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INVITED COMMENTARY

Challenges to Treatment of Chronic Pain and Addiction During the "Opioid Crisis"

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Abstract Health care in the USA faces a double challenge, the crisis of chronic pain and the crisis of opioid misuse and overdose. Patients have been prescribed opioids at high doses with unclear indications for long periods of time, putting them at high risk for morbidity and mortality. A significant proportion of these patients have comorbid psychiatric or substance use disorders complicating their pain conditions. The challenges to treating these patients adequately are discussed, along with potential solutions to these issues at the level of the individual provider, healthcare systems, and society.

Keywords Chronic pain · Opioid use disorder · Opioid overdose · Heroin · Opioid crisis · Public health

In an attempt to lessen the burden of chronic pain, opioid prescribing increased dramatically from 2000–2010 in the USA [1]. Opioid use disorders are a serious public health problem, and one that is often complicated by the presence of other substance use disorders, other comorbid psychiatric conditions, and chronic pain issues. According to the Center for Disease Control (CDC), the dramatic increase in opioid consumption has led to the "worst drug overdose epidemic in [US] history" [2]. In 2014, the CDC added opioid overdose prevention to its list of top five public health challenges [3].

Frontline providers such as primary care providers, emergency room physicians, oncologists, surgeons, and dentists are directly involved in making decisions about initiating opioid prescriptions in opioid-naïve patients and providing ongoing prescriptions to patients already taking opioids. This includes prescribing for acute pain that can become de facto long-term prescribing. It also includes intentional long-term prescribing for chronic pain. In a Washington State survey, only a small percentage of providers reported on a survey that they had completely stopped prescribing opioids for chronic non-cancer pain [4].

Long-term effectiveness of opioids is not well-established in non-cancer pain. In a majority of chronic pain conditions, there is no or limited evidence that opioids are effective, yet many medical providers continue to provide them, for various reasons. Primary care providers have frequently been sought out to provide relief to distressed patients. As some primary providers and clinics have declared that they will no longer prescribe opioids at all, or will only prescribe them for cancer pain, the pressure has increased on other providers.

Many patients are "legacy" or "inherited" patients who were prescribed chronic opioids by providers who have since retired or otherwise left practice. Many physicians and other providers were convinced that chronic opioid therapy was safe and not particularly addictive and were not attentive to the many risks associated with this treatment. In some cases, providers or whole clinics have been shut down by the authorities for improper prescribing, leaving hundreds or thousands of patients without a prescriber for their chronic opioid regimens.

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Once opioids have been continued for 90 days or more, studies suggest that they are likely to remain on chronic opioids for years [5]. Patients who are most likely to develop problems with opioids tend to be on opioids longer. They have more difficulty getting off opioids and also managing them responsibly. These patients are more likely to have a history of substance use disorders and mental health disorders such as depression and bipolar disorder. Research supports the theory that depressive illness may promote the initiation and maintenance of chronic opioid therapy [6]. While most patients on opioids for chronic pain describe their pain as severe and debilitating, depressed patients were found in one study to remain on opioids regardless of pain severity. Opioids significantly modulate nervous system affecting the anti-nociceptive and antidepressant pathways. Chronic opioid use causes significant changes in brain regions responsible for mood, impulse control, motivation, and reward [7, 8]. In some conditions such as fibromyalgia and migraine, it is clear that chronic opioid use worsens pain and disability. There is emerging evidence that long-term opioid therapy increases the risk of incident, recurrent, and treatment-resistant depression [9–12].

It is extremely challenging to address pain treatment in patients with coexisting substance use disorders. These patients tend to have lower response rates to pain treatments and high rates of mental health comorbidity, but often lack access to psychiatric care. Specialty care for pain and psychiatric disorders is largely provided in different "silos" with separate staff, locations, and funding streams. Medication-assisted treatment for opioid dependence likewise is often segregated from other forms of pain care and has limited accessibility. Patients must present for treatment of addiction, not pain. Methadone maintenance clinics are mostly urban, far from addicted rural populations. Buprenorphine can be prescribed in clinical practices, but many providers are reluctant to open their practices to addicts, and buprenorphine is often poorly covered by insurance. Patients with complex combinations of medical, psychiatric, pain, and substance use disorders can be very high utilizers of medical care, with needs that cannot be easily met by primary care providers.

