Testimony in regard to marijuana legalization and regulation

December 3, 2018

Dear Members of the Assembly,

Thank you for the opportunity to be here to today to speak about this important issue. My name is Dr. Julia Arnsten and I am a Professor of Medicine, and Chief of the Division of General Internal Medicine in the Department of Medicine, at Albert Einstein College of Medicine and Montefiore Medical Center in the Bronx, New York. The opinions expressed here are my own, and do not necessarily reflect the views of Montefiore Medical Center or the Albert Einstein College of Medicine.

I am a practicing primary care internal medicine physician with a focus on chronic pain treatment, substance use disorders, and addiction medicine. I am board certified in Internal Medicine and Addiction Medicine. I am also a registered practitioner with the New York State Medical Marijuana Program and every week I see patients for evaluation for medical cannabis. In addition, I am an active clinical researcher, with decades of experience conducting NIH-funded research in the areas of substance use disorders and chronic illness. Specifically, my research has focused on interventions to reduce some of the medical complications and other harms that come from using opioids—by which I mean both illicit opioids such as heroin, and opioid pain

medications. For the remainder of my testimony, I will refer to medical marijuana as medical cannabis, to distinguish it from street marijuana and other illegal drugs.

While marijuana legalization and regulation in New York State have potentially wide-reaching effects in multiple health-related sectors, including the profound public health impacts of incarceration, I am focusing my testimony today on the potential impact of marijuana legalization and regulation on the growing, and increasingly lethal, opioid epidemic. First, I will review the evidence regarding the impact that *medical* cannabis laws, in states that have such laws (currently, as of the most recent election, 33 states) have had on the opioid epidemic. Next, I will discuss early evidence suggesting how broader legalization and regulation of marijuana may impact the opioid epidemic going forward.

In 2014, Dr. Marcus Bachhuber, then a faculty member in our Division at Einstein and Montefiore, authored an important research study, which was titled “Medical cannabis laws and opioid analgesic overdose mortality in the United States from 1999 to 2010.” This article was published in a prestigious medical journal, *the Journal of the American Medical Association Internal Medicine*. The study examined the relationship between *medical* cannabis laws and fatal overdoses from opioid pain relievers, comparing states with medical cannabis laws to states that did not have medical cannabis during the time of the research. The authors were motivated to study this because of experiences hearing from patient after patient who reported using marijuana as a substitute for opioid pain relievers for chronic pain. The authors used death certificate data, which is

compiled by the Centers for Disease Control and Prevention (or the CDC), to look at the rate of prescription pain reliever overdose deaths over a 12 year study period, which was from 1999 to 2010. During this time, overdose deaths increased in all states, but the average yearly rate of opioid pain reliever overdose deaths in states with legal medical cannabis was about 25 percent lower than the average yearly rate of opioid pain reliever deaths in states without legal medical cannabis. In other words, it was found in this study that the availability of medical cannabis may have led to a decrease in fatal opioid pain reliever overdoses. Since this study was published in 2014, these findings have been confirmed in another paper published just this year - 2018 - in the *Journal of Health Economics* by Dr. Powell and colleagues at the RAND Corporation. Dr. Powell and his research group found that state adoption of medical cannabis laws decreased opioid mortality by 21% - a very similar estimate. A key additional finding of Dr. Powell's 2018 study is that the authors were able to demonstrate that the reduction in opioid overdose rates was largely attributable to the presence and accessability of medical cannabis dispensaries.

Even though these two studies I have described looked at state level data trends in an ecological framework, and thus do not allow us to make conclusions about any individual's behavior, I believe these findings strongly support the conclusion that people are choosing medical cannabis over opioid pain medications to treat chronic or severe pain, which is the most common condition reported among people using medical cannabis – in fact, data from the first two years of New York State's program show that nearly 75% of registered patients are seeking medical cannabis to treat severe or

chronic pain. Avoiding opioid medications in favor of medical cannabis lowers the risk of opioid overdose, either because individuals do not progress to opioid use disorder, or because they do not accidentally overdose on the opioids prescribed to them. In either case, the most likely explanation for the finding that opioid overdose deaths are reduced in states with legal medical cannabis is that people are choosing to substitute medical cannabis for opioid pain relievers, and are therefore lowering their risk of both fatal and non-fatal opioid overdose. In addition, fewer opioids available in the community lessens the risk that prescribed opioid medications will be consumed by someone other than the patient.

