ORIGINAL RESEARCH

Pain Management During West Virginia's Opioid Crisis

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Purpose: **Opioid use disorder has caused significant morbidity and mortality resulting in opioid prescribing limiting laws, such as State Bill 273 in West Virginia. The purpose of this study is to explore the impacts of a restrictive opioid prescription law on physicians in medical practice in West Virginia.**

Methods: **A qualitative study with open-ended semistructured interviews with a purposive sample of physicians in West Virginia. Interviews were recorded and transcribed verbatim. A preliminary code book was developed by 3 coinvestigators. Interview transcriptions were analyzed with a code-based text search query. Content analysis was utilized as the methodological orientation underpinning for the current work.**

Results: **Interviews were conducted with 20 physicians (10 primary care physicians and 10 specialty physicians) in practice in West Virginia. Physicians identified 5 theoretical domains related to SB273: changing opioid prescribing and documentation requirements; rural socioeconomic disparities; a continuum between chronic pain and substance use disorder; difficulty in balancing patient needs and the concern for diversion; lack of available alternatives to opioids for chronic.**

Conclusion: **Prescribing opioids in rural West Virginia is complex due to identified challenges. Recommendations for opioids prescribing legislation include clear messaging of guidelines and recommendations, efforts to address socioeconomic disparities of health and pain, and improved accessibility for treatment of both pain and dependence in rural communities are important areas of growth in the rural health care environment. (J Am Board Fam Med 2022;35:940–950.)**

Keywords: **Chronic Pain, Family Medicine, Opiates, Opioid-Related Disorders, Patient-Centered Care, Prescriptions, Primary Health Care, Qualitative Research, Rural Population, West Virginia**

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>
> — Specialist, female, 29 years of practice

Introduction

The opioid crisis has presented an extraordinary public health dilemma over the past 2 decades.[1] It has been a significant driver in reducing life expectancy among Americans,[2] and is estimated to cost the United States more than $500 billion annually.[3] The Centers for Disease Control and Prevention (CDC) reported a peak in opioid prescribing between 2010 and 2012; however, in recent years, data indicate substantial declines in opioid prescribing.[4] Despite the decline in opioid prescribing rates, the rate of

This article was externally peer reviewed.
Submitted 8 March 2022; revised 17 May 2022; accepted 23 May 2022.
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Funding: Funding for this study was provided by the National Institutes of Health (NIH) National Institute on Drug Abuse Grant 1R21DA049861-01 and by the NIH National Institute of General Medical Sciences Award 5U54GM104942-05. The content is solely the responsibility of the authors and does not necessarily represent the views of the NIH.
Conflicts of interest: None.
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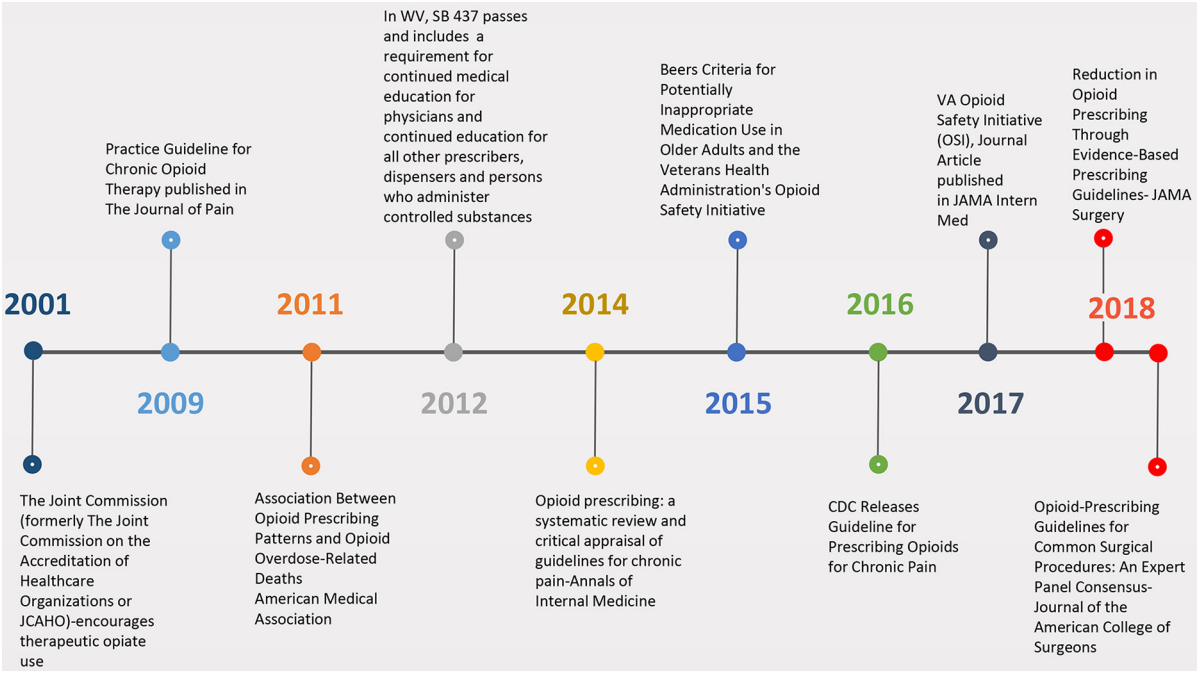
Figure 1. Example of changing state and national opioid prescribing recommendations.

