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## “It’s Took Over This Region”: Patient Perspectives of Prescription Drug Abuse in Appalachia

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### Abstract

**Background:** Prescription drug abuse is a public health problem in the United States and the region of Appalachia, specifically. Primary care and addiction medicine—as possible points of access for prescription drugs with abuse potential and points of intervention for prescription drug abuse—are among the medical fields at its forefront. Little is known, however, about perceptions of prescription drug abuse across the two patient populations.

**Objectives:** The objective of this qualitative analysis was to explore perceptions of the scale and context of prescription drug abuse among primary care and addiction medicine patients in Appalachia.

**Methods:** As part of a mixed methods study, semi-structured interviews were conducted with twenty patients from primary care and addiction medicine in Central and South Central Appalachia from 2014 to 2015. The interviews were audio-recorded and transcribed verbatim. Thematic analysis was used to identify themes.

**Results:** Three themes were identified: 1) *pervasiveness of prescription drug abuse*, describing perceptions of its high prevalence and negative consequences; 2) *routes and routine practices for prescription drug acquisition and distribution*, describing perceptions of routes of access to prescription drugs and behaviors exhibited to acquire and distribute prescription drugs; and 3)

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Declaration of Interest

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*rationales for prescription drug acquisition and distribution*, describing perceptions of the two underlying reasons for these processes—tolerance/addiction and revenue source.

**Conclusions/Importance:** Perceptions of prescription drug abuse among primary care and addiction medicine patients in Appalachia are multifaceted, especially regarding prescription drug acquisition and distribution. Clinical practice implications for mitigating prescription drug abuse are discussed.

### Keywords

prescription drug abuse; prescription drug misuse; opioid; patient; qualitative

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### Background

In the United States, dramatic increases in the prescribing and dispensing of prescription drugs—opioids in particular—have been paralleled by increases in adverse outcomes during recent decades (Centers for Disease Control and Prevention [CDC], 2011; Kolodny et al., 2015; McHugh, Nielsen, & Weiss, 2015). In 2015, approximately 18.9 million persons 12 years or older misused prescription drugs in the past year, with 2.7 million persons estimated to have a prescription drug use disorder in the past year (Hughes et al., 2016). Prescription drug misuse and abuse have been described as the “fastest-growing drug problem” by the Substance Abuse and Mental Health Services Administration (SAMHSA) (para. 1).

Terminology in prescription drug misuse and abuse research can be complicated, in part because of inconsistency in the operationalization and application of terms (Barrett, Meisner, & Stewart, 2008; Compton & Volkow, 2006). To simplify, and in accordance with past research (McHugh, et al., 2015), prescription drug abuse (PDA) will be used hereafter to denote any nonmedical use, including use without a prescription or for the feeling or experience produced (Center for Behavioral Health Statistics and Quality [CBHSQ], 2015).

Although PDA is a public health concern across the nation, it has profoundly impacted Appalachia. Briefly, Appalachia encompasses 420 counties across 13 states; roughly 42% of the population is characterized as rural, with roughly 83% of the population characterized as “white alone, not Hispanic” and 17% of persons in poverty in 2011-2015 (compared to 20%, 62%, and 16% in the U.S., respectively) (Appalachian Regional Commission, n.d.; Pollard & Jacobsen, 2017, p. 17). These demographic characteristics are noteworthy as they are among the factors potentially associated with adverse prescription drug-related outcomes (e.g., abuse) (CDC, 2017; Kaye et al., 2017; McHugh, et al., 2015; Paulozzi, 2012). Moreover, prescription opioids are prescribed and dispensed at high rates across much of Appalachia. Multiple states affiliated with the region (e.g., Alabama, Kentucky, Tennessee, and West Virginia) were among those with the highest opioid prescribing/dispensing rates in 2012 (Paulozzi, Mack, & Hockenberry, 2014). Likewise, multiple states affiliated with the region (e.g., Kentucky, Ohio, and West Virginia) were among those with the highest age-adjusted drug overdose death rates in 2015 (CDC, 2016).

