Nos. 21-1055 and 21-1323

In the United States Court of Appeals for the First Circuit

No. 21-1055

DR. LYLE E. CRAKER,

Petitioner,

v.

UNITED STATES DRUG ENFORCEMENT ADMINISTRATION, D. CHRISTOPHER EVANS, in his official capacity as Acting Administrator of Drug Enforcement Administration,

Respondents.

No. 21-1323

SCOTTSDALE RESEARCH INSTITUTE,

Petitioner,

v.

US DRUG ENFORCEMENT ADMINISTRATION; D. CHRISTOPHER EVANS, Administrator of Drug Enforcement Administration; MERRICK B. GARLAND, Attorney General,

Respondents.

RECORD APPENDIX

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF ARIZONA
TUCSON DIVISION

SCOTTSDALE RESEARCH INSTITUTE LLC, Plaintiff, v. UNITED STATES DRUG ENFORCEMENT ADMINISTRATION and UNITED STATES DEPARTMENT OF JUSTICE. Defendants.	Case No. ___ **COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF**

INTRODUCTION

1. The Freedom of Information Act ("FOIA") prevents federal agencies from developing "secret law." The public has a right to know what government is doing and how it interprets and applies the law. These protections are especially critical when it comes to public health and safety.

2. On August 12, 2016, the Drug Enforcement Administration ("DEA") reversed a longstanding agency policy related to medical marijuana research. Prior to the August 2016 announcement, DEA had determined that an exclusive supply arrangement with a single marijuana supplier was the best way to fulfill our nation's obligations under an international treaty. The treaty, the Single Convention on Narcotic Drugs of 1961 ("Single Convention"), limits the manufacture and distribution of marijuana for medical or research purposes. In turn, the Controlled Substance Act ("CSA") permits the Attorney General to register applicants to manufacture marijuana only if registration would be "consistent with the public interest and with United States obligations under international treaties."

3. The August 2016 announcement reversing this longstanding policy followed an untenable situation in this country: While scores of Americans use medical marijuana and dozens of states have laws providing for medical marijuana, the federal government insists marijuana has "no currently accepted medical use in treatment in the United States" because the data supporting marijuana's clinical safety and efficacy remains thin. The main culprit is supply. The marijuana required to be used for federally sanctioned research is provided by a single supplier under an exclusive contract with the National Institute for Drug Abuse ("NIDA"). And it is junk, ill-suited for clinical trials, and genetically closer to hemp than the marijuana available from dispensaries and used by Americans nationwide. This marijuana sabotages clinical research and makes it impossible to do rigorous clinical trials with medical marijuana in the United States.

4. Better supply is needed for better research, and better research is needed not only because millions use medical marijuana every day, but also to facilitate informed policymaking at the federal and state levels, including legislation and drug scheduling decisions. At bottom, DEA's August 2016 announcement simply recognized what ought to be beyond dispute: good medical marijuana science isn't generated by sub-par weed.

5. Reflecting a commitment to science and improving the marijuana supply, DEA's 2016 announcement unveiled the "Growers Program." DEA indicated it would increase the number of registered marijuana growers who supply U.S. researchers. The announcement, posted in the Federal Register, explained how the new program would comply with the Single Convention: "DEA believes it would be consistent with the purposes of articles 23 and 28 of the Single Convention for DEA to register marijuana growers outside of the NIDA-contract system to supply researchers, provided the growers agree that they may only distribute marijuana with prior, written approval from DEA."[1]

6. But for three years, the Trump Administration deliberately blocked the Growers Program from moving forward. Relying on an undisclosed and spurious reinterpretation of federal law and United States international treaty obligations by the Department of Justice's Office of Legal Counsel, Defendants appear to contend that implementing the August 2016 Growers Program would violate the Single Convention and federal law, directly contradicting what DEA had announced in the Federal Register just three years earlier.[2] Defendants changed the law on a hotly contested issue of immense public importance—in secret.

7. After years of delay, last Friday morning on March 20, 2020, in the middle of a national health crisis, DEA filed a fifty-two-page document for public inspection noticing the public of DEA's proposed rules to govern the cultivation of marijuana in the United States.[3] The proposed rules were published in the Federal Register two days ago.[4] According to DEA, "[a]fter the publication of the 2016 policy statement, DOJ advised DEA that it must adjust its policies and practices to ensure compliance with the CSA, including the CSA's requirement that registrations be consistent with the Single

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[1] Ex. 1 (81 Fed. Reg. 53,846).

[2] *Contra Citizens for Responsibility & Ethics in Washington v. U.S. Dep't of Justice*, 922 F.3d 480, 483-84 (D.C. Cir. 2019) (OLC's "formal written opinions"—a "particularly important form of controlling legal advice"—are "presumpt[ively]" made public, thereby educating the nation "on some of the weightiest matters in our public life." (quotation marks omitted)).

[3] Ex. 30 (public inspection document for Notice of Proposed Rulemaking).

[4] Ex. 31 (85 Fed. Reg. 16,292).

Convention." The notice then explains how the proposed rules would be consistent with Articles 23 and 28 of the Single Convention.

8. If adopted, these proposed rules would radically overhaul how medical marijuana manufacture and research will proceed in this country.

9. Plaintiff, as a non-commercial company dedicated to advancing the state of medical care through clinical research, is directly harmed by this unlawful secrecy. Because Defendants have failed to fully disclose their re-interpretation of federal law and treaty obligations as the law requires, Plaintiff lacks information necessary to protect its legal rights, including the right to have its application to manufacture marijuana for research processed in compliance with the Administrative Procedure Act and the CSA. Plaintiff suffers other informational injuries as well, such as the ability to fully and meaningfully participate in the notice-and-comment process, which ends on May 22, 2020.[5]

10. While DEA's unlawful and dilatory conduct harms the public generally, the secrecy and delay have been especially harmful to our nations' veterans. Nearly sixty percent of Americans support broad legalization of marijuana, more than ninety percent support medical use, and many rely on medical marijuana where pharmaceuticals have fallen short. Medical marijuana use is particularly prevalent among veterans who struggle with treatment-resistant post-traumatic-stress-disorder ("PTSD") at far higher rates than the rest of the public. We deserve not only to know the scientific truth about medical marijuana use, but candor from our government, which includes disclosure of the "secret law" the agency continues to rely on as a basis to delay and ultimately revamp the process for researching and manufacturing marijuana in this country.

11. Plaintiff brings this FOIA action so can understand the legal basis—if there is one—for the government's conduct surrounding the Growers Program.

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[5] The notice-and-comment process requires federal agencies to issue a notice of proposed rulemaking and allow interested parties an opportunity to comment. *See Perez v. Mortg. Bankers Ass'n*, 575 U.S. 92, 96, (2015). The agency must then consider and respond to significant comments. *Id.* The primary purpose of the APA's notice-and-comment procedures is to give interested parties the opportunity to meaningfully participate in rulemaking and to ensure that the federal agency has before it all relevant information. *Nat. Res. Def. Council v. E.P.A.*, 643 F.3d 311, 321 (D.C. Cir. 2011).

PARTIES

A. Plaintiff Scottsdale Research Institute ("SRI")

12. Plaintiff Scottsdale Research Institute, a non-commercial Arizona limited liability company and clinical trials site located at 5436 E Tapekim Rd., Cave Creek, AZ 85331, is dedicated to advancing the state of medical care through clinical research. Its mission is to conduct high quality, controlled scientific studies to ascertain the general medical safety and efficacy of plant products, including marijuana, to treat pain and PTSD as well as for potential substitution of opioid dependence. Its clinical research is largely funded by grants. To date, it is the only entity federally approved to do clinical research into the effects of marijuana on veterans with treatment-resistant PTSD. SRI does not encourage or sanction recreational marijuana use, but it does support research to determine the applicability of marijuana as medicine.

13. SRI also has a nonprofit 501(c)(3) arm, the SRI Field to Healed Foundation, which shares in its mission and is also dedicated to raising awareness on the difficulties of medical marijuana research in this country.

14. SRI is run by Dr. Sue Sisley. A licensed physician in Arizona, Dr. Sisley has been treating veterans with PTSD in her private practice for over a decade. Dr. Sisley has received many honors and awards for her work, both in private practice and in research. In 2001, for example, she won the UA's Leo B. Hart Humanitarian Award from the University of Arizona College of Medicine. She also received the Arizona Medical Association's highest honor, the President's Distinguished Service Award. Dr. Sisley has received significant support from patient rights organizations and veteran groups around the country, including national veterans organizations. As part of SRI's mission, Dr. Sisley travels across the country and internationally, educating the public on the difficulties of doing medical marijuana research in the United States.

B. Defendant United States Department of Justice ("DOJ")

15. DOJ is an agency of the United States government with control of the records and information Plaintiff seeks.

C. Defendant United States Drug Enforcement Administration ("DEA")

16. DEA is an agency of the United States government with control of the records and information Plaintiff seeks.

JURISDICTION AND VENUE

17. This Court has subject matter jurisdiction under 28 U.S.C. § 1331 and 5 U.S.C. § 552(a)(4)(B).

18. Venue is proper under 5 U.S.C. § 552(a)(4)(B) and 28 U.S.C. § 1391(e). SRI's principal place of business is in the District of Arizona.

FACTUAL BACKGROUND

A. The Controlled Substances Act and the NIDA Monopoly.

19. Scores of Americans use medical marijuana, but our federal government says it has "no currently accepted medical use in treatment in the United States." The contradiction stems from an uncomfortable truth: despite a booming billion-dollar medical marijuana industry, the clinical data supporting the safety and efficacy of medical marijuana is quite thin.

20. The dearth of clinical evidence has a lot to do with legal restrictions and supply. All persons who seek to manufacture or distribute marijuana must register with DEA under the Controlled Substances Act. Because marijuana is a Schedule I substance with "no currently accepted medical use," DEA will grant a registration to grow marijuana only if it is consistent with (1) the public interest and (2) U.S. obligations under the Single Convention on Narcotic Drugs, 1961. 21 U.S.C. § 823(a).

21. For nearly fifty years, the federal government determined that an exclusive arrangement with a single supplier was the best way to fulfill its obligations under the Single Convention. According to DEA, because the demand for research-grade marijuana was relatively limited, one supplier could meet research demands, including demands for clinical research. That sole supplier is the University of Mississippi. So, for the past fifty years, all medical marijuana used in clinical or other types of federally sanctioned research has come from a single farm located at the University of Mississippi operating under an exclusive contract with NIDA. This is the "NIDA Monopoly."

22. The marijuana sent to researchers from the University of Mississippi is junk and sabotages legitimate clinical studies. It looks more like green talcum powder than marijuana:[6]

Samples SRI received had extraneous plant material like sticks and seeds, and many had mold:[7]

A recent manuscript reveals that the marijuana supplied by the University of Mississippi isn't even real medical marijuana: it is genetically closer to *hemp* than the medical marijuana sold at dispensaries nationwide.[8] Little wonder clinical evidence to support the safety and efficacy of medical marijuana use is thin.

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[6] C. Hellerman, "Scientists say the government's only pot farm has moldy samples— and no federal testing standards," PBS (Mar. 8, 2017) (https://www.pbs.org/newshour/nation/scientists-saygovernments-pot-farm-moldy-samples-no-guidelines).

[7] Ex. 2 (Lab Report); See C. Ingraham and T. Chappell, "Government marijuana looks nothing like the real stuff. See for yourself," Washington Post (Mar. 13, 2017) (https://www.washingtonpost.com/news/wonk/wp/2017/03/13/government-marijuana-looks-nothinglike-the-real-stuff-see-for-yourself/?utm_term=.2dcae33401d3/).

[8] Ex. 3, A. Schwabe et al., "Research grade marijuana supplied by the National Institute on Drug Abuse is genetically divergent from commercially available *Cannabis*," bioRxiv preprint (Mar. 28, 2019).

B. SRI's Mission to Study the Safety and Efficacy of Medical Marijuana.

23. This country has an alarming veteran suicide problem. Research from the United States Department of Veterans Affairs shows that nationwide, about 20 veterans a day die by suicide. Between 2007 and 2017, the rate of suicide among veterans jumped ***almost 50 percent***.[9]

24. President Trump himself has acknowledged the emergency. On March 6, 2019, he signed an executive order titled "National Initiative to Empower Veterans and End Veterans Suicide." The order declared, "It is the policy of the United States to end veteran suicide through the development of a comprehensive plan to empower veterans and end suicide through coordinated suicide prevention efforts, prioritized research activities, and strengthened collaboration across the public and private sectors." At the signing ceremony, President Trump called the veteran suicide epidemic "one of the nation's heartbreaking tragedies," a "tragedy of staggering proportion," a "solemn crisis" that requires "urgent national action." He said: "To every veteran I want you to know that you have an entire nation of more than 300 million people behind you, you will never ever be forgotten."[10]

25. Dr. Sisley noticed the issue more than a decade ago. In her private practice, veteran clients returning from the wars in Iraq and Afghanistan reported symptoms of intractable PTSD. PTSD is a mental health condition experienced by some who go through traumatic events particularly prevalent among veterans. Symptoms vary from individual to individual. Common symptoms include anxiety, insomnia, depression, and nightmares. Some turn to suicide. Current pharmaceutical remedies for PTSD are limited. Only two anti-depressants, sertraline (Zoloft) and paroxetine (Paxil), are approved by the Food and Drug Administration ("FDA") to treat PTSD, and they do not always work. Dr. Sisley discovered that many of her veteran clients did not respond to conventional pharmaceuticals, and that

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[9] *See* L. Shane, "New veteran suicide numbers raise concerns among experts hoping for positive news," Military Times (Oct. 9, 2019) (https://www.militarytimes.com/news/pentagon-congress/2019/10/09/new-veteran-suicide-numbers-raise-concerns-among-experts-hoping-for-positive-news/).

