National Trends in Qualifying Conditions for Medical Cannabis

Pain researcher discusses findings from his latest study: Boehnke KF, et al. Qualifying conditions of medical cannabis license holders in the United States. *Health Aff* (Millwood). 2019;38(2):295-302.

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Using publicly available data from US state registries, my colleagues and I examined national trends of the medical conditions for which people obtain medical cannabis licenses.[1] Our findings from the 20 states with viable data showed that medical cannabis licensure has increased dramatically over the past 10 years, from ~72,000 in 2009 to more than 645,000 in 2016. We then examined how conditions reported in state registries aligned with evidence categories from the 2017 report by the National Academies of Sciences, Engineering, and Medicine on the health effects of cannabis and cannabinoids.[2] In 2016, 84.6% of qualifying conditions listed in state registries (chronic pain, 64.5%, spasticity in multiple sclerosis, 14.1%, chemotherapy-induced nausea and vomiting, 6%) had either substantial or conclusive evidence of the therapeutic value of cannabis per the classifications of this report.[1] However, the majority of conditions for which states allow patients to obtain cannabis licensure (eg, cancer, glaucoma) are not supported by the clinical literature.[1,2]

Barriers to Research Push Policy Out of Alignment With Science

The mismatch between state laws and the scientific literature is heavily influenced by barriers to research imposed by the designation of cannabis as a Schedule I drug. This designation has created regulatory hurdles that not only make interventional research on cannabis' therapeutic benefits incredibly challenging, but also places limitations on funding from traditional academic sources such as the National institutes of Health.[2] Indeed, these obstacles have effectively thwarted or delayed clinical trials on many of the conditions for which the use of cannabis is permitted under state law. Thus, instead of being guided by rigorous science, the impetus for creating new legislation and adding new qualifying conditions for cannabis licensure has been more strongly influenced by the rationale of compassionate use and advocacy from patient groups (eg, veterans with post-traumatic stress disorder [PTSD], individuals with cancer).[3] Such advocacy has enhanced research on the therapeutic use of cannabis and facilitated the successful launch of clinical trials for conditions such as PTSD.[4] While these efforts have been invaluable for moving science forward, the fact that advocacy rather than science can be so effective in changing medical policy exemplifies a key problem with keeping cannabis's Schedule I designation. Additionally, because clinical trials (the gold standard of evidence) take many years to complete, the Schedule I designation for cannabis allows policy to move far ahead of science, at the same time empowering the cannabis industry. Indeed, state regulatory models are patchwork,[5] which may allow companies to make misleading claims about their products while also avoiding appropriate requirements of Good Manufacturing Practices (eg, appropriate testing for potency and contaminants) that may not sufficiently protect consumer safety.

Patchwork Legislation Influences Trends in Licensure

Our results also demonstrate how trends in licensure are affected by patchwork legislation. We found that states with the highest number of patients using medical cannabis (eg,

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Michigan and Colorado) have older, more relaxed laws that do not stringently regulate the cannabis space (eg, state licensing for manufacturing and dispensing, testing and labeling, and bona fide physician–patient relationships).[6] Although some of these states have since enacted more stringent regulations, they accounted for ~94% of patients with medical cannabis licensure, with a high trend toward chronic pain as the qualifying condition (67% of total qualifying conditions in the states with older laws). In contrast, although chronic pain also was the most common qualifying condition for medical cannabis licensure (32%) in registries from states with newer, more stringent laws (eg, Illinois and Minnesota), these states had greater representation of other medical conditions such as multiple sclerosis (27%) and cancer (10%). Because more recently passed medical cannabis legislation typically enforces better regulatory standards, we intend to continue monitoring state registry data to see how these trends change over time.[1]

Chronic pain was the most common qualifying condition for medical cannabis use reported by patients, representing the lowest "hanging fruit" for research priorities and drug development. This finding aligns with the immense societal burden of chronic pain, which affects tens of millions of Americans at a cost of more than $560 billion per year,[7] and may be influenced by several factors. First, chronic pain is a common symptom of many medical conditions, including cancer, and is a qualifying condition for medical cannabis in nearly all states. Therefore, individuals may list chronic pain as a qualifying condition even if they also use cannabis for other purposes. This is reflected in our data, which show a greater number of reported qualifying conditions than licensed patients.