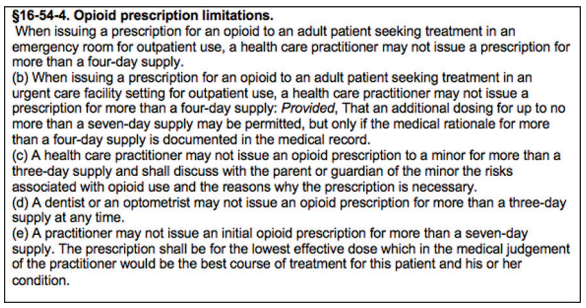


death from opioid overdose has continued to climb. Whereas initially opioid overdose deaths involved a majority from prescription opioids (the first wave), there was a progression away from overdoses involving prescription opioids to a majority of those involving heroin (the second wave)[5] and then later to a majority of overdose deaths arising from synthetic opioids, predominantly fentanyl (third wave).[6,7]

West Virginia has been recognized as 1 of the epicenters of the opioid crisis due to its high rate of overdose-related deaths compared with other states.[8] West Virginia's overdose death rate has been the highest in the United States for more than a decade.[9,10] For instance, the 2020 CDC Wonder Data shows that that West Virginia has a significantly higher overdose death rate than the rest of the United States. West Virginia had an 81.4 overdose deaths per 100,000 persons, whereas states such as California, Texas, and Iowa reported lower opioid overdose deaths per 100,000 persons that is, 21.8, 14.1, and 14.3 respectively. Neighboring Appalachian states such as Kentucky and Ohio had significant yet lower opioid overdose deaths per 100,000 persons (49.2 and 47.2 respectively) when compared with West Virginia.[11] Therefore, it becomes apparent that reducing overdose deaths must be a priority in West Virginia.

Despite the majority of opioid related deaths evolving from prescription opioids to illicit other forms of opioids such as heroine and synthetic opioids, there has been a continued emphasis in curbing opioid prescribing both across the country and within West Virginia, a state entirely encompassed within Appalachia. There has been a national emphasis on decreasing prescription opioids through prescribing guidelines[12], but also many states took measures to curtail inappropriate prescribing of opioids (Figure 1). Some measures put into place to further curb prescribing have included State Prescription Drug Monitoring Programs (PDMP) which was implemented in West Virginia in 2011, and national acute and chronic pain clinical practice guidelines which offered prescribing best practice suggestions.[13] Restrictive opioid prescribing laws have also become more widespread at the state level. In West Virginia, Senate Bill 273 (SB 273) went into effect in 2018; in brief, this bill (Figure 2) established (1) opioid prescribing limits, (2) requirements for pain clinic designation, and (3) mandatory documentation of informed consent when using opioid pain medication.[14] While our previous work has demonstrated a decline in opioid prescribing associated with the law,[15] quantitative techniques are limited to data capture and are unable to elucidate personal reasons for such changes. Prescribed opioids can result in increasing numbers of overdose deaths as well as other serious health

Figure 2. Prescription limitation language in SB 273 (Opioid Reduction Act).



§16-54-4. Opioid prescription limitations.
When issuing a prescription for an opioid to an adult patient seeking treatment in an emergency room for outpatient use, a health care practitioner may not issue a prescription for more than a four-day supply.
(b) When issuing a prescription for an opioid to an adult patient seeking treatment in an urgent care facility setting for outpatient use, a health care practitioner may not issue a prescription for more than a four-day supply: *Provided*, That an additional dosing for up to no more than a seven-day supply may be permitted, but only if the medical rationale for more than a four-day supply is documented in the medical record.
(c) A health care practitioner may not issue an opioid prescription to a minor for more than a three-day supply and shall discuss with the parent or guardian of the minor the risks associated with opioid use and the reasons why the prescription is necessary.
(d) A dentist or an optometrist may not issue an opioid prescription for more than a three-day supply at any time.
(e) A practitioner may not issue an initial opioid prescription for more than a seven-day supply. The prescription shall be for the lowest effective dose which in the medical judgement of the practitioner would be the best course of treatment for this patient and his or her condition.

problems, but they also have an important and legitimate value for medical care when prescribed and used appropriately. The challenges posed by restrictive opioid prescription laws to physicians who care for patients with severe pain, for example, has not been qualitatively studied to better understand what is happening and how it can be addressed. In the present study, we interviewed primary care and specialty physicians to assess the impact of opioid prescribing recommendations and laws on caring for patients with chronic pain or opioid use disorder in West Virginia.

Methods

This study was part of a larger, sequential mixed methods analysis on the impact of SB273 (a restrictive opioid prescribing law) using an interrupted time series analysis of state PDMP data as well as stakeholder interviews. This sequential mixed methods design utilizes a "mixed methods interpretivism" approach to answer the "why" question of the earlier quantitative results.[16] The qualitative analysis of interviews described here focuses on understanding the challenges of providing legitimate pain-related care and not causing harm given the new limitations of opioid prescribing for rural physicians.