[10] *See* A. Mallin, "President Donald Trump orders creation of new task force to prevent veteran suicide," ABC News (Mar. 5, 2019) (https://abcnews.go.com/Politics/president-trump-creating-task-force-prevent-veteran-suicides/story?id=61481048).

for some, marijuana worked better. In many cases, marijuana was the only drug that helped insomnia and eased depression/anxiety.

26. This observation made more than ten years ago is now a common consensus borne out by troves of anecdotal and survey evidence showing widespread reliance and interest in medical marijuana in this country. For example, a 2019 Member Survey from the Iraq and Afghanistan Veterans of America ("IAVA") shows that 20% of its members use medical marijuana or other cannabinoid products as medicine; 75% would be "very interested" in using medical marijuana; over 80% support legalizing medical cannabis; and nearly 90% support researching medical marijuana for medical purposes.[11] A 2017 survey from the American Legion reported similar findings.[12] Of course, non-veterans rely on medical marijuana as well. One in eight respondents identified at least one cancer-related symptom for which they were using cannabis to treat.[13] An article from the American Cancer Society journal puts the number at one in four.[14] It is beyond dispute that medical marijuana shows enormous promise, and yet, the *clinical* research is still remarkably thin.

27. It was this absence of robust scientific evidence coupled with Dr. Sisley's experiences in her private practice that inspired her ten years ago to attempt to collect robust clinical data on the safety and efficacy of medical marijuana use to treat PTSD.[15] It took Dr. Sisley seven years to even get close. In 2009, she began collaborating with the Multidisciplinary Association for Psychedelic Studies ("MAPS") on a proposal for the FDA. On November 11, 2010, MAPS' clinical research team submitted the protocol to the FDA. FDA approval came in April 2011. On July 30, 2012, the protocol was submitted to the University of Arizona Institutional Review Board ("IRB"), which approved the study

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[11] Ex. 4 (IAVA 2019 Member Survey) at 46.

[12] Ex. 5 (American Legion Survey Results).

[13] Ex. 6, K. Martell et al., "Rates of cannabis use in patients with cancer," Canadian Oncology (June 2018).

[14] Ex. 7, S. Perham et al., "Cannabis Use Among Patients at a Comprehensive Cancer Center in a State With Legalized Medicinal and Recreational Use," Cancer (Nov. 15, 2007).

[15] This is discussed in more detail on CNN's "Weed 3: The Marijuana Revolution," an April 19, 2015 special report by CNN's chief medical correspondent Dr. Sanjay Gupta available at https://www.youtube.com/watch?v=d1a7k2RRJJw.

months later. After IRB approval, the proposal was sent to NIDA and the Public Health Service. After a series of rejections, these agencies approved the protocol around March 2014, which allowed the study to purchase federally legal cannabis from NIDA, the sole source of marijuana legal for use in federally regulated research. On November 2, 2015, the protocol was submitted to the DEA. As part of the approval process, the DEA inspected SRI. In April 2016, the DEA approved Dr. Sisley's Schedule I license to do research with cannabis, which is still active. That license removed the last barrier to the study.

28. In early 2019, SRI completed its Phase II clinical trials titled "Placebo-Controlled, Triple-Blind, Randomized Crossover Pilot Study of the Safety and Efficacy of Four Different Potencies of Smoked Marijuana in 76 Veterans with Chronic, Treatment-Resistant Posttraumatic Stress Disorder (PTSD)."

29. The quality of the NIDA marijuana SRI had to use for its clinical trial had an adverse impact on the study results and sometimes on the study subjects. For example, Dr. Sisley noticed that bronchial irritation was a common complaint among the study subjects, a side effect that could have been mitigated if not eliminated had SRI been able to grow and use its own marijuana or simply if SRI could have used marijuana other than that provided by NIDA. The government's marijuana was not only inadequate for the Phase II trial SRI completed, but it will be inadequate for further studies, such as Phase III clinical trials or other Phase II clinical trials. The presence of sticks, stems, and seeds and significant mold problems make this drug unsuitable for clinical research in certain patient populations such as those who are immunocompromised.

C. DEA Announces the Growers Program to Approve Additional Cultivators.

30. Recognizing the serious issues caused by the single supply system—such as those experienced by SRI—on August 12, 2016, DEA enacted a new policy to support the marijuana researchers in this country. This new approach reversed longstanding agency policy that an exclusive supply arrangement with a single supplier of marijuana was the best way to fulfill our nation's obligations under federal law and international treaties.

31. The same day, DEA denied a petition to reschedule cannabis as a Schedule I substance, concluding science had yet to show safety and efficacy. But recognizing growing research demands to

prove it, DEA also committed to improving the supply of marijuana suitable for clinical research. It explained, "the available evidence is not sufficient to determine that marijuana has an accepted medical use" and that "more research is needed into marijuana's effects, including potential medical uses for marijuana and its derivatives."[16] DEA's then Administrator Chuck Rosenberg declared "[r]esearch . . . the bedrock of science," and committed to "support and promote legitimate research regarding marijuana and its constituent parts."[17] Consistent with this declaration, DEA announced a plan to increase the number of entities registered to manufacture marijuana, so that the clinical research could be done in the coming years. It explained it no longer considered the longstanding exclusive arrangement with the University of Mississippi to be the best way to satisfy our nation's obligations under the applicable international drug control treaty, and it concluded that the best way to satisfy the researcher demand was to increase the number of federally authorized marijuana growers. [18]

32. DEA reached this determination after consulting NIDA and the FDA. The new approach would both allow additional marijuana growers to apply to become registered and would comply with U.S. treaty obligations and the CSA, so long as growers agree (1) that they may only distribute marijuana with prior, written approval from DEA and (2) that a registered grower could operate independently if the grower agreed in a written memorandum of agreement with DEA that it would only distribute marijuana with prior, written approval from DEA. Persons who would be registered to grow marijuana to supply researchers were only be authorized to supply DEA-registered researchers whose protocols have been determined by the Department of Health and Human Services ("HHS") to be scientifically meritorious. DEA's August 2016 interpretation of the Single Convention also aligned with that of the Bureau of International Narcotics and Law Enforcement at the State Department, which before the announcement stated that "the Convention does not address the number of cultivation licenses that can be issued":

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[16] Ex. 8 (81 Fed. Reg. 53,767) at 53,768.

[17] *Id.*

[18] Ex. 1 (81 Fed. Reg. 53,846).

> Nothing in the text of the Single Convention, nor in the Commentary, suggests that there is a limitation on the number of licenses that can be issued, nor, on the other hand, is there a prohibition against member states imposing such a limitation. While the language is clear that a government agency (or agencies) is to exercise control over the cultivation of marijuana, this is done through the granting of licenses to cultivators.[19]

33. Shortly after DEA's August 2016 policy statement, SRI applied to manufacture cannabis to support its clinical research.

D. The Trump Administration Sidelines the Growers Program with Silence.

34. Three-and-a-half years later, the Growers Program has barely gotten off the ground. More than thirty entities submitted applications to DEA to grow marijuana for research, but to date, none has been approved or denied. And until August 2019, DEA had not even begun processing them.

35. The delay was unprecedented. DEA claims it takes "4 to 6 months" to process applications to manufacture controlled substances, and it routinely processes applications within this timeframe.[20] The CSA provides numerous concrete statutory deadlines for noticing and processing applications in terms of months, not years, especially when an application relates to clinical trials.[21] Dr. Sisley repeatedly reached out to DEA between 2016 and 2019 to check the status of SRI's application, and every time, the message was the same: no progress and no explanation.

36. This enigmatic delay with respect to an important national program drew bi-monthly requests for information from Congress starting in Spring 2018. On April 12, 2018, former Senator Hatch and Senator Harris asked for an update on applications to manufacture cannabis for research and a commitment to resolve outstanding applications by August 11, 2018.[22] On July 25, 2018, a bipartisan group of eight senators inquired about the status of the applications and requested answers by August 10.[23] On August 30, 2018, a bipartisan group of congressmen wrote to the Secretary of Veterans

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[19] Ex. 9 (Responses to Questions from Senator Gillibrand's Office).

[20] *See* Ex. 10 (April 2016 DEA Presentation) at 32.

[21] *E.g.*, 21 U.S.C. § 823(i) (prescribing periods in terms of days, not years, for decisions to be made).

[22] Ex. 11 (Apr. 12, 2018 Press Release).

[23] Ex. 12 (July 25, 2018 Ltr.).

Administration about the need to conduct "a rigorous clinical trial into the safety and efficacy of medicinal cannabis for veterans with post-traumatic stress disorder (PTSD) and chronic pain so that we can better understand the potential benefits or dangers of medicinal cannabis."[24] On August 31, 2018, another bipartisan group of congressmen urged DEA to end the delay.[25] On September 28, 2018, another bipartisan group of fifteen congressmen expressed concern over DEA's delay.[26] On March 28, 2019, Senators Schatz and Booker urged the Attorney General to move forward.[27] On April 2, 2019, another bipartisan group of six senators questioned DEA's efforts to process applications.[28] And on May 7, 2019, another bipartisan group of thirty congressmen urged the agency to do more "because the matter is of such importance."[29] All were met with silence.

37. While DEA and DOJ responded to none of these letters, across several news stories and between the lines of agency testimony in congressional hearings, the issue revealed itself: to stymie the Growers Program, the administration, using the DOJ's Office of Legal Counsel, secretly adopted an interpretation of the Single Convention and federal law contrary to the view DEA put forward in its August 2016 Policy Statement.

38. An August 2017 Washington Post article entitled "Justice Department at odds with DEA on marijuana research, MS-13" explains, DEA "needed the approval of the DOJ to continue with the program it had announced in August 2016, but that DOJ was not willing to provide it." Thus, DOJ "blocked the DEA from acting on the pending applications to grow marijuana to use in research." Shortly after the Administrator of the DEA Chuck Rosenberg resigned, when asked by the Washington Post if

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[24] Ex. 13 (Aug. 30, 2018 Ltr.).

[25] Ex. 14 (Aug. 31, 2018 Ltr.).

[26] Ex. 15 (Sept. 28, 2018 Ltr.).

[27] Ex. 16 (Mar. 28, 2019 Ltr.).

[28] Ex. 17 (Apr. 2, 2019 Ltr.).

[29] Ex. 18 (May 7, 2019 Ltr.).

he had changed his mind about his prior statements from August 2016, Rosenberg stated he stood by what he had written.[30]

39. In April 2018, Sessions explained the lack of progress in approving or denying applications, pointing the finger at the Single Convention:

> We are moving forward, and we will add—fairly soon, I believe, the paperwork and reviews will be completed, and then we will add additional suppliers of marijuana under the controlled circumstances. But, there is—a lot of people didn't know, I didn't know—a treaty—international treaty of which we are a member, that requires certain controls in that process. ***And the previous proposal violated that treaty.*** We've now gotten language I believe complies with the treaty and will allow this process to go forward.[31]

40. A September 8, 2018 Wall Street Journal article entitled "Marijuana-Research Applications Go Nowhere at Justice Department" explained that the Growers Program was blocked by an opinion from the DOJ's Office of Legal Counsel. While DEA officials believed their push to expand research complied with federal law, "the Trump administration threw the effort into doubt by asking the Justice Department's Office of Legal Counsel to review the policy's legality," and DOJ "concluded it violated a 1961 United Nations treaty that aims to curb drug trafficking." Thus, an opinion from the Office of Legal Counsel ("OLC Opinion") blocked the program.

41. On February 8, 2019, then-Acting Attorney General Whitaker offered a similar vague explanation. Responding to a question, Whitaker again alluded to DOJ's adopted interpretation of the Single Convention:

> For the 3 months that I have been the Acting Attorney General, this is an issue that I have been aware of, and I have actually tried to get the expansion and the applications out. ***We have run into a very complicated matter regarding a treaty that we are trying to work around. We have some international treaty obligations that may not allow the way the marijuana has to be handled from the research facilities to the researchers—or the grow facility to the researchers.*** So it is something that I am very aware of. It is something I am trying to push. Unfortunately, I have 6 days left in this chair at the most. I don't know if I am going to successfully get to it, but I understand the concern and know that we are trying to make it work.

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[30] *See* M. Riggs, "Jeff Sessions Just Made the Chief of the DEA Look Like a Pot Head's Hero," Reason (Sept. 27, 2017) (https://reason.com/2017/09/27/jeff-sessions-just-made-the-head-of-the/).

[31] Ex. 19 (April 25, 2018 Subcomm. Hrg.) at 28.