Primary care (PC)—“provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs,

developing a sustained partnership with patients, and practicing in the context of family and community” (Institute of Medicine, 1996, p. 31)—is critical to the healthcare system and potentially at the forefront of the PDA problem (Bachhuber, Weiner, Mitchell, & Samet, 2016). PC is a possible point of access for prescription drugs with abuse potential. PC specialties (e.g., family practice) have been estimated to prescribe a sizable portion of dispensed opioids (Levy, Paulozzi, Mack, & Jones, 2015). Persons with substance use disorders could not only present in PC (Bonhomme, Shim, Gooden, Tyus, & Rust, 2012; Shapiro, Coffa, & McCance-Katz, 2013), but opioid abuse and dependence could be more common than anticipated among opioid therapy patients (Kaye, et al., 2017). Given the estimated gap between need for and receipt of substance use treatment (Lipari, Park-Lee, & Van Horn, 2016), PC could hold an important role—perhaps “unparalleled opportunities”—in addressing substance abuse (Center for Substance Abuse Treatment [CSAT], 1997a, p. xvii), including opioid abuse and opioid use disorder (Bachhuber, et al., 2016). In rural areas, PC could be particularly important given the potential for extensive barriers and limited access to mental health and substance use treatment (Borders & Booth, 2007; Hancock et al., 2017; Pullen & Oser, 2014; Xierali et al., 2013).

Addiction medicine (AM)—“prevention, evaluation, diagnosis, treatment, and recovery of persons with the disease of addiction, of those with substance-related health conditions, and of people who show unhealthy use of substances” (American Board of Preventive Medicine, n.d., para. 1)—similar to PC, is potentially at the forefront of the PDA problem. AM is now formerly recognized as a medical subspecialty (American Board of Medical Specialties [ABMS], 2016). Such recognition is expected to improve the capacity of the healthcare community to address addiction and access to healthcare among persons in need (ABMS, 2016). Relevant to opioid use disorder, a portion of physicians certified to prescribe buprenorphine have also been found to possess certifications in addiction (Arfken, Johanson, di Menza, & Schuster, 2010). The role of AM in addressing substance abuse, however, may not be entirely separate from the role of PC. For example, if needed, PC providers could refer patients to or receive consultation from addiction specialists (CSAT, 1997b; O’Connor, Sokol, & D’Onofrio, 2014; Shapiro, et al., 2013). Collectively, PC and AM—possible access points for prescription drugs and intervention points for PDA—are compelling medical fields from which to investigate PDA.

A growing body of research has used qualitative methods to explore patient PDA-related perceptions and experiences. Studies involving patients in PC have commonly been limited to areas germane to patient care, such as pain management and opioid therapy (e.g., Frank et al., 2016; Hurstak et al., 2017) and naloxone prescriptions (e.g., Mueller, Koester, Glanz, Gardner, & Binswanger, 2017). General perceptions of PDA thus remain largely unknown in this patient population. As for AM, studies involving patients in substance use treatment programs and clinics have explored the abuse and diversion of prescription drugs (e.g., Inciardi, Surratt, Cicero, & Beard, 2009; Inciardi, Surratt, Kurtz, & Cicero, 2007). Few, if any, studies have concurrently explored general perceptions of PDA among PC and AM patients. A concurrent exploration, however, could foster the inclusion of patients similarly engaged with medical fields at the forefront of the PDA problem, yet potentially at different points on the continuum of prescription and other drug use (e.g., non-use and severe substance use disorder). Subsequently, the knowledge generated could inform clinical

practice efforts to mitigate PDA among patients across the continuum and across healthcare settings (e.g., PC and AM clinics).

The purpose of this qualitative analysis was therefore to examine perceptions of the scale and context of PDA among PC and AM patients in Appalachia. The data were collected through semi-structured interviews as part of a mixed methods study on provider-patient communication about PDA.