Study Design and Participants

We conducted open-ended semistructured interviews with a purposive sample of 20 rural health care prescribers (10 primary care physicians [PCP] and 10 specialty physicians) practicing in West Virginia. These prescribers needed to be licensed, practicing providers within the state of West Virginia and authorized to prescribe opioid medications during the implementation period of SB273 to participate. An estimated sample size needed to achieve saturation was determined before data collection however, saturation was determined through the analysis of the interviews.[17,18] In qualitative research, data saturation is achieved when no new themes or codes emerge from the data.[19,20] Analysis of interview data were ongoing during study period to identify saturation.

Procedures

Locations and specialty of participants were identified with a maximum variation purposive sampling plan based on anonymous county-level and specialty-level opioid prescription volume data from the state PDMP. Counties with higher or lower opioid prescribing, based on PDMP data from previous study, were identified and stratified for the final sampling location decision.[15] This process was also completed for specialties, excluding primary care specialties, to determine a sampling plan. The primary care physicians were recruited through the West Virginia Practice-Based Research Network (WVPBRN). The WVPBRN is a group of primary care clinics across the state to participate in research endeavors. Interviews were completed between March and October of 2020. Specialty physicians were recruited through a convenience sampling technique based on the specialties identified in the purposive sampling plan. Investigators contacted physicians through an introductory e-mail with information about the study and requesting their participation. Participants were provided up to 2 follow-up e-mails requesting participation. Twenty-four primary care physicians were contacted, thirteen did not respond, and 1 declined. Twelve specialist physicians were contacted, 1 physician was contacted with no response, and 1 additional specialty physician declined. Interviews were conducted with a research nurse (PD) at a time convenient for the prescriber. The research nurse and specific training in qualitative research methods and interviewing (PD). At the completion of the study, participants were compensated $30 for their time involved in the study. Informed consent was obtained before the interview. The study protocol was approved by the West Virginia University Institutional Review Board (Protocol 1908659237).

Data Collection

Interviews were completed via telephone in a private personal office by a coinvestigator (PD), digitally recorded, and guided by a semistructured interview guide. The semistructured interview guide consisted of open-ended questions generated

by review of our previously documented quantitative opioid prescribing data trends in WV.[15]

Interview questions focused on the following:

1. Brief history of their medical practice
2. Experience with prescribing opioids
3. Awareness of regulations and rules impacting opioid prescribing
4. Understanding of SB273
5. Changes in prescribing practices
6. Any impact on patient care

The interviews lasted 30 to 60 minutes each. The average PCP interview was 30.2 minutes and the average specialist interview was 21.1 minute. Clarifying questions were utilized as technical member checking[21] during interviews to verify accuracy with participants. Interview transcripts were transcribed verbatim and verified by a coinvestigator (PD).

Data Analysis

Content analysis was utilized as the methodological orientation underpinning the current work. Three coinvestigators preliminarily reviewed the transcripts to inductively generate a preliminary code book.[22] The preliminary code book was then provided to research assistants (RH, BR), who identified synonyms and other search terms, and presented a finalized codebook to the investigators for approval. The interview text was then analyzed with a code-based query in Nvivo12. These were then reviewed, and alternate codes were identified as needed. Coinvestigators carefully reviewed all data documents, allowing for greater reflection and iteration as inductive codes emerged. Memo-writing and group discussion were utilized by coinvestigators to expand themes, which were then further explored and assessed for validity by coauthors MAC and RAP.[21] Data saturation was determined when no new codes were identified by the research team through the process above. It was determined that data saturation was achieved before 20 interviews with physicians. An audit trail was maintained throughout. Methodological rigor was enhanced by incorporating a multidisciplinary research team including a primary care physician, a specialist, an epidemiologist, and a qualitative research specialist. All members on the team have qualitative research experience. Investigator triangulation, the use of multiple researchers in the same study from different disciplines, was used in data analysis.[23] Reporting was cross checked with both COnsolidated criteria for REporting Qualitative research (COREQ) and Standards for Reporting Qualitative Research (SRQR) checklists for qualitative research.

Results

Participant Characteristics

Ten primary care physicians (PCP) and 10 nonprimary care physician specialty physicians were interviewed, including 12 male and 8 female providers. Specialist physicians interviewed were 3 orthopedic surgeons, a pain specialist, a rehabilitation specialist, a general surgeon, an anesthesiologist, an emergency medicine physician, a palliative care physician, and a dentist. Primary care physicians were Family Medicine physicians. Practice locations varied across the state of West Virginia and prescribers represented 10 different counties. Years or practice ranged from 6 to 31 years with an average of 15.3 years. All prescribers noted the challenges of caring for patients with pain, centering on 5 main themes. In this article we will report on the 5 identified themes identified including changing of opioid prescribing recommendations and documentation requirements, influence of rural socioeconomic disparities in pain and addiction care, balancing patient needs with concern for diversion, lack of available and efficacious alternatives to opioids for chronic pain, and a challenging diagnostic continuum between pain and addiction.

Changing Opioid Prescribing Recommendations and Documentation Requirements

Physicians commonly referenced the changing recommendations from state and national bodies (Figure 2) with respect to opioid prescribing – and how prescribers altered their practice over the years to maintain compliance with these recommendations, guidelines, and requirements.