42. A March 2019 Vox article entitled "People are lining up to grow marijuana for research. Trump's Justice Department won't let them" noted that the problem wasn't DEA—it was DOJ. A former DEA official who worked on the research program indicated DEA was ready to move forward, but that DOJ intervened. DOJ concluded that approving more cannabis researchers could violate international anti-drug treaties, a conclusion the DEA employee called "bullshit." The article explained that this argument "seemed to give Sessions and the Justice Department *the cover they needed internally* to oppose allowing more growers for research."[32]

E. Facing Interminable Delay, SRI Files a Legal Action.

43. After thirty months of utter silence, SRI petitioned the United States Court of Appeals for the District of Columbia Circuit in June 2019 for a writ of mandamus to compel DEA to notice its application to grow cannabis for its clinical trials, which the agency had unlawfully withheld and unreasonably delayed.[33] The court ordered DEA to respond to SRI's petition by August 28, 2019.

44. On August 26, 2019, two days before the deadline to respond in the *In re: Scottsdale Research Institute LLC* action,[34] DEA, its Acting Administrator, DOJ, and the Attorney General went on record in press releases declaring progress with the program, but announcing more delay because DEA needed to promulgate new rules to "conform the program to relevant laws," i.e., the OLC Opinion interpreting Section 823(a) and the Single Convention:

> Before making decisions on these pending applications, DEA intends to propose new regulations that will govern the marijuana growers program for scientific and medical research. The new rules will help ensure DEA can evaluate the applications under the applicable legal standard and ***conform the program to relevant laws***. To ensure transparency and public participation, this process will provide applicants and the general public with an opportunity to comment on the regulations that should govern the program of growing marijuana for scientific and medical research.[35]

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[32] Ex. 20, G. Lopez, "People are lining up to grow marijuana for research. Trump's Justice Department won't let them," Vox Media (Mar. 26, 2019) (emphasis added).

[33] Ex. 21 (*In re: Scottsdale Research Institute LLC*, SRI Amended Petition). SRI incorporates allegations and statements in the petition by reference.

[34] *In re Scottsdale Research Institute LLC*, Case No. 19-1120 (D.C. Cir.).

[35] Ex. 22 (Aug. 26, 2019 Press Release) (emphasis added).

45. The next day, DEA noticed SRI's application and all the other pending applications.[36] In the notice, DEA explained that it had not even begun to review them: "in accordance with the criteria of section 823(a), DEA *anticipates evaluating the applications* and, of those applications that it finds are compliant with relevant laws, regulations, and treaties."[37] Then, it stated that "because the size of the applicant pool is unprecedented in DEA's experience, the Agency has determined that adjustments to its policies and practices with respect to the marihuana growers program are necessary to fairly evaluate the applicants under the 823(a) factors, including 823(a)(1)."[38] DEA also said it needed to promulgate new rules and supersede the 2016 policy statement—a process that will undoubtedly take significant time—because of DOJ's interpretation of the Single Convention and 823(a):

> Over the course of this policy review process, the Department of Justice has also determined that adjustments to DEA's policies and practices related to the marihuana growers program may be necessary. Accordingly, before DEA completes this evaluation and registration process, DEA intends to propose regulations in the near future that would supersede the 2016 policy statement and govern persons seeking to become registered with DEA to grow marihuana as bulk manufacturers, consistent with applicable law.

46. DEA then responded to SRI's petition on August 28, 2019. Its Response did not dispute a single factual or legal point in SRI's Petition, for example, that DEA's delay in processing these application (SRI's in particular) puts public health at risk. Nor did it put forward any legal or factual reason for its delay. SRI's allegation that DEA and DOJ acted illegally went unrebutted. Rather than attempt to justify the delay, DEA argued that because it had published the Notice of Application the day before—the relief SRI had requested—the case was moot.[39]

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[36] Ex. 23 (84 Fed. Reg. 44,920).

[37] *Id.* (emphasis added).

[38] *See id*. As SRI pointed out in a filing in the *In re: Scottsdale Research Institute LLC* action, the reason for the unprecedented number of pending applications was the unprecedented delay. The backlog of 33 noticed-but-not-decided applications was because Defendants did not process a single application for three years.

[39] *See* Ex. 24 at 1-2 (*In re: Scottsdale Research LLC*, DEA Reply). SRI disagrees that DEA provided the relief SRI had requested.

47. The court dismissed the case six weeks later, but invited SRI to return if the agency continued to significantly delay.[40]

F. DEA Publishes the Proposed Rule and Relies on the Secret OLC Opinion.

48. In August 2019, NIDA revised its web page, directing "[q]uestions on the authority to issue additional registrations" to DEA.[41] But inquiries to DEA after its August 2019 announcement continued to be met with silence.

49. For example, on December 6, 2019, a bipartisan group of lawmakers sent a letter to DOJ requesting a policy change to allow researchers to access marijuana from state-legal dispensaries to improve studies on the plant's benefits and risk.[42] The letter requested a response in writing by December 20, 2019. To SRI's knowledge, no response was provided. On December 11, 2019, eight senators sent a letter to HHS, DEA, and Office of National Drug Control Policy, to inquire: "In light of the Drug Enforcement Administration's (DEA) most recent [August] announcement that it will issue additional marijuana manufacturing licenses for research purposes."[43] The letter requested a response by January 10, 2020. To SRI's knowledge, no response was provided.

50. On January 16, 2020, at a hearing entitled "Cannabis Policy For the New Decade," held by the Energy and Commerce Subcommittee on Health, DEA, FDA and NIDA witnesses all agreed that the current supply of cannabis for study purposes is inadequate and that researchers should have access to a wider range of marijuana products. And DEA again confirmed the reason for the delay and abandonment of the Growers Program as outlined in the 2016 policy statement was a secret DOJ interpretation of international treaty obligations adopted by DEA.[44] DEA Senior Policy Advisor Matthew Strait explained:

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[40] Ex. 25 (*In re: Scottsdale Research LLC*, Order Dismissing Case).

[41] *See* Ex. 26, "NIDA's Role in Providing Marijuana for Research," NIDA (Revised Aug. 2019) (https://www.drugabuse.gov/drugs-abuse/marijuana/nidas-role-in-providing-marijuana-research).

[42] Ex. 27 (Dec. 6, 2019 Ltr.).

[43] Ex. 28 (Dec. 11, 2019 Ltr).

[44] *See* https://youtu.be/1-DaR4QEDN8.

> Since publication of the 2016 Policy Statement, the Department of Justice has subsequently engaged in a review of the Policy Statement and the proposed changes, ***and determined*** that adjustments to DEA's policies and procedures may be necessary under applicable U.S. law to be consistent with certain treaty functions. As DEA explained in its August 2019 letter to each of the then-33 pending applicants who sought authority to grow marihuana, given that the size of the applicant pool is unprecedented in DEA's experience, the agency has determined that adjustments to its policies and practices with respect to the marihuana growers program are necessary to fairly evaluate the applicants under the factors outlined in 21 U.S.C. 823(a), including 823(a)(1), which requires that DEA "limit the … bulk manufacture of [Schedule I and II] controlled substances to a number of establishments which can produce an adequate and uninterrupted supply of these substances under adequately competitive conditions for legitimate medical, scientific, research and industrial purposes."[45]

51. Finally, two days ago, on March 23, 2020, DEA published in the Federal Register a notice of proposed rulemaking entitled "Controls to Enhance the Cultivation of Marihuana for Research in the United States."[46] The notice summarizes much of the above:

- how, in 2016, DEA issued a policy statement aimed at expanding the number of manufacturers who could produce marijuana for research purposes, but that subsequent to that policy statement, DOJ "undertook a review of the CSA, including the provisions requiring consistency with obligations under international treaties such as the Single Convention, and determined that certain changes to its 2016 policy were needed";
- how, according to the Defendants, Articles 23 and 28 of the Single Convention contain certain requirements for the supervision, licensing, and distribution of marijuana; and
- that DEA proposes new rules so it can directly take physical possession of cannabis crops, and have the exclusive right to import, export, wholesale trade, and maintain stocks of non-medicinal cannabis, consistent with its legal interpretation of the Single Convention.

52. The public, including Plaintiff, have until May 22, 2020 to submit formal comments on the proposed rules to DEA.

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[45] Ex. 29 (Statement of Matthew Strait (Jan. 15, 2020)) (emphasis added).

[46] Ex. 31 (85 Fed. Reg. 16,292).

53. While the notice explains that "DOJ advised DEA that it must adjust its policies and practices to ensure compliance with the CSA, including the CSA's requirement that registrations be consistent with the Single Convention," it leaves Plaintiff and the public in the dark with respect to several critical considerations, including but not limited to: (1) what DOJ advised DEA to do; (2) which parts of DEA's proposal are supposedly necessary to bring DEA's regulations in line with the CSA's requirement that DEA regulations be consistent with the Single Convention; and (3) which parts of its proposal are supposedly necessary to bring DEA regulations in line with other CSA requirements. The answer to these questions and others presumably lies in the undisclosed OLC Opinion and related records that animated DOJ's decision to sideline the Growers Program and prompted DEA to embark on this notice-and-comment rulemaking in the first place.

54. In sum, using a secret OLC Opinion interpreting the CSA and a 1961 international treaty, DEA delayed processing applications to cultivate marijuana for research and now proposes to radically revamp federal law through rulemaking—rules which will loom large over the future of medical marijuana research, manufacture, and distribution going forward.

CLAIMS FOR RELIEF

55. Congress designed FOIA "to pierce the veil of administrative secrecy and to open agency action to the light of public scrutiny."[47]

56. Corruption, government inefficiency, and mistrust of public institutions all flourish "unless the people are permitted to know what their government is up to."[48] Signing FOIA into law on July 1966, President Johnson declared:

> This legislation springs from one of our most essential principles: A democracy works best when the people have all the information that the security of the Nation permits. No one should be able to pull curtains of secrecy around decisions which can be revealed without injury to the public interest.[49]

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[47] *Dep't of Air Force v. Rose*, 425 U.S. 352, 361 (1976) (quot. omitted)).

[48] *Dep't of Justice v. Reporters Comm. for Freedom of the Press*, 489 U.S. 749, 772-73 (1989) (quot. omitted).

[49] H.R. Rep. 104-795, 8, 1996 U.S.C.C.A.N. 3448, 3451.

57. Thus, FOIA creates "a broad right of access to 'official information'" and is particularly concerned with records that "shed[] light on an agency's performance of its statutory duties."[50] In particular, Congress crafted the affirmative disclosure portions of FOIA, 5 U.S.C. § 552(a)(1) and (2), to prevent the proliferation of "secret law" and to allow individuals "to know what their government is up to."[51]

COUNT ONE
Violation of FOIA – 5 U.S.C. § 552(a)(2)

58. Plaintiff repeats and incorporates by reference each allegation of the prior paragraphs as if fully set forth herein.

59. Defendants have violated and continue to violate 5 U.S.C. § 552(a)(2), which was established to prevent the creation of "secret law." The statute requires federal agencies to make certain agency records "available for public inspection in an electronic format" including "final opinions . . . made in the adjudication of cases," "statements of policy and interpretations which have been adopted" by DOJ and DEA that are not published in the Federal Register, as well as "instructions to staff that affect a member of the public." 5 U.S.C. § 552(a)(2)(A)-(C).

60. To block the Growers Program, DOJ formulated—through the OLC Opinion and related records—and DEA adopted an undisclosed interpretation of the Single Convention and federal law contrary to the view espoused and published by DEA in the August 2016 Policy Statement, and contrary to the view of the State Department.

61. For more than three years, Defendants relied on this undisclosed interpretation, contained in the OLC Opinion and related records, to make an end-run around the Administrative Procedure Act by unlawfully withholding and unreasonably delaying agency action on marijuana cultivation applications. The OLC Opinion has guided DEA's actions—and its inaction. Now, it relies on the same OLC Opinion and related records to propose new rules to revamp how the agency handles marijuana cultivation applications and medical marijuana more generally going forward, and apply those rules

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[50] *Reporters Comm.*, 489 U.S. at 772, 773.

[51] *See id.* at 772 n.20, 773 (emph. and quot. omitted).

retroactively to evaluate applications submitted and paid for long ago. The government's unlawful conduct under FOIA prevents Plaintiff and those similarly situated from timely and effectively vindicating legal rights under the Administrative Procedure Act, effectively rendering its protections and judicial review provisions meaningless.

62. The OLC Opinion and records interpreting 21 U.S.C. § 823(a) and the Single Convention inform DOJ's view of the law, which DEA has adopted, and therefore constitute information that must be made available pursuant to 5 U.S.C. § 552(a)(2)(A)-(C). The OLC Opinion is an opinion that was formulated during the adjudication of Plaintiff's application before the agency, it embodies the DEA's effective law and policy, and has been adopted and followed by DEA and its staff. Therefore, it must be affirmatively disclosed under FOIA regardless of whether a member of the public to file a FOIA request.

63. Despite FOIA's nondiscretionary mandate to affirmatively disclose these records to the public,[52] no records, including the OLC Opinion, are available to the public on DOJ or DEA's website or in any other electronic format.