## Methods

### Study setting and sample

Purposive sampling was primarily used to identify and recruit patients. Eligible patients were 18 years or older, could provide informed consent, and lacked a cognitive impairment or other condition warranting non-participation. Patients were selected at the judgment of clinic and study staff for: 1) familiarity with the PDA problem or residential proximity to counties with a high prevalence of PDA; and 2) willingness to discuss the PDA problem. They were recruited from PC clinics affiliated with a rural, PC practice-based research network, an AM clinic, and a recovery center in Central and South Central Appalachia. A two-pronged recruitment approach was used, including study flyers posted in the clinics and recommendations from clinic staff of patients to contact for participation. Snowball sampling was ultimately integrated after a patient recommended by clinic staff supported the recruitment of three patients, all of whom were staff at a recovery center. Sample characteristics are summarized in Table 1 (n=20).

The Institutional Review Board at [Name of Institution] approved this study. Before the interviews, one researcher explained the study and informed consent document and obtained written consent. Patients received \$50 as compensation for participation.

### Data collection

An interview guide was developed based on Social Cognitive Theory (SCT) (Bandura, 1986) and communication theory research (McCroskey, 1997). The questions aimed to examine patient perceptions and experiences regarding PDA, among other aspects of provider-patient communication. In October 2014-July 2015, one male researcher with qualitative research training and PDA expertise conducted the interviews in private settings within the clinics and recovery center from which patients were recruited. A second researcher or research assistant took field notes. The interviews were audio-recorded and approximately 54 minutes in length on average. The researchers and research assistants transcribed the interviews verbatim. QSR International's NVivo Software (versions 9 and 10) facilitated data management, coding, and analysis (2010, 2014).

### Data analysis

Thematic analysis involving a blended inductive and deductive approach was used to identify themes and subthemes (Braun & Clarke, 2006, 2012). Initial codes were developed based on the interview guide and study aims. One researcher with qualitative methods expertise performed a line-by-line reading of a randomly selected subset of transcripts (n=5)

to refine the initial codes and identify emergent codes. The codes were subsequently defined and organized to generate a coding frame. A process of independent review and open discussion was used to clarify and revise the coding frame until consensus was reached. Two research assistants with qualitative methods training double coded the transcripts (Boyatzis, 1998). Modifications to the coding frame were made as needed to integrate emergent codes. Using the coded data, one researcher identified common and recurrent themes and subthemes (Braun & Clarke, 2006, 2012). Quotes representative of the themes and subthemes were also selected.

## Results

Three themes, each described below and summarized in Table 2, were identified: 1) pervasiveness of PDA; 2) routes and routine practices for prescription drug acquisition and distribution; and 3) rationales for prescription drug acquisition and distribution.

### Theme one: pervasiveness of prescription drug abuse

The majority of patients perceived PDA to be a widespread problem as evidenced by their descriptions of its prevalence and severity. Blunt and definitive statements like “it’s bad” and “it’s a problem” were common. As patients described the scale of PDA, they frequently did so in a local or regional context. For example, one stated, “Especially around this area man pain pill usage is bad.” In terms of prevalence, most patients perceived PDA to be highly prevalent and, at times, ubiquitous. One reported, “It’s everywhere. It’s just people abusin’ pills.” Most patients estimated the prevalence to be at least 50%, often markedly higher, if asked to quantify it. One said, “For the younger ones, it’s probably about 80% in [city].”

When characterizing the severity of PDA, many patients elaborated on the negative consequences they associated with it. Cited consequences largely clustered around two domains: 1) overdose and overdose deaths; and 2) personal and social costs, or “loss[es].” Describing the local incidence of overdose, one patient said, “That’s how it is down here. You hear them ODing all the time.” Personal and social costs were generally perceived as equally extensive, ranging from the loss of relationships to the loss of stability to imprisonment. One patient expressed the extent of the losses suffered by a friend: “she lost her husband, he divorced her, she lost her home, umm her nursing license, driver’s license, vehicle, everything.” Speaking from personal experience, another said:

Started shooting up morphine and OxyContin<sup>®</sup> a lot and um within a few months . . . if I didn’t have a couple hundred dollars a day I mean, I was sick. I just kept going downhill, um, in and out of jails.