> I'd always monitor what the CDC was recommending. . ..it's, is curious how. . . their recommendations evolved over the years (Specialist, male, 27 years of practice)

Initially, there was acceptance of opioid use due to the perception that pain was undertreated. This evolved toward more judicious use of opioid medications for pain as opioid-related harms became increasingly recognized. Many prescribers referenced early initiatives, such as "pain as the fifth vital sign" and the

emphasis on patient satisfaction among hospital systems and regulatory bodies as detrimental and even being an agent of blame for the opioid crisis. The fact that such guidelines had changed so significantly over the years was seen as being frustrating and led participants to diminish their validity. As the prescription opioid-related overdose deaths increased there were new national guidelines[12] developed to help guide physician prescribing. However, the recommendations from national organizations were felt to change over the years.

Validity of the academic literature, recommendations, and regulations was also called into question both because of the significant changes over time, and also because it seemed incongruent with physician's personal experiences with patients.

> You know, because patients historically say that they do get some relief, and it does improve their quality of life, and it does make a difference, uh, versus, you know, most of the literature that would say that it doesn't make a difference, and that actually makes their quality of life worse (PCP, male, 14 years of practice)

Furthermore, as these recommendations progressed to laws and became more rigid, as in the case of restrictive opioid prescribing laws, this was perceived as a troublesome loss of autonomy to make appropriate clinical decisions and in some cases, created negative patient care scenarios. Some participants felt that such regulations were overly focused on punishment rather than aiding health care providers and patients.

> So, I wish that they would have taken the time to actually say, "How can we help people?" Instead of "How can we persecute people?" (PCP, male, 9 years of practice)

Influence of Poverty and Rural Socioeconomic Disparities in Pain and Addiction Care

Prescribers shared an understanding that pain and addiction were multifaceted and influenced by poverty, socio-economic disparities, and other social determinants of health. The cause of pain itself could often be linked back to such disparities.

> I was at the Oral Health Community Center, and we do see a lot of the underprivileged patients, patients that don't have dental insurance or dental care. . .Pretty much everybody that came in there, unfortunately, was in pain. . .because they don't have the proper dental care. . .And then going on to private practice, of course, you know, you don't see it very much. Just because again, patients have the dental insurance, patients are coming in regularly and you know, taking care of them. (Specialist, female, 15 years of practice)

Poverty, lack of opportunity, lack of health insurance, the predominance of manual labor jobs requiring pain treatment to continue to function in these vocations were all seen as drivers of both pain and addiction within the prescribers' patient population. Misuse or diversion of opioids was seen as a practical decision by patients. Participants described how poverty and lack of economic opportunity drive the misuse and diversion of opioids within their communities.

> I think we need to focus more on making sure that we have adequate access to addiction treatments and adequate access to things that improve the economies in these areas. Because, ultimately, it's the economic problems that are driving addiction and driving opioids because I have a lot of patients who turn to selling drugs or using drugs because of economic factors. (PCP, female, 6 years of practice)

While practitioners identified underlying social issues driving health disparities with regards to pain and addiction, they expressed frustration with the limited avenues available to them to rectify such disparities within their scope of practice. These were seen to be wide-ranging and included housing, legal needs, and provision of healthy food and nutrition.

> People who have issues with narcotics, it's not their fault. We're the gatekeepers, we're the ones who should be screening for those with substance use disorder, screening with the high childhood trauma events, looking for that family history of diversion, looking for social- the social determinants of health. Do they have enough to eat, do they have a steady place to stay? Those type of things. (PCP, female, 15 years of practice).

Continuum of Pain and Addiction Creating Diagnostic and Treatment Dilemmas

Participants had observed firsthand the continuum between chronic pain and substance use disorder in their own patients over time. Participants described concern that their decisions regarding opioid prescribing may drive the misuse of illicit substances for pain. Some patients are not appropriate for a pain specialist referral; however they are high risk for addiction or diversion, and participants felt that

there was no option for these "in the middle" patients within the current environment. In trying to maintain practice within the confines of the new WV opioid prescribing limiting law the participants felt there was not a treatment plan for these patients.

> You see, the problem is there's no treatment for that group of patients. Because ideally speaking, they do not meet the criteria for addiction, because addiction implies disordered behavior and this-you notice average drug use and neither do they meet the criteria to get clinic pain medicine anymore. In the middle [of the patient spectrum for pain], there's no treatment plan for them. What can you do? (PCP, female, 15 years of practice)

Some participants noted a diagnostic dilemma, whereby patients came to their office seeking opioids for a complaint of pain, but for whom they believed addiction was the primary diagnosis. This realization led a number of participants to change their practice to incorporate addiction treatment:

> I got tired of... the people coming in and-and, saying I can't help you. And realizing that there was an addiction problem. So that's when I became certified with the [buprenorphine] treatment. (Specialist, male, 27 years of practice)

Other participants were able to improve their confidence in dealing with the continuum of addiction and pain by partnering with individual specialists affiliated with academic institutions who acted as informal mentors through for treatment of chronic pain and medication for opioid use disorder, or by using formalized outreach programs for that purpose.[24] In West Virginia this includes Extension for Community Health care Outcomes (ECHO) programs which links pain medicine specialists, addiction medicine specialists, and primary care clinicians in a learning collaborative for caring for patients with opioid use disorder.[25] However, these resources were either not available to, or not known by, the majority of participants, which may indicate the need for improved dissemination of formal programming. While the availability of addiction care specifically was seen to be improving, some participants noted that it did not match patient need.

