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The Impact of Cannabis Access Laws on Opioid Prescribing

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When healthcare providers first recognized pain as a fifth vital sign and treated it more aggressively, the number of opioid prescriptions quadrupled in the first 15 years of the new millennium. Opioids are used to treat both chronic and acute pain, though their efficacy in treating chronic, noncancer pain is limited. However, as prescription opioid use increased, so did opioid-related mortality, leading to the ongoing opioid crisis. Even though state governments have enacted various policies to curtail opioid prescriptions (e.g., prescription drug monitoring programs), many of these policies simply limit access to opioids and may push individuals already dependent on prescription opioids to more dangerous drugs such as heroin. Thus, policies that reduce opioid prescriptions without leading individuals to substitute more dangerous drugs may be preferable to policies that simply restrict opioid prescriptions.

One policy option that has the potential to reduce opioid prescriptions and opioid-related deaths is the passage of cannabis access laws. These state laws facilitate access to cannabis by removing state legal barriers, though possession of cannabis remains illegal under federal law. Recreational cannabis laws (RCLs) allow adults over 21 to possess and consume a limited amount of cannabis. Medical cannabis laws (MCLs) allow patients with eligible conditions, which are listed in the law and often include some form of intractable pain, to obtain cannabis upon the recommendation or certification of a healthcare provider.

The National Academies of Sciences, Engineering, and Medicine concluded after a comprehensive review of the clinical literature that "[t]here is conclusive . . . evidence that cannabis . . . [is] effective . . . [f]or the treatment of chronic pain in adults," the condition that motivated the initial increase in opioid prescriptions. Similarly, a meta-analysis of the clinical literature found evidence that cannabis effectively treats chronic neuropathic pain and cancer pain. And clinical evidence suggests that cannabis can effectively substitute for opioids in the treatment of pain.

Given the ability of cannabis to substitute for opioids in the treatment of pain and the more moderate side effects associated with cannabis relative to opioids, several studies have examined the potential of RCLs and MCLs to reduce opioid consumption and ameliorate the ongoing opioid crisis. For example, they found that opioid use among Medicare beneficiaries declines by 8.5 percent following the passage of an MCL and that MCLs and RCLs reduce opioid prescribing among Medicaid beneficiaries by 5.9 percent and 6.4 percent, respectively. While these and other studies provide important evidence on the potential of cannabis access laws to reduce opioid use, prior work has generally been limited to examining specific populations (such as Medicaid or Medicare beneficiaries), survey evidence, and outcomes defined at the state level.

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We extended the scope of the results in the existing literature by analyzing a data set of over 1.3 billion individual opioid prescriptions, which represent approximately 90 percent of all prescription opioids filled by outpatient pharmacies over the period we examine. We aggregate these prescription data to the individual-provider level and calculate highly specific measures of opioid prescriptions, including morphine milligram equivalents (MMEs), to examine changes in providers' opioid-prescribing patterns caused by cannabis access laws. Thus, we examine the effect of RCLs and MCLs using more granular information and more specific measures of prescribing behavior than has previously been available. Additionally, because we observe prescriptions at the provider level, we can analyze changes in opioid prescribing across different types of providers while controlling for provider-specific fixed effects. We also explore differences in opioid prescribing by physician specialties.

In general, we find consistent evidence that RCLs and MCLs reduce the use of prescription opioids; these laws reduce the amount of annual MMEs prescribed by individual providers by 6.9 percent and 6.1 percent, respectively. However, our results are not unique to the MME measure of opioid prescriptions, and both types of cannabis access laws similarly reduce the total number of days per opioid prescription, the number of patients to whom providers prescribe opioids, and the probability that a provider prescribes any opioids. Interestingly, although we find evidence that RCLs and MCLs reduce opioid use across a wide array of medical (and other) specialties, the magnitude of this reduction is not uniform across specialties. In terms of practitioners, the five largest physician specialties are slightly more sensitive to RCLs and slightly less sensitive to MCLs. RCLs and MCLs reduce the MMEs prescribed by the five largest specialties by 9 percent and 3.1 percent, respectively. The five specialties that have the highest prescribing rates as measured by MMEs reduce their opioid use by 20.2 percent when an RCL is passed and 7.1 percent when an MCL is passed.

The evidence reported here presents the most accurate picture of the effect of cannabis access laws on prescription opioid use to date; it can therefore inform the ongoing state and national debates over the legality of cannabis as well as other policy options to combat the opioid epidemic. Our analysis of a comprehensive national database on a diverse set of measures of opioid use provides an estimate of the overall net impact of cannabis laws. There has been concern that cannabis may serve as a "gateway" drug and eventually increase the use of opioids, but recent empirical work found no evidence that cocaine and heroin usage increase following the passage of MCLs. While there may be a gateway effect for some individuals, our results take any such offsetting impacts into account. On balance, cannabis access laws reduce overall opioid usage measured by total MMEs, total number of days per opioid prescription, number of opioid patients, and whether the provider prescribes opioids. By analyzing data at the provider level and estimating separate effects by specialty, our results also provide policymakers with information on how to create policies that have the most impact.

NOTE:

This research brief is based on Benjamin McMichael, R. Lawrence Van Horn, and W. Kip Viscusi, "The Impact of Cannabis Access Laws on Opioid Prescribing," University of Alabama Legal Studies Research Paper no. 3266629, January 2019, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3320778.