Patients commonly differentiated among prescription drugs as they described PDA and related consequences. Prescription opioids were most frequently mentioned. Patients at times referred generally to “pain pills,” “pain killers,” or the like, while at others they referred to a specific prescription opioid by name, such as “OxyContin<sup>®</sup>” and “Percocet<sup>®</sup>.” Prescription opioids identified by name were not limited to those associated with the treatment of pain. Rather, they included those associated with the treatment of opioid use disorder, especially buprenorphine products. According to one patient, “Suboxone<sup>®</sup> is just as wildly abused as the OxyContin<sup>®</sup> used to be.” Although less frequent than prescription

opioids, benzodiazepines or “nerve pills” were mentioned. Patients often referred specifically to Xanax<sup>®</sup> and, at times, in combination with prescription opioids. One patient said, “It’s bad down there. He said the pharmacist said that he should just put a gumball machine. Two of ‘em. One with uh Xanax<sup>®</sup> and one with Lortabs [Lortab<sup>®</sup>].”

### **Theme two: routes and routine practices for prescription drug acquisition and distribution**

PDA was perceived by most patients to be closely connected with the accessibility of prescription drugs. They identified multiple routes of access—legitimate and illegitimate—by which prescription drugs are acquired. Simultaneously, many patients noted routine practices, or behaviors, involved in not only the legitimate and illegitimate acquisition of prescription drugs, but the illegitimate distribution of prescription drugs for abuse as well. It was not uncommon for patients to describe more than one route or routine practice. The supply of prescription drugs accessible for abuse through these processes was usually perceived to be sizable. As one patient said, “You can get ‘em anywhere.”

Most patients pinpointed the healthcare system, namely prescriptions generated by “doctors” and healthcare facilities, as a central route of access to prescription drugs. Remarks about individuals “going to the doctors and getting their prescriptions” were prevalent, with some patients specifically identifying the use of the emergency room or specialty care clinics. Among the specialty care clinics noted were those associated with the treatment of pain and opioid use disorder, designated by many patients as “pain clinics” and “Suboxone<sup>®</sup> clinics,” respectively. One patient stated, “A lot of people get and abuse from the Suboxone<sup>®</sup> clinics,” while another said:

Everybody’s going to pain clinics . . . that’s where the problem’s at . . . they were being prescribed so many pills and like fentanyl sucker, and Oxy eighties, twenties, forties, and um, Xanax<sup>®</sup>. I mean all kinds of [pills], bags and bags of pills.

Behaviors exhibited by individuals attempting to obtain prescription drugs from the healthcare system were described by multiple patients, with one referring to them as “the manipulation process with the medical professionals.” Specifically, such behaviors were framed as a means to obtain prescription drugs for personal abuse or distribution on the street, often both. Irrespective of the endpoint, many patients described the high rate at which individuals seeking prescription drugs interface with the healthcare system. Frequent office visits and use of multiple doctors or clinics, including those distantly located, were among the commonly cited behaviors. One patient describing a family member stated, “She goes from doctor to doctor to doctor, gets her pills.” Another explained, “Yeah, that’s definitely a big thing, people drive to different states, and like driving to Florida, you know two or three times a month.” Many patients also mentioned behaviors aimed at deceiving a doctor at the point of contact to “write a prescription.” Feigning symptoms and supplying a “fake” magnetic resonance imaging (MRI) report were among those described. One patient said:

I do know people that do go and uh you know get medicine like that and they you know they always tell ‘em usually they’re worse than what they are . . . they know how to play it you know to get what they want.

Some patients characterized these behaviors as effective and relatively effortless. A patient speaking from personal experience said, “In the community here it was as eas[y] as going and buying a loaf of bread at the store.”