64. Plaintiff's inability to inspect or understand Defendants' unpublished interpretation of an international treaty and federal law harms Plaintiff in several ways. Because Defendants have failed to disclose their interpretation, Plaintiff lacks information necessary to effectively protect its legal rights, including a right to have its application processed based on proper and reasonable interpretations of the law and without unreasonable delay, as well as a right not to have its application (submitted under the 2016 Growers Program) subjected to retroactive administrative rules that Plaintiff had no knowledge of at the time it crafted its application, submitted it to the agency, and paid the related fees. Defendants' undisclosed interpretation of the Single Convention and 21 U.S.C. § 823(a) is quintessential "secret law," effectively unreviewable, and because of its secrecy, deprives Plaintiff the opportunity to challenge agency action and of its right to due process of law. Plaintiff also lacks the information necessary to fully participate in the notice-and-comment process. Finally, DOJ's undisclosed interpretation of the Single

[52] *See Animal Legal Def. Fund v. United States Dep't of Agric.*, 935 F.3d 858, 869-71 (9th Cir. 2019).

Convention and 21 U.S.C. § 823(a) directly impacts Plaintiff's chances of being approved as a manufacturer of marijuana under 21 U.S.C. § 823(a).

65. Plaintiff is entitled to a preliminary and permanent injunction directing the agency to make available records containing Defendants' interpretation of the Single Convention and 21 U.S.C. § 823(a), including the OLC Opinion, which DEA has adopted and seeks to apply retroactively to Plaintiff and others through its proposed rule.

PRAYER FOR RELIEF

For these reasons, Plaintiffs respectfully prays that the Court grant the following preliminary and permanent relief:

a. Declare that it is unlawful for Defendants to fail to make available records containing Defendants' interpretation of the Single Convention and 21 U.S.C. § 823(a), including the OLC Opinion, which have been adopted by DEA;

b. Order Defendants to make available records containing Defendants' interpretation of the Single Convention and 21 U.S.C. § 823(a), including the OLC Opinion, which have been adopted by DEA;

c. Award Plaintiffs their costs and reasonable attorneys' fees pursuant to FOIA, 5 U.S.C. § 552(a)(4)(E); and

d. Grant such other and further relief as this Court may deem just and proper.

Dated: March 25, 2020

Respectfully submitted,

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(*pro hac vice* pending)
Shane A. Pennington
(*pro hac vice* pending)
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ATTORNEYS FOR PLAINTIFF SCOTTSDALE RESEARCH INSTITUTE, LLC

UNITED STATES DISTRICT COURT
DISTRICT OF ARIZONA

Civil Cover Sheet

This automated JS-44 conforms generally to the manual JS-44 approved by the Judicial Conference of the United States in September 1974. The data is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. The information contained herein neither replaces nor supplements the filing and service of pleadings or other papers as required by law. This form is authorized for use only in the District of Arizona.

The completed cover sheet must be printed directly to PDF and filed as an attachment to the Complaint or Notice of Removal.

Plaintiff(s): **Scottsdale Research Institute, LLC**

County of Residence: Maricopa

County Where Claim For Relief Arose: Maricopa

Defendant(s): **United States Department of Justice**

County of Residence: Outside the State of Arizona

Plaintiff's Atty(s):

Matthew C Zorn
Yetter Coleman LLP
811 Main Street, Suite 4100
Houston, Texas 77002
7136328000

Shane A Pennington
Yetter Coleman LLP
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Houston, Texas 77002
7136328000

Defendant's Atty(s):

II. Basis of Jurisdiction: **2. U.S. Government Defendant**

III. Citizenship of Principal Parties **(Diversity Cases Only)**

Plaintiff:- **4 AZ corp or Principal place of Bus. in AZ**

Defendant:- **5 Non AZ corp and Principal place of Business outside AZ**

IV. Origin : **1. Original Proceeding**

V. Nature of Suit: **895 Freedom of Information Act**

VI.Cause of Action: **This case arises under the Freedom of Information Act, 5 U.S.C. § 552(a). Plaintiff seeks declaratory relief, as well as a preliminary and permanent injunction ordering Defendants to comply with 5 U.S.C. § 552(a)(2).**

VII. Requested in Complaint

Class Action: **No**

Dollar Demand:

Jury Demand: **No**

VIII. This case **is not related** to another case.

Signature: /s/ Matthew C. Zorn

Date: 03/25/2020

If any of this information is incorrect, please go back to the Civil Cover Sheet Input form using the *Back* button in your browser and change it. Once correct, save this form as a PDF and include it as an attachment to your case opening documents.

Revised: 01/2014

Exhibit 1

DEPARTMENT OF JUSTICE

Drug Enforcement Administration

21 CFR Part 1301

[Docket No. DEA–447]

Applications To Become Registered Under the Controlled Substances Act To Manufacture Marijuana To Supply Researchers in the United States

AGENCY: Drug Enforcement Administration, Department of Justice.

ACTION: Policy statement.

SUMMARY: To facilitate research involving marijuana and its chemical constituents, DEA is adopting a new policy that is designed to increase the number of entities registered under the Controlled Substances Act (CSA) to grow (manufacture) marijuana to supply legitimate researchers in the United States. This policy statement explains how DEA will evaluate applications for such registration consistent with the CSA and the obligations of the United States under the applicable international drug control treaty.

DATES: August 12, 2016.

FOR FURTHER INFORMATION CONTACT: Michael J. Lewis, Office of Diversion Control, Drug Enforcement Administration; Mailing Address: 8701 Morrissette Drive, Springfield, Virginia 22152; Telephone: (202) 598–6812.

SUPPLEMENTARY INFORMATION:

Background

Reasons for This Policy Statement

There is growing public interest in exploring the possibility that marijuana or its chemical constituents may be used as potential treatments for certain medical conditions. The Federal Food, Drug and Cosmetic Act requires that before a new drug is allowed to enter the U.S. market, it must be demonstrated through adequate and well-controlled clinical trials to be both safe and effective for its intended uses. Congress long ago established this process, recognizing that it was essential to protect the health and welfare of the American people.

Although no drug product made from marijuana has yet been shown to be safe and effective in such clinical trials, DEA—along with the Food and Drug Administration (FDA) and the National Institutes of Health (NIH)—fully supports expanding research into the potential medical utility of marijuana and its chemical constituents.[1]

There are a variety of factors that influence whether and to what extent such research takes place. Some of the key factors—such as funding—are beyond DEA's control.[2] However, one of the ways DEA can help to facilitate research involving marijuana is to take steps, within the framework of the CSA and U.S. treaty obligations, to increase the lawful supply of marijuana available to researchers.

For nearly 50 years, the United States has relied on a single grower to produce marijuana used in research. This grower operates under a contract with the National Institute on Drug Abuse (NIDA). This longstanding arrangement has historically been considered by the U.S. Government to be the best way to satisfy our nation's obligations under the applicable international drug control treaty, as discussed in more detail below. For most of the nearly 50 years that this single marijuana grower arrangement has been in existence, the demand for research-grade marijuana in the United States was relatively limited—and the single grower was able to meet such limited demand. However, in recent years, there has been greater public interest in expanding marijuana-related research, particularly with regard to certain chemical constituents in the plant known as cannabinoids.

The term ''cannabinoids'' generally refers to those chemicals unique to the cannabis plant (marijuana).[3] To date, more than 100 different cannabinoids have been found in the plant. One such cannabinoid—known as cannabidiol or CBD—has received increased attention in recent years. Although the effects of CBD are not yet fully understood by scientists, and research is ongoing in this area, some studies suggest that CBD may have uses in the treatment of seizures and other neurological disorders. A growing number of researchers have expressed interest in conducting research with extracts of marijuana that have a particular percentage of CBD and other cannabinoids. DEA fully supports research in this area. Based on discussions with NIDA and FDA, DEA has concluded that the best way to satisfy the current researcher demand for a variety of strains of marijuana and cannabinoid extracts is to increase the number of federally authorized marijuana growers. To achieve this result, DEA, in consultation with NIDA and FDA, has developed a new approach to allow additional marijuana growers to apply to become registered with DEA, while upholding U.S. treaty obligations and the CSA. This policy statement explains the new approach, provides details about the process by which potential growers may apply for a DEA registration, and describes the steps they must take to ensure their activity will be carried out in conformity with U.S. treaty obligations and the CSA.

The historical system, under which NIDA relied on one grower to supply marijuana on a contract basis, was designed primarily to supply marijuana for use in federally funded research—not for commercial product development. Thus, under the historical system, there was no clear legal pathway for commercial enterprises to produce marijuana for product development. In contrast, under the new approach explained in this policy statement, persons may become registered with DEA to grow marijuana not only to supply federally funded or other academic researchers, but also for strictly commercial endeavors funded by the private sector and aimed at drug product development. Likewise, under the new approach, should the state of scientific knowledge advance in the future such that a marijuana-derived drug is shown to be safe and effective for medical use, pharmaceutical firms will have a legal means of producing such drugs in the United States—independent of the NIDA contract process.

Legal Considerations

Applicable CSA Provisions

Under the CSA, all persons who seek to manufacture or distribute a controlled substance must apply for a DEA registration. 21 U.S.C. 822(a)(1). Applications by persons seeking to grow

[1] There are two FDA-approved drugs that contain a synthetic form of dronabinol, which is one of the chemicals found in marijuana. These drugs are Marinol (which the FDA approved for the treatment of nausea and vomiting associated with cancer chemotherapy, and for the treatment of anorexia associated with weight loss in patients with AIDS) and Syndros (which was approved for the same indications as Marinol).

[2] Funding may actually be the most important factor in whether research with marijuana (or any other experimental drug) takes place. What appears to have been the greatest spike in marijuana research in the United States occurred shortly after the State of California enacted legislation in 1999 to fund such research. Specifically, in 1999, California enacted a law that established the ''California Marijuana Research Program'' to develop and conduct studies on the potential medical utility of marijuana. Cal. Health & Safety Code § 11362.9. The state legislature appropriated a total of $9 million for the marijuana research studies. Over the next five years, DEA received applications for registration in connection with at least 17 State-sponsored pre-clinical or clinical studies of marijuana (all of which DEA granted). 74 FR 2101, 2105 (2009). However, it appears that once the State stopped funding the research, the studies ended.

[3] An acceptable and broader definition of ''cannabinoids'' includes not only those chemicals unique to the cannabis plant but also their derivatives and transformation products.

marijuana to supply researchers are governed by 21 U.S.C. 823(a); s*ee generally* 76 FR 51403 (2011); 74 FR 2101 (2009). Under section 823(a), for DEA to grant a registration, two conditions must be satisfied: (1) The registration must be consistent with the public interest (based on the enumerated criteria listed in section 823(a)) and (2) the registration must be consistent with U.S. obligations under the Single Convention on Narcotic Drugs, 1961 (Single Convention). An applicant seeking registration under section 823(a) has ''the burden of proving that the requirements for such registration pursuant to [this section] are satisfied.'' 21 CFR 1301.44(a). Although each application for registration that DEA receives will be evaluated individually based on its own merit, some general considerations warrant mention here.

First, while it is DEA's intention to increase the number of registered marijuana growers who will be supplying U.S. researchers, the CSA does not authorize DEA to register an unlimited number of manufacturers. As subsection 823(a)(1) provides, DEA is obligated to register only the number of bulk manufacturers of a given schedule I or II controlled substance that is necessary to ''produce an adequate and uninterrupted supply of these substances under adequately competitive conditions for legitimate medical, scientific, research, and industrial purposes.'' *See* 74 FR at 2127–2130 (discussing meaning of subsection 823(a)(1)). This provision is based on the long-established principle that having fewer registrants of a given controlled substances tends to decrease the likelihood of diversion.

Consistent with subsection 823(a)(1), DEA will evaluate each application it receives to determine whether adding such applicant to the list of registered growers is necessary to provide an adequate and uninterrupted supply of marijuana (including extracts and other derivatives thereof) to researchers in the United States.[4]

Second, as with any application submitted pursuant to section 823(a), in determining whether the proposed registration would be consistent with the public interest, among the factors to be considered are whether the applicant has previous experience handling controlled substances in a lawful manner and whether the applicant has engaged in illegal activity involving controlled substances. In this context, illegal activity includes any activity in violation of the CSA (regardless of whether such activity is permissible under State law) as well as activity in violation of State or local law. While past illegal conduct involving controlled substances does not automatically disqualify an applicant, it may weigh heavily against granting the registration.

Third, given the in-depth nature of the analysis that the CSA requires DEA to conduct in evaluating these applications, applicants should anticipate that, in addition to the information requested in the application itself, they will be asked to submit other information germane to the application in accordance with 21 CFR 1301.15. This will include, among other things, detailed information regarding an applicant's past experience in the manufacture of controlled substances. In addition, applicants will be asked to provide a written explanation of how they believe they would be able to augment the nation's supply of research-grade marijuana within the meaning of subsection 823(a)(1). Applicants may be asked to provide additional written support for their application and other information that DEA deems relevant in evaluating the application under section 823(a).

Treaty Considerations

As stated above, DEA may only issue a registration to grow marijuana to supply researchers if the registration is consistent with U.S. obligations under the Single Convention. Although this policy document will not list all of the applicable requirements of the Single Convention,[5] the following is a summary of some of the key considerations.

