid Addiction Treatment Study (POATS), the largest treatment study of prescription drug abuse treatment to date, enrolled 653 patients across 10 sites in the U.S. (Weiss et al., 2011). Results indicated that few (<7%) patients responded to brief treatment with buprenorphine-naloxone, consisting of a 2-week stabilization and 2-week taper. Treatment response improved dramatically with extended treatment, including 12 weeks of buprenorphine-naloxone stabilization (49%), but dropped following a second taper to less than 9%. In this study, the addition of drug counseling did not result in enhanced outcomes relative to medication management alone. An 18-month follow-up from this study (Potter et al., 2014) found that the rate of past-month abstinence at this time was comparable to that during buprenorphine-naloxone stabilization during the treatment study (49%), reflecting a substantial improvement over time.

Studies examining the optimal length of buprenorphine tapers in this population have yielded inconsistent results. A randomized trial of various durations of buprenorphine taper followed by treatment with naltrexone found that a 4-week taper was associated with better outcomes and retention than shorter (1 or 2 week) tapers (Sigmon et al., 2013). However, a secondary analysis from a large clinical trial of buprenorphine taper in opioid-dependent individuals found no benefit for a 28-day taper over a 7-day taper (Ling et al., 2009; Nielsen et al., 2013). Identifying the optimal taper duration in this population is an important question for future research.

Other studies of the treatment of opioid dependence have compared treatment responses between those with primary heroin and primary prescription opioid dependence. Individuals with prescription opioid dependence appear to have superior post-buprenorphine taper outcomes relative to those with heroin dependence after a 4 week buprenorphine stabilization (Nielsen, Hillhouse, Thomas, Hasson, & Ling, 2013). Nielsen et al. (Nielsen, Hillhouse, Mooney, Ang, & Ling, 2014) further suggest that those with prescription opioid dependence have better outcomes (as evidenced by negative urine drug screens) and retention than those with heroin dependence in response to treatment with buprenorphine/naloxone and behavioral therapy. Prescription opioid users are also less likely to drop out of treatment (Potter et al., 2013). Although these findings suggest that standard substance use



disorder treatment may also be efficacious—perhaps even to a greater degree than in other populations—research on treatment response in this population is sorely needed.

Studies have begun to identify predictors of outcome in this population. Oser et al. (2014) found that those who lived in a different geographic location from their treatment center (e.g., traveling from a rural area to an urban or suburban county) were more likely to have poor treatment outcomes, such as relapse. Substance use history and other characteristics, in particular heroin use, younger age, prior treatment for opioid dependence, and using opioids via a route of administration other than oral or sublingual, appear to be associated with worse outcomes in this population (Dreifuss et al., 2013; Weiss et al., 2011).

Additional research is needed to inform the field as to whether prescription drug users may have unique treatment needs. For example, although pain was found to be more likely amongst prescription opioid users compared to heroin users (Brands et al., 2004), chronic pain did not predict poorer outcomes for prescription opioid users receiving buprenorphine (Weiss et al., 2011). How to best provide treatment for those with multiple physical and mental health problems in addition to substance use is a key area for future work. Possibly the more important message is that many of the lessons learned from treatment of illicit drug use appear to apply in treatment of prescription drug abuse, particularly in the case of opioid dependence. Prescription opioid users appear to require similar doses of buprenorphine and have similar induction outcomes to heroin users (Nielsen, Hillhouse, Mooney, Fahey, & Ling, 2012), and as noted above, have treatment outcomes that appear to be comparable if not more favorable on many outcome measures. Furthermore, much like for other substances of abuse, the use of urine testing to confirm self-report may be indicated given common rates of underreporting prescription opioid abuse (Hilario et al., 2014).

Communication among clinicians, researchers, policymakers, and other relevant stakeholders will require coordination of efforts to understand this problem and to better coordinate prevention and treatment. McCarty and colleagues (2014) highlight the efforts of the state of Oregon to address the prescription opioid epidemic through collaboration and communication among the relevant groups, and the utilization of a multi-faceted approach to the problem. Although it remains too early to systematically evaluate the effectiveness of such efforts, there are early success in the ability to implement targeted changes (e.g., changes in prescription monitoring systems).

## 5. Summary and Future Directions

Although much has been learned about the nature and treatment of prescription drug abuse in recent years, there are many pressing questions in need of further investigation. Research is needed on the interactions among prescription drugs of abuse and between these drugs and other licit and illicit drugs. Schoenfelder et al. (2014) demonstrated interactions between a prescription stimulant (methylphenidate) and marijuana with respect to heart rate, cognitive performance, and subjective drug effects. Results suggested that the combination of these drugs may have concerning effects, particularly with respect to cardiac health. Research in understudied subgroups, such as older adults and pregnant women, and those with concurrent pain and opioid dependence is needed to better understand the impact of

prescription drug abuse on these groups. Another critical future research direction is further study of optimal treatment approaches, including understanding of longer-term treatment outcomes. All of these research directions will benefit from the improvement of strategies for defining and assessing prescription drug abuse. Although certainly much more research is needed to understand the abuse of prescription opioids and stimulants--particularly given their prevalence--attention to other prescription drugs is also needed.

Prescription drug abuse continues to exert a substantial public health cost, as highlighted by growing rates of overdose deaths and rapidly increasing need for substance use disorder treatment. Addressing this problem will require involvement of a range of stakeholders and intervention at various levels, such as increased prescriber education and prescription monitoring, improvement in access to evidence-based substance use disorder treatment, enhanced understanding of optimal treatment approaches, and adjustments to policy to provide public health level supports (e.g., drug buy-backs). Such interventions must be accompanied by assessment of their impact to maximize the effectiveness and efficiency of efforts to stem the tide of this problem.

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### Highlights

- Prescription drug abuse has reached an epidemic level.
- Research suggests both similarities to and differences from illicit drug abuse.
- Treatment outcomes may be superior compared to illicit drug use disorders.
- Research is needed on the nature and treatment of prescription drug abuse.