Many patients perceived street-level transactions as a common route of access to prescription drugs. Statements about behaviors—sales, purchases, and trades—associated with the illegitimate distribution of prescription drugs on the street, or “black market,” were prevalent. As an example, a patient describing a family member stated, “He also sells ‘em [pain medicine] too. And he buys ‘em too.” The remarks of several patients suggested street-level transactions were regarded a regular event that resulted in the distribution of a large volume of prescription drugs. One patient recalled, “You had I mean lots, a large quantity of pills and thousands upon thousands of OxyContin® in one home . . . distribute[d] daily.”

Some patients elaborated on street-level transactions, offering details about the methods used to obtain prescription drugs. They described the types of transactions (e.g., sales and trades) and “forms of currency” used in the transactions. Among those mentioned were cash, food stamp cards and other goods, and various services. One patient stated, “I know about the food stamp card thing and umm and just buying, you know, just buying them straight cash and I’m sure you know sexual favors for . . . pills too.”

When describing the healthcare system and street-level transactions as routes of access, multiple patients identified points of overlap in the operations of the two routes. Prescription drugs involved in street-level transactions were commonly traced back to the healthcare system, suggesting it was an early point in the distribution chain. One patient stated:

I heard about people gettin’ prescribed you know for a month’s time like 60 or 90 pills or whatever . . . And sellin’ ‘em on the streets and stuff . . . I know personally five people that go to a doctor like this and there’s nothing wrong with them. They just go for the pills and sell them on the street.

A more complex level of interaction between the two routes was also described, with several patients alluding to a vicious, self-perpetuating cycle. One explained:

His drug dealers they’ll sell them and do them, when they they go to the doctor, they’ll sell them to go to the doctor. To get the money to go to the doctor if they run out they go buy more from other people they know. So it’s just constant.

Multiple patients commented on the roles of social contacts, or “connections,” in the acquisition and distribution of prescription drugs, especially family and peers. They identified them as a direct route of access to prescription drugs, whether for personal abuse or distribution on the street. Overt behaviors used to obtain prescription drugs in the possession of social contacts were noted, like requests, sharing, and collaboration. One patient recalled, “I had somebody inside of a pharmacy that would give me really whatever I wanted . . . I never really had to go to a doctor you know. I skipped the doctor and went to the pharmacy.” More covert behaviors were also described, like theft. One patient stated, “The medicine he stoled from my aunt . . . And he stole all her pills, and she had just took one before she went to the hospital.” Alternatively, some patients perceived social contacts as a facilitator of access, rather than a direct route. In this role, they represented a source of

inside information, capitol, or other support that enabled individuals to obtain prescription drugs via various routes. One patient said:

We had of course just found out hey we can go to the doctor and we don't have to pay this high street dollar . . . we would get together and help each other pay for the doctor visits.

### **Theme three: rationales for prescription drug acquisition and distribution**

Perceptions of underlying reasons for the acquisition—legitimate or illegitimate—and the illegitimate distribution of prescription drugs for abuse were embedded in patient narratives. Two subthemes within a theme of rationales for prescription drug acquisition and distribution were identified: 1) tolerance/addiction; and 2) revenue source.

**Tolerance/Addiction**—Tolerance and addiction were perceived by many patients as rationales for the acquisition and, at times, distribution of prescription drugs. Distribution was specifically conveyed as a means of obtaining a prescription drug of choice or ensuring adequate access to prescription drugs for personal needs. With tolerance, several patients either explicitly or implicitly described the development of “tolerance” to prescription drugs, including a need for larger doses. As for addiction, multiple patients not only overtly identified the role of addiction, but expounded on signs or symptoms associated with addiction, such as craving and impaired control. One patient said, “No longer did I make a profit . . . I was a consumer now, so the only reason I went to pain clinics was to be able to feed my own addiction.”

**Revenue source**—Many patients grounded the acquisition and subsequent distribution of prescription drugs in economic terms, perceiving the process as a revenue source. As one patient explained, “It was also a money maker . . . because now instead of having to go purchase other people’s prescriptions we had our own prescription and . . . you had plenty of customers.” Some patients characterized it further as a primary revenue source or as a supplemental revenue source, referred to at times as “extra money.” It was not uncommon for connections to be made between economic conditions and the need for a revenue source, whether primary or supplemental. One patient said, “And with this economy . . . I can sorta see how somebody desperate enough would. Like you know a lot of elderly people got to doin’ that because social security wasn’t makin’ ends meet and everything.”