Under articles 23 and 28 of the Single Convention, a party (*i.e.,* a country that is a signatory to the treaty) that allows the cultivation of cannabis for lawful uses (*e.g.,* FDA-authorized clinical trials) must:

(a) Designate the areas in which, and the plots of land on which, cultivation of the cannabis plant for the purpose of producing cannabis shall be permitted;

(b) License cultivators authorized to cultivate cannabis;

(c) Specify through such licensing the extent of the land on which the cultivation is permitted;

(d) Purchase and take physical possession of all cannabis crops from all cultivators as soon as possible, but not later than four months after the end of the harvest; and

(e) Have the exclusive right of importing, exporting, wholesale trading and maintaining stocks of cannabis.

As DEA has stated in a prior publication, DEA carries out those functions of article 23, paragraph 2, that are encompassed by the DEA registration system (paragraphs (a) through (c) above), and NIDA carries out those functions relating to purchasing the marijuana and maintaining a monopoly over the wholesale distribution (paragraphs (d) and (e) above).[6] 76 FR at 51409.

As indicated, DEA's historical approach to ensuring compliance with the foregoing treaty requirements was to limit the registration of marijuana growers who supply researchers to those entities that operate under a contract with NIDA. Under this historical approach, the grower could be considered an extension of NIDA and thus all marijuana produced by the grower was effectively owned by NIDA, with NIDA controlling all distribution to researchers.

However, as further indicated, DEA has concluded, based on discussions with NIDA and FDA, that it would be beneficial for research to allow additional marijuana growers outside the NIDA-contract system, provided this could be accomplished in a manner consistent with the CSA and the treaty. Toward this end, DEA took into account the following statement contained in the official commentary to the Single Convention:

> Countries . . . which produce . . . cannabis . . . , [i]n so far as they permit private farmers to cultivate the plants . . . , cannot establish with sufficient exactitude the quantities harvested by individual producers. If they allowed the sale of the crops to private traders, they would not be in a position to ascertain with reasonable exactitude the amounts which enter their controlled trade. The effectiveness of their control régime would thus be considerably weakened. In fact, experience has shown that permitting licensed private traders to purchase the crops results in diversion of large quantities of drugs into illicit channels. . . . [T]he acquisition of the crops and the wholesale and international trade in these agricultural products cannot be entrusted to private traders, but must be undertaken by governmental authorities in the producing countries. Article 23 . . . and article 28 . . . therefore require a government monopoly of the wholesale and international trade in the agricultural product in question in the country which authorizes its production.
>
> Commentary at 278

[4] In making this determination, DEA will consult with NIH and FDA, as warranted.

[5] A detailed explanation of the relevant Single Convention requirements can be found in 74 FR at 2114–2118.

[6] In accordance with the CSA, DEA carries out functions that are indirectly related to those specified in article 23, paragraph 2(e). For example, DEA controls imports and exports of cannabis through the CSA registration and permitting system.

Given the foregoing considerations, DEA believes it would be consistent with the purposes of articles 23 and 28 of the Single Convention for DEA to register marijuana growers outside of the NIDA-contract system to supply researchers, *provided the growers agree that they may only distribute marijuana with prior, written approval from DEA.* In other words, in lieu of requiring the growers to operate under a contract with NIDA, a registered grower will be permitted to operate independently, provided the grower agrees (through a written memorandum of agreement with DEA) that it will only distribute marijuana with prior, written approval from DEA. DEA believes this new approach will succeed in avoiding one of the scenarios the treaty is designed to prevent: Private parties trading in marijuana outside the supervision or direction of the federal government.

Also, consistent with the purposes and structure of the CSA, persons who become registered to grow marijuana to supply researchers will only be authorized to supply DEA-registered researchers whose protocols have been determined by the Department of Health and Human Services (HHS) to be scientifically meritorious. *See* 21 U.S.C. 823(f). In 2015, HHS announced the details of its current policy for evaluating the merits of research protocols involving marijuana. 80 FR 35960 (2015).

Finally, potential applicants should note that any entity granted a registration to manufacture marijuana to supply researchers will be subject to all applicable requirements of the CSA and DEA regulations, including those relating to quotas, record keeping, order forms, security, and diversion control.

How To Apply for a Registration

Persons interested in applying for a registration to become a bulk manufacturer of marijuana to supply legitimate researchers can find instructions and the application form by going to the DEA Office of Diversion Control Web site registration page at *www.deadiversion.usdoj.gov/drugreg/index.html#regapps.* Applicants will need to submit Form 225.

Note Regarding the Nature of This Document

This document is a general statement of DEA policy. While this document reflects how DEA intends to implement the relevant statutory and regulatory provisions, it does not establish a rule that is binding on any member of the public. Any person who applies for a registration to grow marijuana (as with any other applicant for registration under the CSA) is entitled to due process in the consideration of the application by the Agency. To ensure such due process, the CSA provides that, before taking action to deny an application for registration, DEA must serve upon the applicant an order to show cause why the application should not be denied, which shall provide the applicant with an opportunity to request a hearing on the application in accordance with the Administrative Procedure Act. 21 U.S.C. 824(c).

Dated: July 25, 2016.

Chuck Rosenberg,

Acting Administrator.

[FR Doc. 2016–17955 Filed 8–11–16; 8:45 am]

BILLING CODE 4410–09–P

Exhibit 2

MAPS Public Benefit Corporation

Purpose

This document records the secondary testing performed on cannabis provided by the National Institute on Drug Abuse (NIDA) to the MJP-1 protocol investigating four difference kinds of marijuana in 76 veterans suffering from chronic, treatment-resistant posttraumatic stress disorder (PTSD). The study is sponsored by the Multidisciplinary Association for Psychedelic Studies (MAPS) and is funded by the Colorado Department of Public Health (CDPHE). This document will detail the testing performed and justification for using NIDA-supplied cannabis for the MJP-1 clinical trial.

Secondary Cannabis Testing Procedures

MAPS intended to test NIDA cannabis to verify the chemical composition of each concentration of cannabis after receipt as detailed in the study protocol. Prior to receipt at Scottsdale Research Institute (SRI), an MJP-1 clinical site, MAPS had been informed that NIDA cannabis from another batch, stored at refrigerated temperatures at another clinical site (not related to MAPS or the MJP-1 study) had become visibly moldy after two weeks of storage at refrigerated temperatures. The MJP-1 study had originally planned to store packaged cannabis at refrigerated temperatures prior to subject dispensation. Due to this finding, MAPS conducted further testing of Total Yeast and Mold (TYM), dangerous microbes, pesticides and heavy metals to determine the appropriate storage conditions.

Cannabis grown by NIDA contractors was received from Research Triangle International (RTI) at SRI on 25 August 2016. Product was immediately weighed using clean laboratory techniques and stored in the -20ºC freezer. Two Schedule I-licensed analytical laboratories were used to test samples of cannabis. Potency and TYM were tested at Industrial Laboratories in Colorado. TYM, heavy metals (arsenic, cadmium, lead, and mercury), E. coli/coliforms, Salmonella, Gram-negative bacteria, aflatoxins B1, B2, G1, G2, and ochratoxin A, aerobic microbes, pesticides and terpenes were tested at the University of Illinois at Chicago (UIC). Schedule I licenses were reviewed for each laboratory. DEA-222 forms were used to ensure chain of custody for each shipment of cannabis sent to the laboratories.

Release specifications for the cannabis, such as pass/fail or upper limits guidance for impurities, have not been provided by NIDA nor the Food and Drug Administration (FDA). The sponsor assumes this information is kept within the FDA Drug Master File (DMF) that NIDA opened. Despite being a publicly-funded agency, NIDA considers its DMF proprietary information for manufacturers and is not willing to let MAPS or any other researchers using NIDA marijuana review the contents. MAPS seeks release specifications, test results, and documentation from NIDA that further provides characterization of the NIDA supplied product.

After reviewing and analyzing results of secondary testing, the MAPS clinical group met with Investigators as well as Medical Monitors and decided to move forward with the MJP-1 clinical trial with the only product available, NIDA-supplied product. The sponsor has determined the product will not be kept under refrigerated storage based on concerns about mold but will be frozen until distribution to participants and then kept at room temperature by participants. Rationale for this decision is provided within this report. A table of all testing results and dates of testing for the above tests can be found in the following section.

Summary of Findings

Table 1: Key to Test Article, Batch # and Potency

Test Article	Type	Batch #	Potency RTI
1	Low THC/High CBD	13784-1114-18-5	THC 0.53 ± 0.02%/CBD 10.9 ± 1.14%
2	High THC/Low CBD	13784-1107-22	THC 12.3± 1.37%/CBD 0.03 ± 0.01%
3	THC/CBD	13851-0715-139	THC 7.9 ± 0.41%/CBD 8.1 ± 0.56%
4	Low THC/High CBD	13786-1214-26	THC 0.50 ± 0.03%/CBD 11.4 ± 0.68%
5	Placebo	13322-21-3	THC 0.010%/CBD ND
6	Placebo	9022-0598-111-1	THC 0.026%/CBD 0.002%

Potency: Of the six batches tested, only one batch differed significantly from the potency information provided by NIDA. The High THC/Low CBD blend (batch 13784-1107-22) provided from NIDA has shown varying levels of THC potency throughout the testing process, as shown in Table 2. Testing of THC upon arrival at Research Triangle International (RTI) from University of Mississippi was 13.17%. Testing of THC at RTI has varied from 12.6% (Jun/Jul 2015), 10.6% (Dec 2015), 12.3% (Jul 2016) and 13.0% (Nov 2016). Secondary testing at Industrial Laboratories showed THC results of 7.89% (Sep 2016) and 8.07% (Oct 2016).

MAPS explored with NIDA the potential availability of another batch of High THC available in the quantity that would meet the needs of the clinical trial. NIDA informed MAPS that the only other batch they would have that would meet study supply and quantity would have a THC content of around 9%. MAPS decided to use the current batch of High THC/Low CBD (13784-1107-22) as subjects will self-titrate and the amount of cannabis smoked will be collected throughout the study. Clinical results will be reported indicating a range of observed potencies (THC 7.89%-13.17%) for the High THC/Low CBD blend.

Table 2: NIDA Potency Testing Comparison

		University of Mississippi		RTI								Industrial Laboratories			
Test Article	Type	(% Δ^9-THC) upon Receipt	(% CBD) upon Receipt	(% Δ^9-THC) Jun 2015	(% CBD) Jun 2015	(% Δ^9-THC) Dec 2015	(% CBD) Dec 2015	(% Δ^9-THC) Jul 2016	(% CBD) Jul 2016	(% Δ^9-THC) Nov 2016	(% CBD) Nov 2016	(% Δ^9-THC) Sep 2016	(% CBD) Sep 2016	(% Δ^9-THC) Oct 2016	(% CBD) Oct 2016
1	Low THC/High CBD	0.52	13.96	0.47	11.4	0.46	12.7	0.53	10.9	0.58	13.8	0.42	10.76		
2	High THC/Low CBD	13.17	0.05	12.6	0.04	10.6	0.03	12.3	0.03	13.0	0.08	7.89	<LOQ	8.07	0.05
3[1]	THC/CBD			7.7	7.9	8.9	9.3	7.9	8.1	10.8	11.1	7.31	8.43		
4[2]	Low THC/High CBD	0.42	11.13			0.16	11.53	0.50	11.4	0.49	13.2	0.35	10.89		

[1] Blended material (1378A and 1304-1)
Original potencies (UMiss) before blending: barrel 1378A - THC/CBD: 9.13/15.49 barrel 13401-1 - THC/CBD: 13.17/0.05
[2] Received in December 2015

Total Yeast and Mold*:* Both placebo batches tested very low in TYM at every testing time point. The four active batches showed varying levels of TYM at each testing time point. All samples were tested directly from frozen storage and after two days, two weeks and three weeks at refrigerated temperatures on 3M Petrifilm plates at Industrial Laboratories. All active samples tested after refrigerated and frozen storage showed elevated mold levels at Industrial Laboratories when tested on 3M Petrifilm plates. TYM testing was performed again at UIC directly from frozen storage at two separate time points using two different plating methods (Neofilm and 3M Petrifilm Plates). The first TYM testing on Neofilm plates showed low levels of mold. As this did not parallel TYM testing at Industrial Laboratories, TYM testing was performed again at UIC on both Neofilm and 3M Petrifilm plates. The 3M plates showed a range of 23,000-44,000 CFU/g and the Neofilm plates showed a range of 38,000-64,000 CFU/g in the second round of TYM testing at UIC. Tables 3 and 4 on the next page show all TYM results. NIDA noted though they do not currently have specification for levels of TYM in their cannabis product, they believe these levels are within acceptable range for orally consumed botanicals. Based on these results and observations from other teams that refrigeration can lead to mold the sponsor has determined the Cannabis will be stored at frozen temperatures of -20ºC up until just prior to dispensation.