This fragmentation of services and complexity of problems makes it difficult to address the opioid epidemic. There is only a small group of pain medicine specialists, many of whom are anesthesia trained and oriented towards injection treatments. There are multiple groups of addiction providers, including addiction psychiatrists, addiction-trained primary care providers, and a variety of other training programs for medical personnel as well as other healthcare providers. But these providers are often not skilled in the treatment of chronic pain. The recent announcement of multispecialty addiction medicine boards through the American Board of Preventive Medicine may help standardize addiction training, but is unlikely to address the shortage of providers and may exacerbate it. In any case, the numbers of both pain and addiction specialists are inadequate to address the demand, and access is far worse in rural areas than in urban ones. In the state of Washington, a large survey showed that while providers in large health plans felt greater comfort with opioid management, almost half of the providers in Spokane, the largest city in the Eastern half of the state, felt they had very poor access to pain specialist consultation [13]. Providers with greater access to this support were less concerned about opioid prescribing and less likely to cease prescribing opioids altogether.

Washington State has developed a comprehensive program to address these issues [4]. A key principle is that prescribers need to be more cautious and aware of the risks when considering opioid medications [2]. This principle was underscored by the state legislature, which passed a law in 2010 mandating adherence to the guidelines and requiring expert pain consultation for patients on more than 120 morphine equivalents a day. This legal change greatly increased awareness among providers. The state has also mandated use of an online prescription drug monitoring program, the EDIE emergency room information system, and rewrote its worker's compensation system to more tightly regulate opioid use. An extensive education program was undertaken, including numerous online and in person CME efforts to promulgate new state guidelines. In order to help providers come up to speed with the new system and understand the new requirements, a Telehealth consultation system has been developed through the University of Washington to improve access to expert opinion among rural providers. Telemedicine is currently under active research as a cost-effective way to enhance service accessibility for management of patients with chronic pain. Harborview Medical Center in Seattle started a pilot program having pain specialists visit clinics and work alongside primary care providers and share their expertise regarding ongoing opioid prescription real-time while seeing patients together. Behavioral specialists can also be extremely helpful to primary care physicians in assessing and managing the risk of opioid misuse and abuse [14]. Other approaches include specialized clinics for managing high-risk opioid patients [15] and shared medical visits which allow providers to treat multiple patients with similar issues of pain and risky opioid use at the same time.

There is evidence that the effort to decrease prescription opioid misuse has prompted patients dependent on prescription opioids to seek illicit prescription opioids to illicit heroin. Some studies have suggested that this is occurring, especially in younger patients [16]. A study in 2009 of needle exchange clients using heroin reported that 39 % of them had started their opioid use disorder with prescription opioids [17]. Heroin is reported to be easy to obtain and many physicians have had the experience of being told by a patient that if they could not get opioids for their pain condition, they would go out and use heroin instead. The evolution of many prescription opioid abusers into heroin addicts may prove to be one of the most significant and lasting consequences of the prescription opioid boom. Patients with chronic pain who are taken off opioids and switch to heroin are typically not seen by pain specialists and may get their care from

primary care doctors, or fragmented care from hospitals, emergency departments, and jails.

It will continue to be the primary care physicians and other frontline physicians that bear the disproportionate burden of providing care for people using opioids, whether for chronic pain or for an opioid use disorder. The cohort of patients exposed to high-dose opioids will occupy the healthcare system for many years to come, so providers in training will need to be educated both on how to help these patients, as well as how to avoid repeating the errors of past generations of providers. Society will need to invest in training primary care providers in the necessary skills as an early and routine part of education, not as an afterthought or optional rotation. Primary care providers need not only the ability to assess pain conditions and diagnose substance use disorders, but also the behavioral health skills to manage the patients' behavior around these issues and to keep them engaged in treatment even when the highly sought after prescriptions are not forthcoming. Specialists in pain and addiction will need to step out of their silos and find ways to support the patient and their primary care provider. And society, including the government and the insurers, will need to recognize these tasks as necessary and find ways to make them economically sustainable. The current system, with its fragmentation, focus on procedural and episodic care, and drive for patient satisfaction, will make this a great challenge.

Compliance with Ethical Standards

Conflict of Interest Daniel Krashin, Natalia Murinova, and Mark Sullivan declare that they have no conflict of interest.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

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