Balancing Patient Needs With Concern for Diversion

Physicians noted that they felt obligated to consider not just patient needs when writing an opioid prescription, but also assess for risk of diversion through risk stratification and mitigation approaches, or in other ways "police" patients. Often this was in direct conflict with their obligation to provide optimal patient care. Being placed into this policing role made navigating their health care role and serving their patients challenging. Importantly, the need to assess risk for diversion was formalized within the various trainings and requirements for prescribers which were instituted as a response to the opioid epidemic. In West Virginia this included a 3-hour continuing medical education training required every 2 years to maintain licensure, in which assessment of diversion and mitigation of diversion factored heavily. This emphasis on prescribers policing patients was considered to be inappropriate by some participants, who felt that prescribers would generally avoid opioid medications if they had an alternative available. With respect to diversion, many physicians noted that sharing of pills with friends or family was commonplace among their patients, which they attributed to the culture of helpfulness and community in rural West Virginia.

> I have a few patients who, before COVID, they would be allowed to come with a significant other or friend and there have been a handful patient interactions where I've noticed it wasn't the patient requesting the narcotics. It was the patient advocate saying, "She's in so much pain. She really needs another prescription." She, she, she, and it was somebody else pushing for it . . .It took a while for me to understand. My staff, they've been around it longer. You know that whatever friend is just getting it for him. They're going to sell it or whatnot. (Specialist, female, 14 years of practice)

Assessing risk of diversion includes categorizing patients based on the providers' perception of that risk. Screening for diversion is also different from screening for addiction. Some participants questioned the validity of screening for risk of addiction as a result of the very complex social forces at play that can lead to addiction and the potential for stereotypes inherent in such screening.

> That was really the height of stupidity, thinking that we could screen people, and based on their characteristics tell if they were going to be vulnerable to developing addiction (PCP, male, 11 years of practice)

Participants noted that cues in a patient's presenting complaint, medical history, appearance, or other factors might be utilized to assess risk of addiction or validity of the pain complaint for

diversion, but were, in fact, poor predictors of risk for addiction or diversion.

Lack of Available and Efficacious Alternatives to Opioids for Chronic Pain

Physicians perceived that they did not have or were not trained in treating pain with nonopioid methods and this was detrimental for their patients. In many cases, opioid medication was seen as the only option, and that refusing to prescribe an opioid medication was tantamount to refusing to care for a patient's pain. Participants noted that they had been provided copious training focused on diversion (see above) through required continuing medical education for state licensure; however, learning more about treating the underlying pain complaints and issues patients were dealing with were viewed as possibly being more beneficial, but less emphasized. The need for psychiatry expertise was noted by several participants due to the psychological mediators of pain.

> . . .but instead of making me take drug diversion training [required for state licensure] and learn how many people are OD-ing on heroin, why don't you make me take a three-hour course on how to treat pain without a narcotic? (Specialist, female, 29 years of practice)

The lack of efficacious pain treatment alternatives was seen as particularly troubling for those practicing in a rural location because of the lack of other resources for treating pain in those areas. One participant related that her facility had been able to create a program for these services run by a social worker and a physical therapy assistant, which was effective and extremely popular among patients, but the majority of participants did not practice in an environment where such an initiative was feasible.

> In the cities, you have acupuncture, complementary medicine, the physical therapy, but if you work more rural, it's pretty much just medication that's available, and then it's either narcotics or non-narcotics. (PCP, female, 15 years of practice)

Even when alternative treatments were available and evidence-based, prescribers noted that insurance companies often do not cover these modalities, rendering them unavailable for many patients.

> But you know what, there's no alternative. The alternative issues come from insurance issues. For example, we know that aqua therapy, pain clinics with their interventions and even acupuncture and so forth, they help, but insurances will not cover. (PCP, female, 15 years of practice)

Referral to pain clinics was seen as possibly a viable option for some participants, however pain clinics were widely characterized as far away, difficult to get into, and focusing more on interventional procedures to treat chronic pain rather than the management of oral pain medication. Specialists willing to provide comprehensive pain services were seen as potentially extremely valuable to primary care physicians.

> Because that person, you know, is gonna help me more as a primary care doctor than the neurosurgeon, the orthopedic surgeon or whoever else it is that's, you know, making a million dollars a year or whatever, you know? (PCP, male, 14 years of practice)

Participants noted that, in addition to lack of knowledge or lack of referral resources locally, they also felt that they did not have time to personally provide this sort of comprehensive care for pain, incorporating both medical and psychological aspects within the confines of their short clinic visits. Lack of time to provide this care in a primary care setting was frequently mentioned, with some participants expressing a wish that restrictive opioid prescribing laws would include mandated lengthened appointments for patients to discuss chronic pain which would be reimbursed by insurance so make such interventions logistically feasible and sustainable in primary care settings.