Though many legal medical marijuana states have set varying acceptable levels of TYM, there is no agreement on if TYM should be a required test and there are no release specifications or guidelines in place from NIDA or FDA. Using the NIDA-provided Microbiology Safety Testing of Cannabis Whitepaper as a guide, reviewing test results that showed no harmful microbes, and after consulting with plant experts, the MAPS clinical team concluded that the cannabis is safe for use in this clinical trial. Only physically healthy participants who are not immunocompromised will be enrolled. The protocol will exclude any participant that may have an allergy or a past adverse reaction to marijuana. Potential participants will demonstrate immune system health via routine clinical laboratory testing prior to participation. Each lab result will be reviewed by a physician on the study. If a potential participant presents with abnormal white blood cell counts outside of the normal reference range, the study Medical Monitor will be consulted prior to the inclusion of the subject in the clinical trial. Risk is further limited through the daily limit of smoking no more than 1.8 grams per day for only 21 days per batch, with participants randomized to two different batches during the treatment period.

Cannabis will be stored at frozen temperatures of -20ºC up until just prior to dispensation with storage at room temperature after dispensation. Cannabis dispensation procedures were tested with sample product to ensure that mold would not grow under the revised methodology. To ensure a stable product at room temperature, SRI performed visual mold inspection of the cannabis to test for visible mold growth. Frozen cannabis was placed into the ointment jars that will be used for packaging in the clinical trial. The cannabis and jars were left open for a duration to allow evaporation of any excess moisture that could accumulate due to freezing. The jars were labeled Day One through Day Seven, the tops were screwed on and stored at room temperature. Each day staff opened that day's jar, visually inspected it, took photographs and documented their findings (See Attachment A). On each day the product appeared dry and dehydrated. The color of the product was consistent among days and was documented as yellow, brown, and green in color. No mold was observed on any day. A summary with photographs is in Attachment A.

Revised cannabis dispensation procedures will provide participants with a new supply each week from frozen storage, which will ensure fresh supply with limited likelihood of yeast and mold growth. Participants will be directed to store their study drug in locked boxes at room temperature.

Table 3: Industrial Laboratories: 3M Petrifilm Plate – Total Yeast and Mold Refrigerated and Frozen Testing

Test Article	Type	Mold Secondary Testing Baseline 22 Sep 2016 Refrigerated two days prior to testing	Mold Secondary Testing Two weeks 06 Oct 2016 Refrigerated two weeks	Mold Secondary Testing Three weeks 20 Oct 2016 Refrigerated three weeks	Mold Secondary Testing Directly from 20 Oct 2016 Frozen Storage
1	Low THC/High CBD	110,000 CFU/g	170,000 CFU/g	340,000 CFU/g	58,000 CFU/g
2	High THC/Low CBD	70,000 CFU/g	90,000 CFU/g	24,000 CFU/g	64,000 CFU/g
3	THC/CBD	43,000 CFU/g	90,000 CFU/g	43,000 CFU/g	39,000 CFU/g
4	Low THC/High CBD	42,000 CFU/g	120,000 CFU/g	53,000 CFU/g	37,000 CFU/g
5	Placebo	50 CFU/g	70 CFU/g	<50 CFU/g	<50 CFU/g
6	Placebo	60 CFU/g	30 CFU/g	<50 CFU/g	Not performed

Table 4: University of Illinois at Chicago: 3M Petrifilm and Neofilm Plate – Total Yeast and Mold Frozen Testing

Test Article	Type	Neofilm Directly from Frozen Storage 21 Nov 2016	3m Petrifilm Directly from Frozen Storage 02 Dec 2016	Neofilm Directly from Frozen Storage 02 Dec 2016
1	Low THC/High CBD	Positive Lab calculated 16,400	39,000 CFU/g	43,000 CFU/g
2	High THC/Low CBD	Negative* 25= ~10,000 CFU/g Tested at approximately 4	44,000 CFU/g	64,000 CFU/g
3	THC/CBD	Negative* 25= ~10,000 CFU/g Tested at approximately 18-19	23,000 CFU/g	38,000 CFU/g
4	Low THC/High CBD	Negative* 25= ~10,000 CFU/g Tested at approximately 15	30,000 CFU/g	51,000 CFU/g
5	Placebo	Negative*		
6	Placebo	Negative*		

***Negative= below 10,000 CFU/g**

MAPS Public Benefit Corporation

Microbe testing: All six batches were tested for harmful microbes at UIC. All batches tested negative for harmful microbes.

Mold Related Toxins: All six batches were tested for harmful toxins at UIC. All batches tested negative for harmful toxins.

Pesticide testing: All six batches were tested for pesticides at UIC. All batches tested negative for pesticides.

Table 5: University of Illinois at Chicago: Microbes, Mold Related Toxins, and Pesticide Testing

Test Article	**Type**	**Microbe (E. coli/coliforms, Salmonella, Gram-negative bacteria, aerobic microbes), Aflatoxins B1, B2, G1, G2, and Ochratoxin A and Pesticide Testing**
1	Low THC/High CBD	Pesticide: Negative Microbes: Negative
2	High THC/Low CBD	Pesticide: Negative Microbes: Negative
3	THC/CBD	Pesticide: Negative Microbes: Negative
4	Low THC/High CBD	Pesticide: Negative Microbes: Negative
5	Placebo	Pesticide: Negative Microbes: Negative
6	Placebo	Pesticide: Negative Microbes: Negative

MAPS Public Benefit Corporation

Heavy Metal testing: All six batches were tested for heavy metals. All batches tested negative for arsenic, cadmium and mercury. Both placebo batches tested negative for lead. Three active batches tested positive for low levels of lead ranging from 0.86-1.7 mg/kg. One batch tested at 15 mg/kg. This same batch was retested for lead and results showed 0.70 mg/kg and then 0.69 mg/kg upon a third test**.**

All active batches of NIDA cannabis have tested positive for lead (see Table 6). Though many legal medical marijuana states have varying acceptable levels of lead, there are no release specifications or guidelines in place from NIDA nor FDA. The World Health Organization (WHO) Guidelines for assessing quality of herbal medicines with reference to contaminants and residue suggest an upper limit for lead of 10 mg/kg. Only one batch tested higher than this (15 mg/kg), and it was retested within these limits (0.70 mg/kg). The International Programme on Chemical Safety reports, "The Lead was previously evaluated at the sixteenth meeting of the Joint FAO/WHO Expert Committee on Food Additives (Annex 1, reference 30). The Committee established a provisional tolerable weekly intake of 3 mg of lead/person, equivalent to 0.05 mg/kg body weight for adults." Cannabis will be restricted to allow use of up to 1.8 grams per day for each of two 21-day period of administration with two-week cessation between the two administration periods. The amount of possible lead exposure from NIDA cannabis is well within the guidelines available, and thus is safe for use in this clinical trial.

Table 6: University of Illinois at Chicago: Heavy Metal Testing

Test Article	Type	Heavy Metals 02 Dec 2016 ND= Not Detected		Lead retesting 27 Dec 2016	Lead retesting 13 Jan 2017
1	Low THC/High CBD	Arsenic Cadmium Lead Mercury	ND ND 0.93 mg/kg ND		
2	High THC/Low CBD	Arsenic Cadmium Lead Mercury	ND ND 15 mg/kg ND	0.70 mg/kg	0.69 mg/kg
3	THC/CBD	Arsenic Cadmium Lead Mercury	ND ND 0.86 mg/kg ND		
4	Low THC/High CBD	Arsenic Cadmium Lead Mercury	ND ND 1.7 mg/kg ND		
5	Placebo	Arsenic Cadmium Lead Mercury	ND ND ND ND		
6	Placebo	Arsenic Cadmium Lead Mercury	ND ND ND ND		

Attachment A

Day One:

Visible Mold- None
Color- Yellow, brown and green
Texture- Crunchy
Smell- Musty
Other- Twigs and sticks, lose powder

Day Two:

Visible Mold- None
Color- Yellow, brown, dark brown and green
Texture- Dry
Smell- Musty
Other- Twigs and leaves

Day Three:

Visible Mold- None
Color- Yellow, brown, dark brown and green
Texture- Dry
Smell- Musty
Other- Twigs

Day Four:

Visible Mold- None
Color- Yellow, brown, dark brown and green
Texture- Crunchy
Smell- Musty
Other- Sticks, powdery substance

Day Five:

Visible Mold- None
Color- Yellow, brown, dark brown and green
Texture- Crunchy
Smell- Musty
Other- Powdery dirt substance, sticks

Day Six:

Visible Mold- None
Color- Yellow, brown, dark brown and green (slightly greener)
Texture- Dry
Smell- Musty, stronger cannabis smell
Other- Powdery dirt, sticks, black shell

Day Seven:

Visible Mold- None
Color- Yellow, brown, dark brown and green
Texture- Crunchy
Smell- Musty
Other- Powdery substance, sticks

Exhibit 3

Research grade marijuana supplied by the National Institute on Drug Abuse is genetically divergent from commercially available *Cannabis*

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Abstract

Public comfort with *Cannabis* (marijuana and hemp) has recently increased, resulting in previously strict *Cannabis* regulations now allowing hemp cultivation, medical use, and in some states, recreational consumption. There is a growing interest in the potential medical benefits of the various chemical constituents produced by the *Cannabis* plant. Currently, the University of Mississippi, funded through the National Institutes of Health/National Institute on Drug Abuse (NIH/NIDA), is the sole Drug Enforcement Agency (DEA) licensed facility to cultivate *Cannabis* for research purposes. Hence, most federally funded research where participants consume *Cannabis* for medicinal purposes relies on NIDA-supplied product. Previous research found that cannabinoid levels in research grade marijuana supplied by NIDA did not align with commercially available *Cannabis* from Colorado, Washington and California. Given NIDA chemotypes were misaligned with commercial *Cannabis,* we sought to investigate where NIDA's research grade marijuana falls on the genetic spectrum of *Cannabis* groups. NIDA research grade marijuana was found to genetically group with Hemp samples along with a small subset of commercial drug-type *Cannabis*. A majority of commercially available drug-type *Cannabis* was genetically very distinct from NIDA samples. These results suggest that subjects consuming NIDA research grade marijuana may experience different effects than average consumers.

Introduction

Humans have a long history with *Cannabis sativa* (marijuana and hemp), with evidence of cultivation dating back as far as 10,000 years ago [1]. The World Health Organization proclaims *Cannabis* as the most widely cultivated, trafficked and abused illicit drug, and reports over half of worldwide drug seizures are of *Cannabis* [2]. Phytochemicals of interest in *Cannabis* are

primarily Δ^9-tetrahydrocannabinolic acid (THCA) and cannabidiolic acid (CBDA), both of which require a decarboxylation conversion to the biologically active forms, THC and CBD, respectively. The United States is currently experiencing drastic changes in patterns of *Cannabis* use associated with widespread relaxation of laws that previously limited both medical and recreational marijuana consumption [3] and hemp cultivation. This has led to a need for extensive research into the basic biology and taxonomy of *Cannabis sativa* [4-8], and the possible benefits and threats from *Cannabis* consumption [3,9].

Although *Cannabis sativa* is the only described species in the genus *Cannabis* (Cannabaceae), there are several commonly described subcategories of *Cannabis* that are widely recognized. There are two primary *Cannabis* usage groups, which are well supported by genetic analyses [7,10-12]: ***Hemp*** is defined by a lack of THC (< 0.3% THC in the U.S.), and ***marijuana*** or ***drug-types*** have moderate to high THC concentrations (> 0.3% THC in the U.S.). Hemp-type *Cannabis* tends to have higher concentrations of CBD than drug-types [13]. Drug-type *Cannabis* usually contains > 12% THC and averages ~ 10-23% THC in commercially available dispensaries [14-16]. Within the two major usage groups, *Cannabis* can be further divided into varietals, which are referred to as strains. The drug-type strains are commonly categorized further: ***Sativa*** strains reportedly have uplifting and more psychedelic effects, ***Indica*** strains reportedly have more relaxing and sedative effects, and ***Hybrid*** strains, which result from breeding Sativa and Indica strains, have a spectrum of intermediate effects. There is extensive debate among experts surrounding the appropriate taxonomic treatment of *Cannabis* groups, which is confounded by colloquial usage of these terms versus what researchers suggest is more appropriate nomenclature [5,17-24]. Commercially available drug-type strains for medical or recreational consumption are labeled with a strain name, as well as the levels of THC and often CBD as a