Related to revenue source, several patients detailed the “street value” of prescription drugs, normally per pill/milligram or per month. Sizable monetary profits from prescription drug sales were often reported. One patient said, “One guy . . . he was on disability and getting more selling his Suboxone® prescription than he was from his disability benefits. And I think he was getting 7 or 800 bucks a month.” Likewise, another reported:

We were all coming back with you know a few thousand dollars’ worth of pain medications street value . . . an investment of a dollar fifty and you are bringing back you know 30 dollars, so pretty good investment on your money 28 dollars or 28.50 on every pill you sell.



## Discussion

This qualitative analysis is among the first to examine PDA from the perspective of PC and AM patients. Patients perceived PDA as prevalent and pernicious in this Appalachian region. PDA was seldom characterized in isolation. Rather, patients described it within the context of dynamics perceived to be involved in the acquisition and distribution of prescription drugs for abuse. Multiple routes of access to prescription drugs were noted, along with routine practices, or behaviors, exhibited in their acquisition and distribution. Rationales underlying these processes were identified. Collectively, these findings have potential implications for clinical practice to mitigate PDA.

Consistent with prior research on the views of the American public (Barry et al., 2016), the findings suggest patients viewed PDA as a problem. This was in part related to perceptions of its prevalence. The numerical estimates and narratives of patients indicate PDA was considered highly prevalent, with many maintaining a sizable proportion of the population engages in PDA. Conversely, the vast majority of the population aged 12 years or older did not abuse prescription drugs in the past year according to results from the 2015 National Survey on Drug Use and Health (NSDUH) (Hughes, et al., 2016). Given the incongruence, patient perceptions could reflect an overestimation of the prevalence of PDA among the general population, a tendency similarly described in prior studies involving college students (e.g., McCabe, 2008; Silvestri & Correia, 2016), for example. The NSDUH, however, targets the civilian, noninstitutionalized population, excluding various subpopulations that could experience higher levels of substance use (e.g., homeless persons) (CBHSQ, 2016). The NSDUH simultaneously relies on self-reports of substance use, introducing the potential for under- or over-reporting (CBHSQ, 2016). Hence, the incongruence between patient perceptions and national estimates could instead reflect an underestimation of the prevalence of PDA by the NSDUH. The scale of the incongruence could be further amplified in a patient sample drawn from a region acutely impacted by PDA and associated harms.

The findings indicate patients perceived prescription drugs to be accessible through legitimate and illegitimate routes, including the healthcare system (e.g., doctors), street-level transactions (e.g., purchases), and social contacts (e.g., family). These align with the results of prior research suggesting that prescription drugs are obtained from multiple sources (Inciardi et al., 2009). Of the routes, the illegitimate ones—street-level transactions and social contacts—are especially concerning. Prescription drugs are presumably taken in the absence of counseling and medical oversight, potentially amplifying risk for adverse outcomes. While perceptions of the relative volume of prescription drugs acquired through the different routes could not be quantified, a large portion potentially has its origin in the healthcare system. Patients framed the healthcare system as a route to obtain prescription drugs for personal abuse and distribution on the street. National estimates similarly suggest that many prescription drugs accessible through social contacts, namely friends and relatives, likely originate from the healthcare system (SAMHSA, 2014). Thus, the findings further substantiate that the healthcare system can be both a direct route of access and an indirect route of access by way of street-level transactions and social contacts.