The hypothesis that medical cannabis allows patients to use fewer opioid and other pain medications has been tested in a set of related studies that examines drug prescribing practices in states with medical cannabis laws. In one study of Medicare beneficiaries, published in the journal *Health Affairs* by Dr. Bradford and colleagues at the University of Georgia, it was found that in states with medical cannabis laws there were fewer prescriptions for a variety of medications for which medical cannabis might serve as an alternative, including many different pain medications, as well as sleep medications, and medications for anxiety. The largest decrease was seen in prescriptions for pain medications, including but not limited to opioid pain relievers. In a similar study of Medicaid beneficiaries by the same team and published in the same journal, findings were similar: medical cannabis laws were associated with lower rates of prescription drugs for pain and other medications, and also with lower overall Medicaid spending.

Adding more specific evidence to the hypothesis that fewer opioids are prescribed in states with medical cannabis laws, two recent studies replicated these findings but focused only on opioid prescribing, not on broader classes of pain relievers or other medications for which medical cannabis might be a substitute. In a very recent article also authored by Dr. Bradford and colleagues and published earlier this year in *the Journal of the American Medical Association Internal Medicine*, medical cannabis laws were shown to be associated with significant reductions in opioid prescribing among Medicare recipients, with prescriptions filled for opioids decreasing by an average of over 2 million daily doses per year when a state instituted a medical cannabis law, and decreasing by an average of over 3 million daily doses per year when a state opened medical cannabis dispensaries. Another recent paper, published by Dr. Liang and colleagues from the University of California at San Diego last month in the journal *Addiction*, demonstrated similarly that medical cannabis legalization was associated with an almost 30% decline in opioid prescribed among Medicaid enrollees. Taken together, these studies demonstrate broadly and convincingly that states with medical cannabis laws have reduced rates of opioid prescribing, supporting the hypothesis that medical cannabis is being used as a substitute for opioids for pain management, and thus has a crucially important role to play in slowing the opioid epidemic.

Finally, two very recent studies have examined how drug prescription rates are affected when a state has legalized both medical cannabis and adult use of marijuana. In an article published in May 2018 in *the Journal of the American Medical Association Internal Medicine*, Dr. Wen and colleagues from the University of Kentucky found that, across the United States, implementation of both medical cannabis and adult use

marijuana laws were associated with a(n almost 6%) reduction on opioid prescribing among Medicaid enrollees. A second study by Dr. Shi from the University of California at San Diego, which will be published next month in the journal *Drug and Alcohol Dependence*, examined associations between recreational marijuana legalization and prescription opioids received by Medicaid enrollees. This is an important and unique study, because it examines the impact of the recreational marijuana market on opioid use, and provides information to answer the question of whether liberalization of marijuana laws may worsen the opioid crisis by encouraging nonmedical marijuana use. This study, which is the first large study to examine this question, found that in states with legal recreational marijuana use, opioid prescriptions were also reduced significantly, in the range of 30%, after legalization. This results of this study argue against the idea that nonmedical use of marijuana might act as a gateway drug to opioids and result in increased opioid misuse.

A final important point regarding adult marijuana use is whether it is related to opioid overdose mortality. This question was examined in a 2017 study by Dr. Livingston and colleagues at the University of North Texas, published in the *American Journal of Public Health.* This study examined trends in opioid overdose mortality in Colorado from 2000 to 2015, which encompassed the year in which Colorado embraced legalization and regulation, 2014. This study found that, after legalization of recreational marijuana in Colorado, there was a slight reduction in the number of opioid-related deaths per month, which represented a *reversal* of the previously upward trend in opioid overdose deaths that Colorado was experiencing. These findings lend additional support to a potential role for marijuana in attenuating our current epidemic of opioid-related deaths.

My own personal experience echoes the findings of these studies. Since early last year, I have been evaluating patients for certification in the New York State medical marijuana program, through a weekly clinic at Montefiore Medical Center that is geared towards primary care patients who are seeking treatment for chronic pain – which is truly the largest group of medical cannabis patients. I have evaluated many patients with chronic pain from multiple etiologies, including spinal crush injuries, peripheral neuropathy from HIV or neurologic disease, cancer, multiple sclerosis, fibromyalgia, inflammatory arthritis, lumbar radiculopathy, sickle cell disease, and numerous other causes. All of these patients have tried many different treatments for pain, including surgery, injections, spinal cord stimulators, nerve blocks, and, in more than half of cases, opioid pain medications. All of these patients would like nothing more than to live pain-free without using any opioid medications – and many have chosen instead to purchase street marijuana, tolerating the risk of using illegal marijuana to avoid the risk of opioid use, which they perceive as much greater. To some of my patients, street marijuana is a safer, more effective way to treat their pain, and they are willing to take the legal risk. The question is, why should they have to take a legal risk to obtain a safe, effective treatment? All of these patients would like nothing more than to live pain-free without using any opioid medications – and many, with the addition of medical cannabis, are achieving that goal. But we need to do better, as too many patients are unable to access medical cannabis.