Second, the opioid crisis has brought to light patient dissatisfaction with current treatments for chronic pain, exemplified by spottily effective medications that carry significant burdensome side effects,[8,9] as well as poor availability/accessibility of and insurance coverage for evidence-based nonpharmacologic interventions (eg, acupuncture and, massage).[10-12] As deaths associated with opioid overdose skyrocketed over the past several years, policymakers have scrambled to control and reduce the number of opioid prescriptions. Based on its much safer side-effect profile and no known overdose-related deaths, it is therefore no surprise that many patients have turned to medical cannabis as an alternative treatment for pain management. This finding is corroborated by individual-level studies showing deliberate substitution of cannabis for opioids,[12,13] and also may be fueled by widespread media coverage of cannabis substitution.

Third, because chronic pain is so common and a vague umbrella condition/symptom, individuals who use cannabis for nonmedical purposes may obtain a license for legal protection using chronic pain as a qualifying condition. our study results showed that some of the states wherein recreational cannabis is legal (eg, Oregon) reported reductions in the number of patients on medical cannabis in the years after the opening of recreational cannabis dispensaries. However, the lines between medical and recreational use are blurred. My colleagues and I have shown that patients using medical cannabis often use cannabis for combined medical and recreational purposes,[12,14] and a recent study from Colorado showed that many individuals who purchase cannabis at recreational dispensaries still do use it for medical purposes, such as for sleep disorders and pain management.[15]

Envisioning a Regulatory Structure Based on Scientific Evidence and Historical Knowledge

Given that use of medical cannabis continues to increase, particularly for conditions wherein its use is therapeutically valuable, where do we go from here? I believe we must first develop a sensible regulatory structure for cannabis, one based on scientific evidence and our vast historical knowledge of cannabis, rather than the bigoted biases of the past 80 years that have been the driving force behind cannabis criminalization and censored research.[2,16] This regulatory type of structure should simultaneously acknowledge the known therapeutic value of cannabis and—as is the case with many drugs—its potential for misuse that can result in negative health consequences.

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With this acknowledgement, the Schedule I designation must be changed, as by definition Schedule I drugs have no accepted medical use and a high potential for abuse. Furthermore, there should be regulations throughout the supply chain to enforce compliance with standards to ensure safety and efficacy—ie, transparent and stringent testing to detect contaminants and to ensure potency. Similar to alcohol, products containing cannabis could be restricted to

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adults except under specific circumstances (eg, Epidiolex for Dravet Syndrome and Lennox-Gastaut syndrome).

Within the context of this regulatory overhaul, we could develop a rigorous observational data collection process for individuals using medical cannabis. These data would complement and inform the slower but more rigorous clinical trials.[17] Some states (eg, Florida and Minnesota) have already started this work,[18,19] but many other states prevent access to patient registries—a sensible statute given federal cannabis criminalization. However, if cannabis were rescheduled, the legal ramifications of collecting these data would be reduced, and patients with a medical cannabis license could opt into a patient registry that tracks use patterns, changes in symptoms, products used, changes in other medications, and safety issues. If collected effectively, these naturalistic use data could act as an incredible resource to investigate outcomes of real-world dosing regimens for various reasons (eg, cannabis as a substitute for opioids) and also examine population-level trends for adverse effects. Such a system could draw from the existing FDA's post-marketing drug safety surveillance program for pharmaceutical drugs, as well as state-level prescription drug monitoring programs. Similarly, these data could be used for drug development by aligning cannabis product composition with symptom relief in specific conditions, leading to clinical trials that are more targeted than those in the current scientific literature, which are hampered by unavailable compounds (eg, Sativex in the United States) and dosing regimens unrepresentative of those used by medical cannabis patients.

This kind of change feels idealistic and ambitious–perhaps even unfeasible. However, the pace of new cannabis legislation over the past several years—both medical and adult-use laws—has occurred at a pace previously thought impossible. Furthermore, as the COVID-19 pandemic has ripped through the United States many states have designated cannabis businesses as essential,[20] acknowledging the need to protect patient access to medical cannabis. If these businesses are indeed essential, it is only appropriate that we do our best to ensure that they provide safe, medically sound products. Given that the majority of patients use cannabis for conditions with a solid evidence base, do we not owe them that protection?

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