73 percent of the dry weight. Genetic analyses have not shown clear and consistent differentiation
74 among the three commonly described drug-type strains [7,10], but both the recreational and medical
75 *Cannabis* communities maintain there are distinct differences in effects between Sativa and
76 Indica strains [25-27].
77
78 *Cannabis* has been federally controlled since 1937, many states now allow regulated medical (33
79 states and the District of Columbia) and recreational use (10 states and the District of Columbia)
80 [28]. There were > 3.5 million registered medical marijuana patients reported as of May 2018 [29].
81 However, the United States Drug Enforcement Agency (DEA) lists *Cannabis sativa* as a
82 Schedule 1 substance [30], and as such, research on all aspects of this plant has been limited. U.S.
83 Surgeon General Jerome Adams recently expressed concern that the current scheduling in the
84 most restrictive category is inhibiting research on *Cannabis* as a potentially therapeutic plant [31].
85 A Schedule 1 substance is described as a drug with no accepted medical use and a high potential
86 for abuse [30]. The University of Mississippi, funded through the National Institutes of
87 Health/National Institute on Drug Abuse (NIH/NIDA), currently holds the single license issued
88 by the DEA for the cultivation of *Cannabis* for research purposes [32]. As such, NIDA serves as
89 the sole legal provider of *Cannabis* for federally funded medical research in the United States.
90 Bulk research grade marijuana supplied by NIDA is characterized by the level of THC and CBD.
91 They offer *Cannabis* for research with four levels of THC: ***low*** (< 1%), ***medium*** (1-5 %), ***high***
92 (5-10 %) and ***very high*** (>10%), with the additional option of four levels of CBD: ***low*** (< 1%),
93 ***medium*** (1-5%), ***high*** (5-10%) and ***very high*** (> 10%).
94
95 The National Institute on Drug Abuse funds a wide range of research on drug-type *Cannabis*,
96 including long and short-term effects on behavior, pain, mental illness, brain development, use

97 and abuse, and impacts of policy changes related to marijuana [33,34]. Additionally, the NIH
98 provides support for researching cannabinoids as separate constituents. Funding for CBD related
99 research is reported as $36M (2015 - 2017) and projected to be $36M for 2018 - 2019 [35], while
100 cannabinoid related research is reported as $366M from 2015 - 2017 and projected to be $292M
101 for 2018 - 2019 [36].
102
103 Recent research has documented that NIDA-provided *Cannabis* has distinctly different
104 cannabinoid profiles than commercially available *Cannabis* [14]. Specifically, Vergara et al. (2017)
105 found that NIDA samples contained only 27% of the amount of THC and 48% of CBD levels of
106 commercially available *Cannabis*. The substantial chemical differences between NIDA and
107 commercially available *Cannabis* raises significant questions about whether research conducted
108 with federal *Cannabis* is indicative of the experience consumers are having.
109
110 Medical research on *Cannabis* primarily focuses on THC and CBD [3,9,35-40], but there are
111 hundreds of other chemical constituents in *Cannabis* [41], including cannabinoids and terpenes,
112 which have largely been ignored [9]. There is evidence to suggest that chemical constituents in
113 various combinations and abundances work in concert to create the suite of physiological effects
114 reported [9]. The chemical makeup of each variant of *Cannabis* is influenced by the genetic
115 makeup as well as environmental conditions. Given that previous research has determined the
116 cannabinoid levels of research grade marijuana from NIDA is significantly different from
117 commercially available *Cannabis* [14], genetic investigations are warranted to determine if NIDA
118 *Cannabis* is genetical distinct from other sources. In the current study we investigated the genetic
119 relationship of NIDA provided *Cannabis* to commercially available drug-type strains, as well as
120 feral and cultivated hemp. Ten variable nuclear microsatellite regions were used to examine

121 genetic differentiation among our samples. Sampling included NIDA (High THC and High
122 THC/CBD), high THC drug-type, low THC/high CBD drug-type, wild growing hemp (presumed
123 escapees from cultivation), and commercial hemp. This study aimed to investigate where
124 research grade marijuana supplied by NIDA falls on the genetic spectrum of *Cannabis* groups.
125
126 **Results**
127 Our analyses examined the genetic differentiation and structure of samples from six groups
128 (Supplemental Table 1). 1) **NIDA** – research grade marijuana samples obtained from NIDA
129 classified as High THC or High THC/CBD; 2) **Hemp** – *Cannabis* obtained from hemp
130 cultivators and feral collected hemp; 3) **High CBD** – drug-type *Cannabis* with relatively high
131 levels of CBD and low levels of THC; and commercially available drug-type *Cannabis* described
132 as 4) **Sativa**, 5) **Hybrid**, or 6) **Indica** strains. Analyses were also performed on samples at the
133 individual level to control for biases that might arise due to the potential artificial nature of
134 named groups and varying group sample sizes.
135
136 *Genetic Differentiation*
137 Pairwise genetic differentiation (Fst and Nei's D) calculated in GENALEX ver. 6.4.1 (Peakall &
138 Smouse 2006, Peakall & Smouse 2012) found the highest level of divergence between hemp and
139 high CBD drug-type strains (Fst = 0.215) and between hemp and Sativa drug-type strains (Nei's
140 D = 0.614) (Table 1). The least divergence was observed among the drug-type strains (Fst =
141 0.023-0.04; Nei's D = 0.066-0.109).
142
143
144

Table 1. Pairwise Fst values (below the diagonal) and Nei's D (above the diagonal) for major *Cannabis* groups.

	NIDA	Hemp	High CBD	Sativa	Hybrid	Indica
NIDA		0.519	0.527	0.553	0.480	0.441
Hemp	0.120		0.489	0.614	0.585	0.459
High CBD	0.166	0.215		0.329	0.310	0.281
Sativa	0.114	0.160	0.137		0.098	0.109
Hybrid	0.117	0.149	0.135	0.040		0.066
Indica	0.078	0.124	0.121	0.035	0.023	

Clustering Analysis

Principal Coordinate Analysis (PCoA) was conducted in GENALEX and plotted in R Studio with the ggplot package [42] with 95% confidence interval ellipses around the major groups (Figure 1). No confidence intervals were drawn for NIDA (n = 2) or High CBD (n = 3) due to small sample size. Coordinate 1 explains 13.26% of the genetic variation and an additional 11.39% of the genetic variation is explained by coordinate 2. The drug-type strains (Indica, Sativa, Hybrid, and High CBD) all occupy the same character space. There is clear separation of hemp samples from the drug-types, with NIDA samples clustering within the hemp confidence interval.

PC-Ord version 6 [43] was used to generate a dendrogram with Ward's method and Euclidean Genetic distance parameters based on pairwise genetic distance values generated in GENALEX (Figure 2). The initial branching split the samples into two clusters, A and B. Cluster A contains all but one hemp sample (88%), as well as the NIDA samples (100%) and two drug-type samples (5%). Cluster B contains the remaining drug-type samples (95%) and one hemp sample (12%).

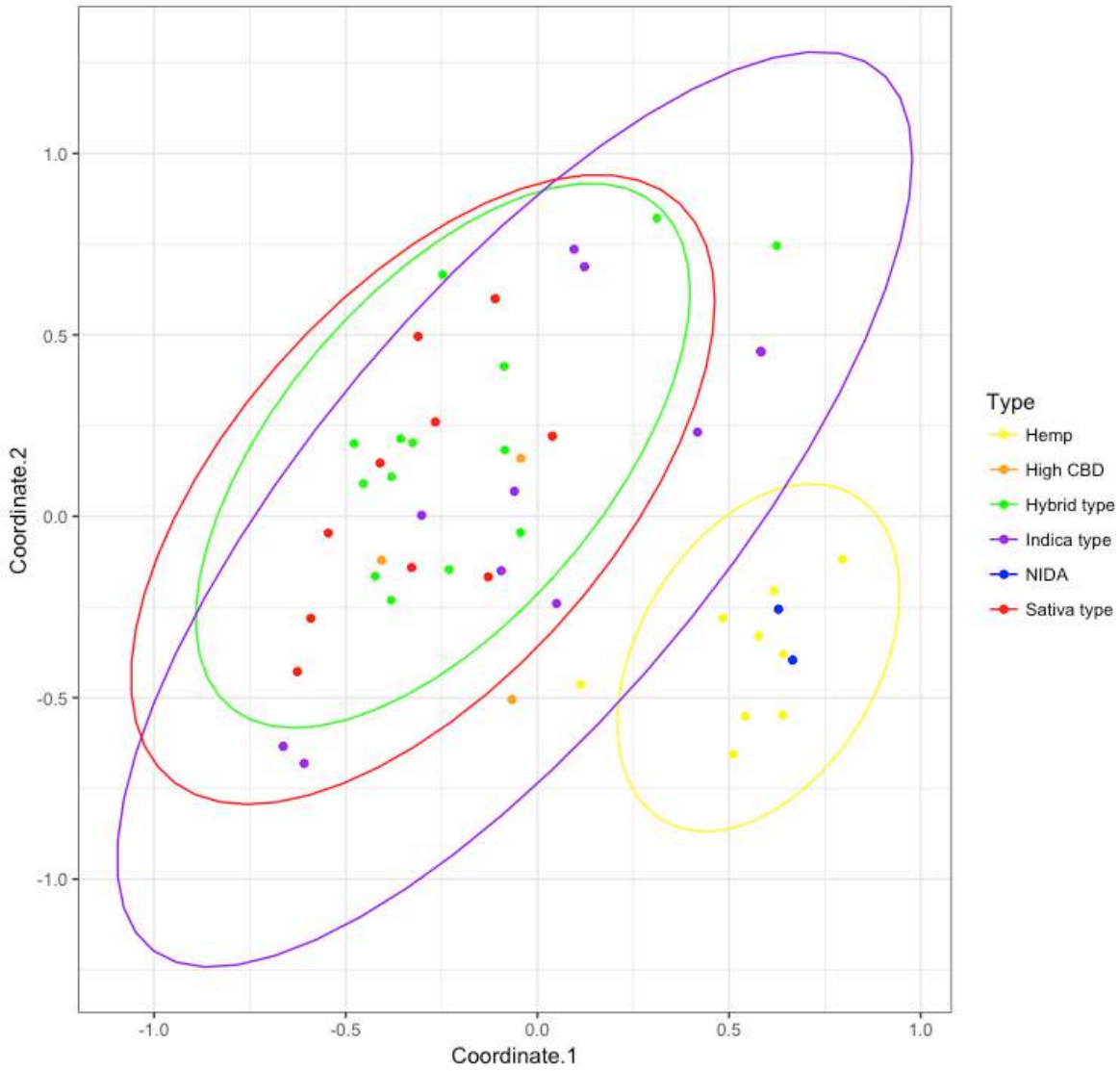
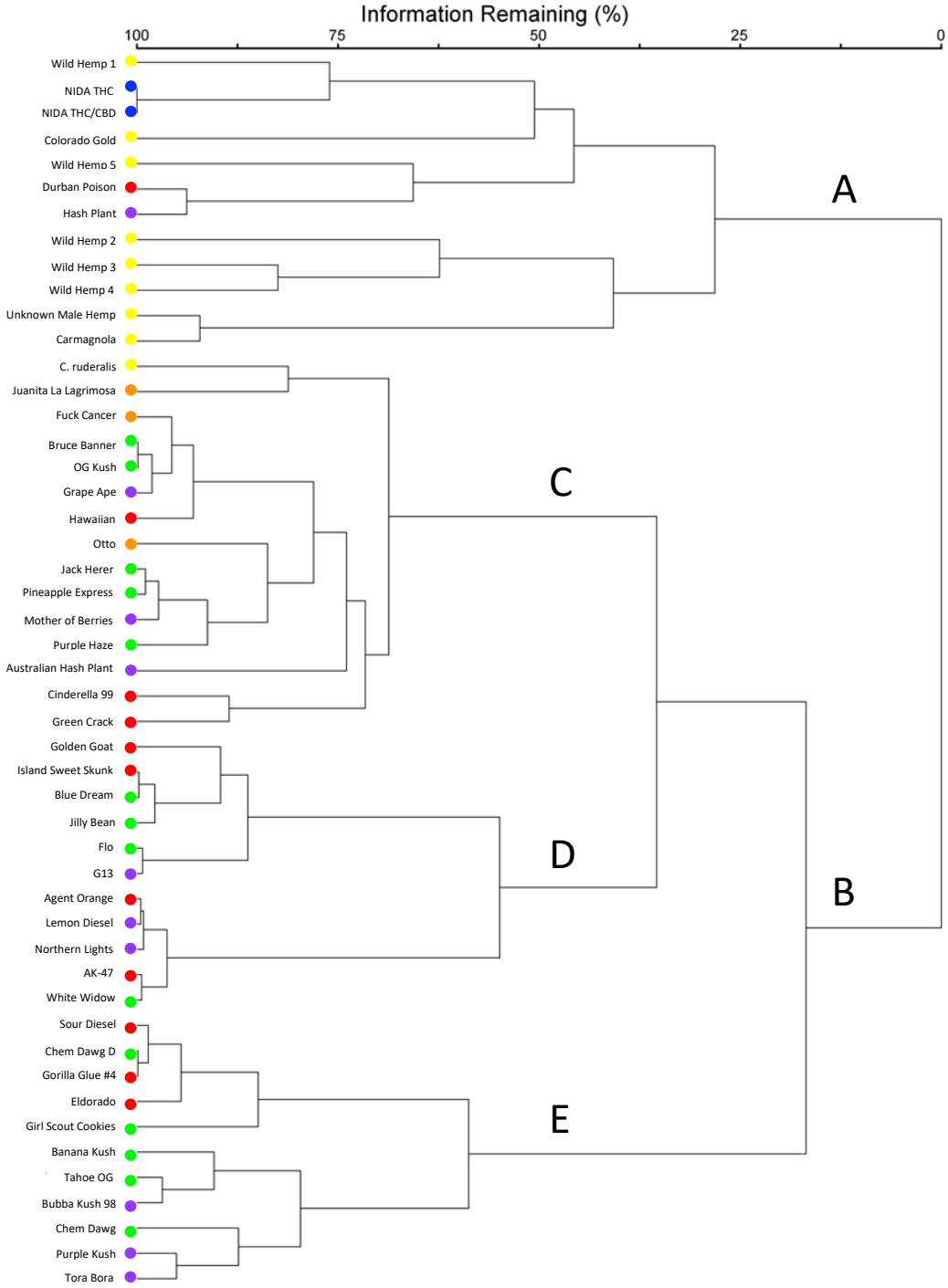


Figure 1: Principal Coordinates Analysis with 95% confidence intervals around the major groups (hemp = yellow, NIDA = blue, High CBD = orange, Sativa = red, Hybrid = green, Indica = purple). Approximately 25% of the genetic variation in these groups is shown (coordinate 1= 13.26% and coordinate 2 = 11.39%). No confidence intervals were drawn for NIDA or High CBD samples due to the small sample size (n = 2 and n = 3, respectively).