Discussion

Guidance on the prescribing of opioids has changed significantly over the past 30 years.[26] In 1996 the American Pain Society considered pain to be "the fifth vital sign" and this was later incorporated into The Joint Commission requirements.[27] This coincided with the broad, pharmaceutical industry-driven view that opioid medications were safe and effective treatments for pain. However, as an understanding of the harms of opioids and risk of dependence and addiction expanded, a significant curtailment of opioid prescribing was implemented through a variety of methods.[28] For example, restrictive opioid prescription laws were enacted to limit opioid prescription by setting stringent prescription limits, and requiring constant patient policing to reduce misuse and diversion.[13] The

progression of recommendations and policy pertaining to opioid prescribing and opioid use disorder has evolved toward increasing restriction and regulation.[29–31] Physicians in this study found the changing recommendations to compound difficulty in treating patients with pain. Despite complying with the consistently changing opioid recommendations, the providers interviewed in this study expressed significant concern for the rapidly evolving opioid recommendations, and how these changes may adversely affect management of patients with pain.

Some providers recognized a shifting role from care giver to enforcer with regards to their patients' access to opioids. The providers emphasized that the act of policing their patients in such a manner may encourage the use of illicit substances. Assessment of diversion is particularly problematic, as providers' opioid-related risk perceptions may be inappropriately rooted in stigmatizing beliefs about patient gender, prior misuse, and race.[32,33] Although interviewees acknowledged that indeed there are some cases where patients or patient advocates do in fact misuse opioids, they did not perceive that a strong emphasis on diversion training helped adequately care for their patients with pain. Rather, interviewees suggested that a balance between drug diversion and how to treat pain without opioids needed to be emphasized in new policies, along with practical facilitators that would make such efforts successful in real-world implementation.

While balancing the needs of treating patients with changing policy, physicians are also overcoming hurdles to patient care relevant to rural practice. A common theme emphasized by the providers was the importance of social determinants of health in rural states like West Virginia. Selling diverted opioid medication as a strategy to pay for other expenses in the setting of poverty has been previously described[34], and our participants perceived this as a relevant phenomenon in their practice. The providers explained how poverty, pain, and a poor economy seem to increase the risk for opioid misuse, diversion, and related harms among their patients. This is supported in others' work on the subject.[35] Economic disadvantage is particularly relevant and has been recently shown to more strongly relate to overdose than urbanicity;[36] however the majority of the participants in our study practiced in both rural and more economically depressed areas.

Lack of feasible alternatives to opioids for the treatment of pain, including both knowledge of efficacious alternatives, as well as access to those in patient communities, was seen as a barrier. Limited access to complementary and alternative medicine in rural communities was also seen as barrier. The providers were additionally concerned that accessibility to alternative treatments for pain such as acupuncture or aqua therapy were predominantly localized to urban communities. Moreover, complementary and alternative medicine therapies are typically less affordable to patients given that they are often not covered by health insurance.[37,38] The physicians expressed that they need more training in treating chronic pain via nonopioid means in the rural environment, as well as more resources in rural environments to make nonopioid treatments available to their patient population. This paucity of treatment alternatives has previously been reported in qualitative studies.[39] The provision of such nonopioid alternative services has previously been studied via telemedicine "E-consult" for pain management and was associated with greater reduction of milligram morphine equivalents among chronic pain patients but with similar initiation of nonopioid medications to controls.[40]

Many providers interviewed in this study acknowledged that the continuum of chronic pain and opioid dependence is challenging for physicians practicing in rural communities. The providers did not feel that they were adequately trained to treat patients with chronic pain and opioid use disorder and at times struggled to differentiate the 2 diagnoses. The availability of addiction care was seen as improving, but still not meeting the need. The paucity of addiction care in rural areas has been previously described,[35] with barriers to the provision of that care being multifactorial.[41] As with pain management, the use of telemedicine services has demonstrated feasibility in addressing this gap.[42] In addition, integrating addiction care into primary care practices has been viewed favorably.[43] Several of our participants mentioned WV programs to assist in telemedicine for addiction care, but the majority of our participants did not have experience with this service.

Multiple barriers have been described in relation to prescribing limiting policy[44] including lack of alternative nonopioid treatment options for chronic pain,[39]difficulty with appropriate compensation for documentation and clinic time for appropriate chronic pain treatment with opioids,[39] and challenges

with barriers to diagnosis and treatment of opioid use disorder.[45] While much of the policy developed has focused on the physician and prescription policies in accordance with opioid use disorder, there has been some attention devoted to community and patient level interventions. This has been seen in the interventions associated with NIDA's Healing Communities Study. Community stakeholders identified area of interest in addressing opioid prescribing through acknowledging progress through providers being engaged in education about prescribing and these providers also helping with solutions to the problem. These interviewees also identified many challenges related to opioid prescribing along with their view of opportunities at the community level for change which includes patient level interventions on safe use and prescribing opioids medications.[46] Future opioid prescribing policy development might be better served through multistakeholder policy development panels which include prescribers and patients.

Our study has limitations characteristic of interview-based studies. This study participants may be subject to recall bias. Our study was temporally located to the timing of the law change however many experiences can alter the perceptions about the effects of the law change. In addition, this study may not be generalizable to other areas secondary to the specific nature of the law passed in WV. We did use a variety of methods to decrease limitations identified. We utilized a variety of techniques to ensure validity and reliability of our results. Our number of interviews (n = 20) enabled both diversity of narrative and theme saturation, while our sampling plan enabled a broad assessment across prescriber specialty, location, and practice type. We triangulated our results with quantitatively measured effects of state-level legislation on prescribing habits as presented in Sedney et al.[15] In addition, we utilized a multidisciplinary team for analysis to limit bias of the interpretation of data. Limitations still include recall bias.