I now want to say a few words about who is able to access medical cannabis, and who is not. While medical cannabis laws will now allow patients in 33 states to access

medical cannabis to treat medical conditions like pain, as I was talking about before, and also conditions like muscle spasticity, seizures, anxiety, and post-traumatic stress disorder, it is without a doubt that broader decriminalization and regulation would increase the number of people using marijuana to treat symptoms. Currently, obtaining medical cannabis in New York State and other states requires that the individual has a specific qualifying condition, and further that the individual is willing to register their name in a state database. In addition, the individual needs to be evaluated by a practitioner who is registered with the New York State medical marijuana program, and who agrees to provide ongoing care. In the first year that medical cannabis was legal in New York, only 1000 doctors in the entire state became certified to recommend it, and as of May 2018, there were only 1800 registered practitioners in all of NY state. The final – but most significant barrier – is cost. The patients that I see often live on fixed incomes, and often are disabled by pain, unable to work, and living on disability. When I tell these patients the cost of purchasing medical cannabis in New York State, it feels like a tremendous injustice, because my patients usually cannot imagine how they will afford the medication – and I have no way to help them. I could prescribe opioid medications, which patients could obtain in NY at no cost or with a small co-pay – but the cost of medical cannabis is prohibitive, and this is unjust. Of the more than 400 patient I have seen to date in our clinic at Montefiore, less than half have been able to purchase medical cannabis at a licensed dispensary. Because of these challenges, medical cannabis in New York State will find its way to only a small subset of patients who might benefit.

To sum up this first part of our testimony, the available evidence and my own experience suggest that both medical cannabis and legal adult marijuana use are associated with decreased use of prescription pain medications, and also and more strikingly, with decreases in opioid overdose fatalities. I believe that this is due to individuals substituting marijuana for opioid pain relievers. To test this idea, we have recently initiated a large project, with funding from the National Institutes of Health, to study how medical cannabis use affects individual patients' use of opioid and other pain medications. This will be different than the prior studies I have described, as it will follow a specific cohort of patients rather than examining aggregate state-level data. One of the things we are finding as we prepare to launch this study is that that, while the medical community has been willing to embrace cannabis use for conditions such as intractable epilepsy or cancer-associated symptoms, we need to intensify our efforts to educate primary care providers and others who treat chronic pain about medical cannabis. Until we have moved the needle on decriminalization and regulation in New York State, doctors and other practitioners will be the gatekeepers to medical cannabis – and we have to do a better job making to available to patients who need it.

To conclude this testimony, I will move to a discussion to the potential impact of broader marijuana legalization and regulation on the opioid epidemic.

While medical cannabis laws will allow patients in 33 states to access medical cannabis to treat medical conditions, broader decriminalization and regulation would likely increase the number of people using marijuana to treat symptoms. As I described

earlier, currently, obtaining medical marijuana in New York State and other states requires that the individual has a state-specified qualifying condition, registers their name in a state database, and is evaluated by a practitioner registered with the New York State medical marijuana program. Because of these limitations, it is highly likely that medical cannabis laws will only provide expand access to a subset of patients with chronic pain who might benefit.

To further examine this issue, colleagues and I surveyed 1,000 customers at several marijuana dispensaries in Colorado. We specifically *excluded* individuals who were medical cannabis patients. Of 1,000 customers who did not identify as medical cannabis patients, we found that almost two-thirds were using marijuana to treat pain. Even more striking was that, of those who reported taking opioid pain relievers in the past six months, nearly 40% said they had decreased their dose of opioid pain medications, and more than half said they had stopped taking opioid pain relievers completely. These findings suggest that *de facto* use of marijuana to treat pain is common, even among people buying so-called “recreational” or adult use marijuana.

In summary, while legalization and regulation policies are relatively new, available evidence suggests that legalization and regulation will have two immediate and important public health impacts. First, it will further expand access to marijuana for medical patients, and, second, it will decrease use of opioid pain relievers. Based on data from Colorado, there is also evidence to suggest that legalization will reduce opioid overdoses.

Legalization and regulation of marijuana in New York State will undoubtedly have many implications. I have focused my remarks today on the potential for this policy to reduce harms from prescription and illicit opioids, and to expand access for medical patients. While further research is needed from states that have recently enacted legalization policies, there is reason to believe that legalization and regulation of marijuana in New York State will have a favorable impact on the opioid epidemic and on health outcomes.

Thank you so much for listening today

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