In parallel to multiple routes of access to prescription drugs, patients perceived multiple behaviors to be exhibited in their acquisition and distribution. Specific to the healthcare system, frequent office visits and use of more than one doctor or clinic were among those noted. These findings are interesting given that state prescription drug monitoring programs (PDMPs)—electronic databases that collect data on the dispensing of controlled prescription drugs—are promising for identifying and reducing such behaviors, namely “doctor shopping” (Prescription Drug Monitoring Program Center of Excellence at Brandeis University, 2014; U.S. Department of Health and Human Services [HHS], 2013). The effectiveness of PDMPs in this regard has potentially been bolstered by initiatives aimed at facilitating their enactment and enhancement, particularly in recent years (HHS, 2013). Patient perceptions could thus be more congruent with behaviors exhibited before, rather than after these initiatives. Alternatively, patient perceptions could reflect the multi-state region of Appalachia in which the study was conducted. More specifically, they could reflect a limitation in the effectiveness of PDMPs related to insufficient data sharing across states. Improving interstate data sharing could thus be important in continuing to bolster the effectiveness of PDMPs for reducing inappropriate access to and use of prescription drugs, especially in states affiliated with Appalachia.

Patients perceived two primary rationales to underlie the acquisition and distribution of prescription drugs—tolerance/addiction and revenue source. These rationales generally align with the motives examined in previous studies for deceiving a physician to obtain a prescription (Sanders, Eassey, Stogner, & Miller, 2016; Stogner, Sanders, & Miller, 2014). Moreover, they correspond to the connotation of diversion (i.e., “the transfer of a prescription drug from a lawful to an unlawful channel of distribution or use” [Rigg, Kurtz, & Surratt, 2012, p. 145]) as a “for-profit industry” (Inciardi, et al., 2007, p. 172). From a regional perspective, multiple communities in Appalachia are characterized by economic hardship (Pollard & Jacobsen, 2017), potentially providing fertile ground for the development of such an industry. Ultimately, the findings on rationales, coupled with those on routes of access, suggest patients have awareness of both sides of the “drug abuse supply-and-demand equation” (Twillman, Kirch, & Gilson, 2014, p. 369).

As noted in the methods, patient interviews were guided in part by SCT (Bandura, 1986), which explains human behavior as a triadic, reciprocal interaction of personal, behavioral, and environmental factors (Crosby, Salazar, & DiClemente, 2013; McAlister, Perry, & Parcel, 2008). SCT suggests self-efficacy beliefs and outcome expectations are among the factors that could influence behaviors (Bandura, 2004; Crosby, et al., 2013; McAlister, et al., 2008). Although the influence of self-efficacy may not be substantiated, the findings on rationales potentially substantiate the influence of positive outcome expectations—physical outcome expectations especially (Bandura, 2004)—on behaviors related to prescription drug acquisition and distribution. Tolerance/addiction aligns with an expectation of pleasurable effects (Bandura, 2004), specifically from a prescription drug. Similarly, revenue source aligns with an expectation of material benefits (Bandura, 2004), specifically money. Consistent with SCT, these findings thus suggest outcome expectations could be among the psychosocial determinants of prescription drug-related behaviors.

Overall, the findings highlight opportunities in clinical practice to prevent and reduce PDA. The opportunities could be especially relevant to healthcare providers delivering services to patients in Appalachia. Similar to prior research (Inciardi, Surratt, Cicero, & Beard, 2009), the findings support the provision of patient counseling on the proper use, storage, and disposal of prescription drugs with abuse potential—opioids and benzodiazepines in particular. Within the context of patient counseling, it could be beneficial to include a discussion of the possible risks of intentional (e.g., sharing) and unintentional (e.g., theft) distribution. Patient counseling could also hold promise for countering potential perceptions that could promote patient engagement in PDA, like overestimating the prevalence. In addition, the findings suggest healthcare providers should be attentive to patients attempting to acquire prescription drugs. Given that an underlying substance use disorder could be fueling the attempts, periodic screening of patients for substance use disorders could be helpful (CSAT, 1997b; National Institute on Drug Abuse [NIDA], 2012). If a substance use disorder is identified, it could be an opportune setting to intervene according to patient need (e.g., referral to evidence-based treatment) (CSAT, 1997b; NIDA, 2012). Conversely, if a substance use disorder is not identified, it could be an opportune setting to advance prevention (e.g., reinforcing proper use and abstinence from PDA) (CSAT, 1997b; NIDA, 2012). Finally, given that patients may acquire prescription drugs through multiple routes and/or distribute them, the findings support monitoring patients on prescription drugs with abuse potential. Periodic review of PDMP data, for example, could be helpful (CDC, Public Health Service, HHS, 2016).