Conclusion

Opioid prescribing among rural physicians is complicated by changing recommendations, socioeconomic disparities that impact pain treatment, intersection of pain and dependence diagnoses, overlapping concerns of diversion, and the lack of available or efficacious alternatives to opioids for pain treatment. Consistent messaging of guidelines and recommendations, efforts to address socioeconomic disparities of health and pain, and improved accessibility for treatment of both pain and dependence in rural communities are important areas of growth as the rural health care environment navigates the opioid crisis. Future legislation surrounding opioid prescribing should include multi-stakeholder input and development allowing for perspectives on policy from prescribers and patient.

To see this article online, please go to: http://jabfm.org/content/35/5/940.full.

References

1. Compton WM, Jones CM. Epidemiology of the U.S. opioid crisis: the importance of the vector. Ann N Y Acad Sci 2019;1451:130–43.
2. Dowell D, Arias E, Kochanek K, et al. Contribution of opioid-involved poisoning to the change in life expectancy in the United States, 2000–2015. JAMA 2017;318:1065–7.
3. White House Council of Economic Advisers. Council of Economic Advisers Report: the underestimated cost of the opioid crisis. Available from: https://www.whitehouse.gov/briefings-statements/cea-report-underestimated-cost-opioid-crisis/. Published 2017. Accessed June 27, 2021.
4. Centers for Disease Control and Prevention (CDC). Changes in Opioid Prescribing Practices. Available from: https://www.cdc.gov/drugoverdose/deaths/prescription/practices.html. Published 2019. Accessed March 26, 2021.
5. Rudd R, Paulozzi L, Baur M, et al. Increases in heroin overdose deaths—28 states, 2010 to 2012. MMWR Morb Mortal Wkly Rep 2014;63:849.
6. O'Donnell JK, Halpin J, Mattson CL, Goldberger BA, Gladden RM. Deaths involving fentanyl, fentanyl analogs, and U-47700—10 states, July–December 2016. MMWR Morb Mortal Wkly Rep 2017;66:1197–202.
7. O'Donnell JK, Gladden RM, Seth P. Trends in deaths involving heroin and synthetic opioids excluding methadone, and law enforcement drug product reports, by census region—United States, 2006–2015. MMWR Morb Mortal Wkly Rep 2017;66:897–903.
8. KFF. Opioid Overdose Death Rates and All Drug Overdose Death Rates per 100,000 Population (Age-Adjusted). Available from: https://www.kff.org/other/state-indicator/opioid-overdose-death-rates/?currentTimeframe=0&sortModel=%7B%22colId%22:%22All Drug Overdose Death Rate (Age-Adjusted)%22,%22sort%22:%22desc%22%7D. Accessed September 20, 2021.
9. Rudd RA, Aleshire N, Zibbell JE, Gladden RM. Increases in drug and opioid overdose deaths—

United States, 2000–2014. MMWR Morb Mortal Wkly Rep 2016;64:1378–82.
10. National Institute on Drug Abuse. West Virginia: Opioid-Involved Deaths and Related Harms. Available from: https://www.drugabuse.gov/drug-topics/opioids/opioid-summaries-by-state/west-virginia-opioid-involved-deaths-related-harms. Published 2020. Accessed August 27, 2021.
11. Centers for Disease Control and Prevention. CDC WONDER. Available from: https://wonder.cdc.gov/. Accessed May 13, 2022.
12. U.S. Department of Health and Human Services. HHS Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-Term Opioid Analgesics. Published 2019. Available from: https://www.hhs.gov/opioids/sites/default/files/2019-10/Dosage_Reduction_Discontinuation.pdf. Accessed August 6, 2021.
13. Dydyk AM, Sizemore DC, Trachsel LA, Conermann T, Porter BR. West Virginia Opioid Prescribing For Chronic Pain While Avoiding Drug Diversion. StatPealrs Publishing; 2021. Available from: https://www.ncbi.nlm.nih.gov/books/NBK563323/.
14. West Virginia Legislature 2018 Regular Session. Enrolled Committee Substitute for Committee Substitute for Senate Bill 273. Available from: http://www.wvlegislature.gov/Bill_Text_HTML/2018_SESSIONS/RS/bills/SB273 SUB2 ENR.pdf. Published 2018. Accessed April 1, 2021.
15. Sedney CL, Khodaverdi M, Pollini R, Dekeseredy P, Wood N, Haggerty T. Assessing the impact of a restrictive opioid prescribing law in West Virginia. Subst Abus Treat Prev Policy 2021;16.
16. Howe KR. Mixed Methods, Mixed Causes? Qual Inq 2011;17.
17. Sandelowski M. Sample size in qualitative research. Res Nurs Health 1995;18:179–83.
18. Lincoln YS, Guba EG. *Naturalistic Inquiry*. Newbury Park, CA: SAGE; 1985.
19. Guest G, Bunce A, Johnson L. How many interviews are enough? An experiment with data saturation and variability. Field Methods 2006;18:59–82.
20. Fusch PI, Ness LR. Are we there yet? Data saturation in qualitative research. TQR 2015;20:1418–6. Available from: https://nsuworks.nova.edu/tqr/vol20/iss9/3/.
21. Cho J, Trent A. Validity in qualitative research revisited. Qual Res 2006;6:319–40.
22. Saldana J. *The Coding Manual for Qualitative Researchers*. 3rd ed. London UK: SAGE; 2016.
23. Carter N, Bryant-Lukosius D, DiCenso A, Blythe J, Neville AJ. The use of triangulation in qualitative research. Oncol Nurs Forum 2014;41:545–7. Available from: http://dx.doi.org/10.1188/14.ONF.545-547.
24. West Virginia Clinical and Translational Science Institute. Project ECHO. Available from: https://www.wvctsi.org/programs/community-engagement-outreach/project-echo/projects/. Accessed September 20, 2021.
25. West Virginia Clinical and Translational Science Institute. Substance Use Disorder. Available from: https://www.wvctsi.org/programs/community-engagement-outreach/project-echo/projects/medication-assisted-treatment/. Accessed September 20, 2021.
26. Dayer LE, Painter JT, McCain K, King J, Cullen J, Foster HR. A recent history of opioid use in the US: Three decades of change. Subst Use Misuse 2019;54:331–3339.
27. Levy N, Sturgess J. "Pain as the fifth vital sign" and dependence on the "numerical pain scale" is being abandoned in the US: Why? Br J Anaesth 2018;120:435–8.
28. Blanco C, Wiley TRA, Lloyd JJ, Lopez MF, Volkow ND. America's opioid crisis: the need for an integrated public health approach. Transl Psychiatry 2020;10:167.
29. Stone EM, Rutkow L, Bicket MC, Barry CL, Alexander GC, McGinty EE. Implementation and enforcement of state opioid prescribing laws. Drug Alcohol Depend 2020;213:108107.
30. Garcia AM. State laws regulating prescribing of controlled substances: balancing the public health problems of chronic pain and prescription painkiller abuse and overdose. J Law Med Ethics 2013;41:42–5.
31. Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain–United States, 2016. JAMA 2016;315:1624–45.
32. Grant AD, Miller MM, Anastas TM, Quinn P, Lok B, Hirsh AT. Opioid-related risk perceptions in chronic pain: influence of patient gender and prior misuse behaviors. Pain 2022;163:711–8.
33. Hirsh AT, Anastas TM, Miller MM, Quinn P, Kroenke K. Patient race and opioid misuse history influence provider risk perceptions for future opioid-related problems. Am Psychol 2020;75:784–95.
34. Bardwell G, Small W, Lavalley J, McNeil R, Kerr T. "People need them or else they're going to take fentanyl and die": A qualitative study examining the 'problem' of prescription opioid diversion during an overdose epidemic. Soc Sci Med 2021;279:113986.
35. Thomas N, van de Ven K, Mulrooney KJD. The impact of rurality on opioid-related harms: A systematic review of qualitative research. Int J Drug Policy 2020;85:102607.
36. Pear VA, Ponicki WR, Gaidus A, et al. Urban-rural variation in the socioeconomic determinants of opioid overdose. Drug Alcohol Depend 2019;195:66–73.
37. Cassidy CM. Chinese medicine users in the United States. Part I: Utilization, satisfaction, medical plurality. J Altern Complement Med 1998;4:17–27.
38. Tindle HA, Davis RB, Phillips RS, Eisenberg DM. Trends in use of complementary and alternative

medicine by US adults: 1997–2002. Altern Ther Health Med 2005;11:42–9.

39. Slat S, Yaganti A, Thomas J, et al. Opioid policy and chronic pain treatment access experiences: A multi-stakeholder qualitative analysis and conceptual model. J Pain Res 2021;14:1161–9.
40. Gersch WD, Delate T, Bergquist KM, Smith K. Clinical effectiveness of an outpatient multidisciplinary chronic pain management telementoring service. Clin J Pain 2021;37:740–6.
41. Cole ES, DiDomenico E, Green S, et al. The who, the what, and the how: A description of strategies and lessons learned to expand access to medications for opioid use disorder in rural America. Subst Abus 2021;42:123–9.
42. Hser Y-I, Ober AJ, Dopp AR , et al. Is telemedicine the answer to rural expansion of medication treatment for opioid use disorder? Early experiences in the feasibility study phase of a National Drug Abuse Treatment Clinical Trials Network Trial. Addict Sci Clin Pract 2021;16(1):24.
43. Brooks EM, Tong S. Implementing office-based opioid treatment models in primary care settings. J Am Board Fam Med 2020;33:512–20.
44. Davis CS, Judd Lieberman A, Hernandez-Delgado H, Suba C. Laws limiting the prescribing or dispensing of opioids for acute pain in the United States: a national systematic legal review. Drug Alcohol Depend 2019;194:166–72.
45. Kroenke K, Alford DP, Argoff C, et al. Challenges with implementing the centers for disease control and prevention opioid guideline: a consensus panel report. Pain Med 2019;20:724–35.
46. Walker DM, Childerhose JE, Chen S, et al. Exploring perspectives on changing opioid prescribing practices: A qualitative study of community stakeholders in the HEALing Communities Study. Drug Alcohol Depend 2022;233:109342.