This qualitative analysis has several limitations that should be noted. Patients were recruited from a single geographic region—Appalachia—limiting generalizability to other regions. The regional focus, however, can simultaneously be a strength of the analysis as the findings advance knowledge of the perceptions of patients living in a region characterized by a high burden of PDA and rurality. Future research could examine the perceptions of patient populations living in other regions, potentially concentrating on regions characterized by a low burden of PDA or urbanity to support comparisons. Given the small sample size (n=20), the findings may not represent the breadth of perspectives of PC or AM patients. The findings are also susceptible to biases inherent in the use of purposive sampling (e.g., researcher bias), interviews (e.g., interviewer bias), and self-reported data (e.g., recall bias). Patient perceptions potentially could have been explored more fully since this analysis was conducted as part of a larger study on provider-patient communication about PDA, rather than general perceptions of PDA. Finally, patients may have described PDA using dissimilar, possibly erroneous definitions as one was not provided.

## Conclusions

The themes identified by this qualitative analysis indicate perceptions of PDA among PC and AM patients in Appalachia are multifaceted. Patients considered PDA to be prevalent and a source of negative consequences. Patients connected abuse and accessibility, identifying routes, routine practices, and rationales involved in prescription drug acquisition and distribution. Clinically, the findings suggest counseling patients on the proper use, storage, and disposal of prescription drugs with abuse potential, screening patients for substance use disorders, and monitoring patients on prescription drugs with abuse potential

could mitigate PDA—both directly among patients and indirectly among non-patients through reducing prescription drug distribution by patients.

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**Table 1.**

Sample characteristics (n=20)

Characteristic	Category	Number (%)
Age	18-41 years	11 (55)
	42-65+ years	9 (45)
Gender	Female	10 (50)
	Male	10 (50)
Medical field	Primary care	15 (75)
	Addiction medicine	5 (25)

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**Table 2.**

Themes: brief descriptions and representative quotes from patients

Theme	Brief Description	Representative Quote(s)
Pervasiveness of prescription drug abuse	Perceptions of prescription drug abuse as prevalent, problematic, and associated with negative consequences	It's bad. It's uh, this town is awful. . . . it's killing people left and right, you know shooting them up and uh, it's killing people. Off the mountain, um, you can walk, you can drive down the street and you can see girls prostituting, um, you know for pills. You can . . . see just people walking around looking like zombies. It's took over this region.
Routes and routine practices for prescription drug acquisition and distribution	Perceptions of routes of access, both legitimate and illegitimate, to prescription drugs, along with behaviors involved in acquiring and distributing prescription drugs	When they get the doctor, the doctor gives 'em to 'em, then when they run out they go buy 'em off the street and pay double money. These people off the street gets 'em from the doctor and sells 'em. They don't need 'em. They just go to the doctor to get 'em to sell. See that's where a lot of it's happened. These people go to the doctor and complain about this and that, doctor writes a prescription. Okay, they sell their pills and they make like \$5, 10 a pill off of it. You have to take your MRI [magnetic resonance imaging] with you. And they took the fake MRIs, I mean I don't know who you go to buy 'em from, but I know that they buy 'em because uh uh one of them said they had to get 50 dollars for it.
Rationales for prescription drug acquisition and distribution	Perceptions of underlying reasons for acquiring and distributing prescription drugs—tolerance/addiction and revenue source	It's just something so easy to get wrapped up in you know 'cause it does take the pains away as we say for a while but then once it controls you and you're addicted then it's a whole different ball game and people just do whatever it takes . . . to give up that need. It goes back to I think just being in a poor area. People got to make money, and they're using this as a vehicle to do so.

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