169

170 **Figure 2**: PC-Ord group linkage dendrogram. Samples are color-coded (Hemp = yellow, NIDA = blue,
171 High CBD = orange, Sativa = red, Hybrid = green, Indica = purple). Cluster B further branches into
172 three clusters (C, D, and E), where Sativa, Hybrid and Indica drug type strains are dispersed
173 throughout.

174 STRUCTURE ver. 2.4.2 [44] was used to examine sample assignment to genetic groups while
175 allowing admixture. The appropriate number of STRUCTURE groups was validated using
176 STRUCTURE HARVESTER [45], which had high support for two genetic groups (K = 2, ΔK =
177 67.68) and weak support for three genetic groups (K = 2, ΔK = 4.48) (Supplemental Figure 1).
178 Additionally, MavericK 1.0.5 [46] was used to independently test group assignments, which also
179 had strong support for two genetic groups (K = 2, probability 0.901) and weaker support for
180 three genetic groups (K = 3, probability 0.097) (Supplemental Figure 2), with the sample
181 assignments matching STRUCTURE (Supplemental Figure 3). The two genetic group
182 STRUCTURE analyses (Figure 3) show consistent differentiation between hemp and drug-type
183 strains. All hemp samples were assigned to genetic group 1 (yellow) with a proportion of
184 inferred ancestry (Q) greater than 0.82 (hemp mean group 1, Q = 0.94). Drug-type samples
185 showed some admixture with the majority of the genetic signal of 31 samples (82%) being
186 assigned to genetic group 2 (green; drug-type mean group 2, Q = 0.72). NIDA samples were
187 assigned to genetic group 1 (NIDA mean group 1, Q = 0.97), demonstrating a strong association
188 with hemp. Although not strongly supported, the three genetic group analysis shows some
189 additional genetic structure among drug-type strains.
190

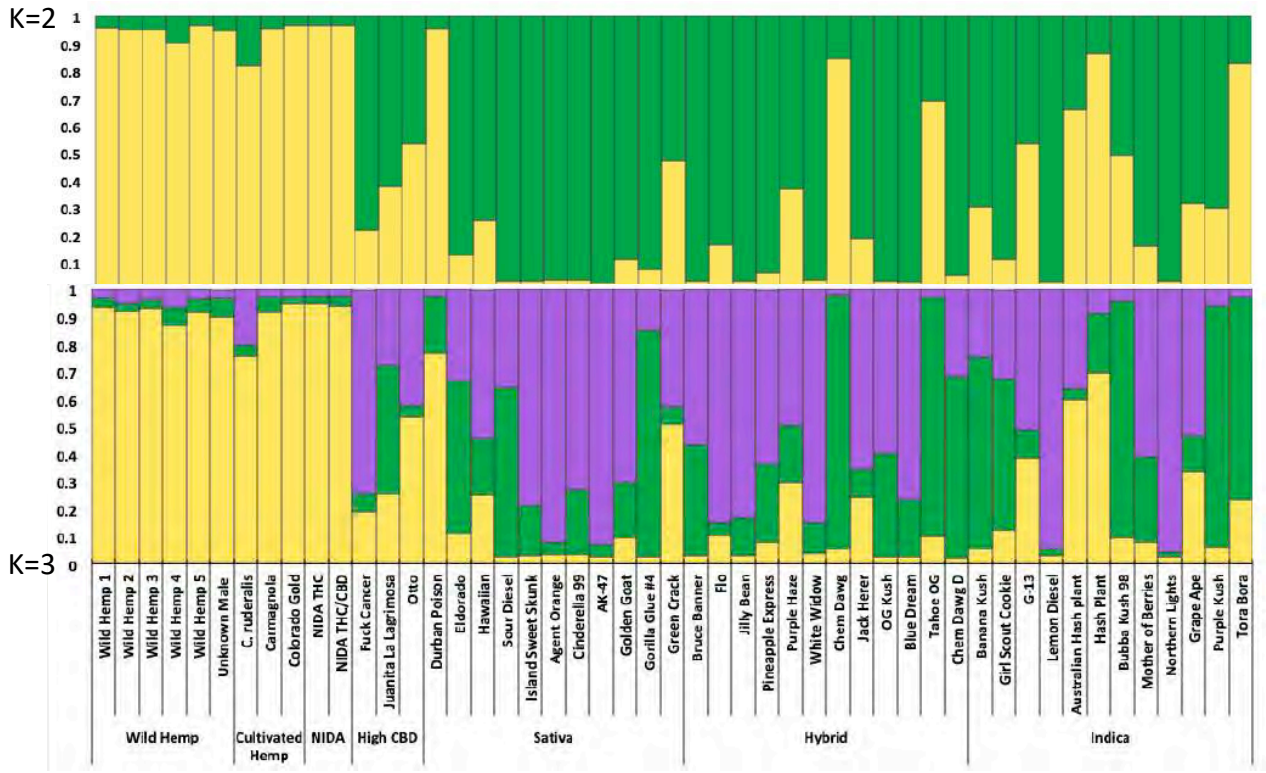


Figure 3: Bayesian clustering analysis from STRUCTURE with the proportion of inferred ancestry for two genetic groups (K = 2, top), and for three genetic groups (K = 3, bottom). Each individual is represented as a single bar in the graph.

EDENetwork ver. 2.18 [47] was used to generate a web of genetic relationship based on pairwise linkages (Figure 4). The automatically selected percolation threshold was 8.1 (Figure 4A), although not all individuals were connected at this level. The threshold was raised iteratively to connect more divergent samples and explore larger patterns of genetic relationships. The two NIDA samples were united at a threshold of 8.5 (Figure 4B). When the threshold was raised to 13.7 (Figure 4C) the NIDA samples became connected to the network via the drug-type sample Eldorado. At a threshold level of 16.9 (Figure 4D) all samples in the dataset are included in the relationship network.

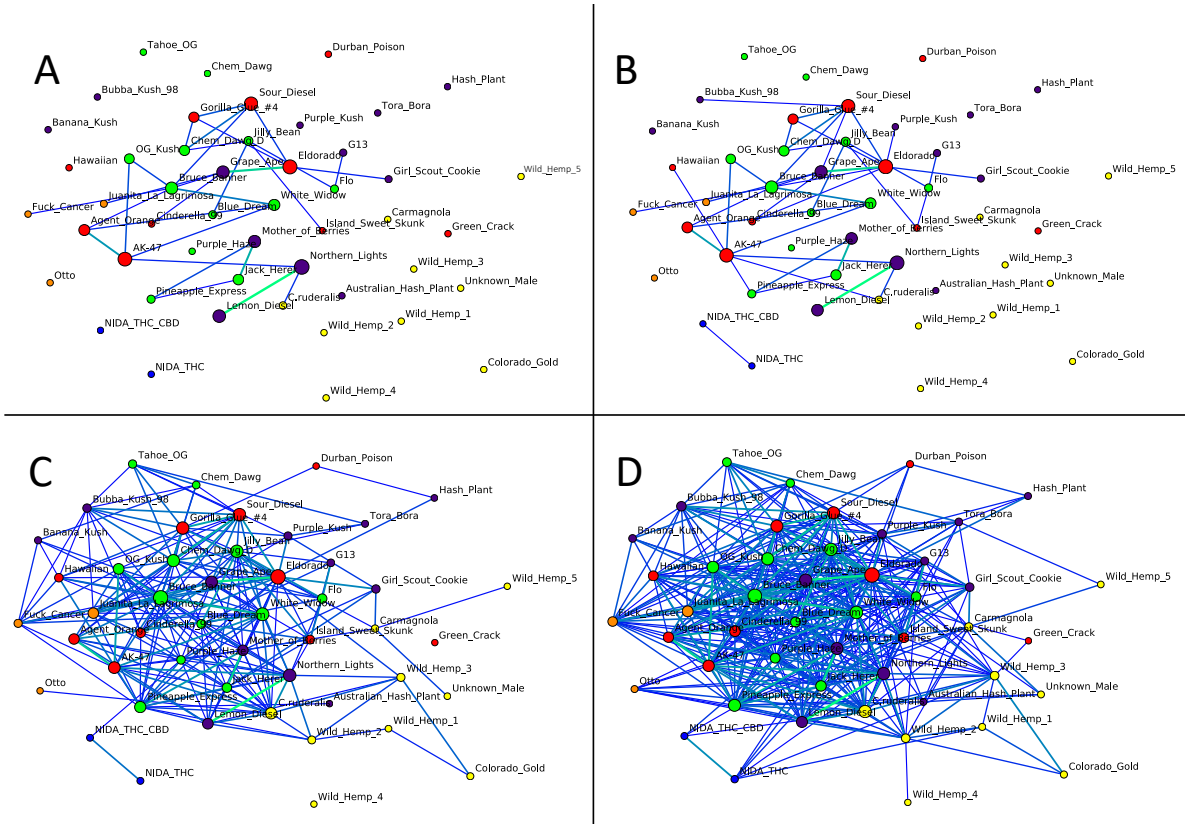


Figure 4: EDENetworks genetic relationship network with incrementally decreasing stringency of required genetic relatedness among samples in the data set. (A) Threshold 8.1: the percolation threshold determined by the analysis. (B) Threshold 8.5: the threshold required to connect NIDA samples to each other, but not to any other samples in the dataset. (C) Threshold 13.7: the threshold necessary to connect the NIDA sample to the larger network with the connection via the drug-type strain Eldorado. (D) Threshold 16.9: the required threshold to connect all samples in the network. Nodes are colored to indicate group designation (Hemp = yellow, NIDA = blue, High CBD = orange, Sativa = red, Hybrid = green, Indica = purple). Node size is proportionate to the number of connections to that individual within the network. Lines thinner and lighter in color indicate weak genetic relationships, while thicker darker lines indicate stronger relationships.

Discussion

The purpose of this study was to examine the genetic relationship of *Cannabis* samples from the National Institute on Drug Abuse (NIDA) to hemp and drug-type samples. Our results clearly demonstrate that NIDA *Cannabis* samples are substantially different from most commercially available drug-type strains, sharing a genetic affinity with hemp samples in most analyses. Previous research has found that medical and recreational *Cannabis* from California, Colorado,

and Washington differs significantly in cannabinoid levels from the research grade marijuana supplied by NIDA [14]. Our genetic investigation adds to this previous research, indicating that the genetic makeup of NIDA *Cannabis* is also distinctive from commercially available medical and recreational *Cannabis.*

The genetic data collected in this study indicate that two major genetic groups exist within *Cannabis sativa*. The first group contained a majority of hemp (88 - 100%, depending on analysis) and both NIDA samples (100%), while the second group contained a majority of drug-type samples (82 - 95%). These results contribute to the growing consensus that hemp and drug-type *Cannabis* can be consistently differentiated [7,10-12,48-51]. To our knowledge, this is the first genetic study to include research grade marijuana from NIDA, and its placement with hemp samples was unexpected. However, it is important to note that some drug-type samples (e.g. Durban Poison, Figure 2 & 3) are also placed in the hemp group. Although the sample size of NIDA samples could impact their placement in group-based analyses such as genetic distances (Table 1), all other analyses were carried out at an individual level (Figures 1 - 4) to avoid this issue.

According to the University of Mississippi National Center for Natural Products Research (NCNPR), which produces research grade marijuana for NIDA, the first experimental plots of *Cannabis* were planted in 1968 with seeds from "Mexico, Panama, Southeast Asia, Korea, India, Afghanistan, Iran, Pakistan, and Lebanon" [52,53]. Over the next decade, cultivation techniques were standardized, with over 100 varieties planted in 1976 [52]. Between the late 1970's and today, the University of Mississippi has continued to be the sole producer of research grade marijuana for NIDA, and it has refined cultivation techniques and extraction procedures, particularly for

THC and CBD [54]. The program does not provide variety or strain information when filling *Cannabis* orders, so it is unclear what is currently grown by NCNPR for federally funded marijuana research. The NCNPR director recently stated that "The marijuana project currently stocks 27 plant varieties with different cannabinoid profiles, various CBG potencies, and a wide range of THC levels" [53]. However, the NCNPR website states that only three *Cannabis* varieties were grown in 2014 [52]. Our data suggest that the NIDA *Cannabis* analyzed in this study was sourced from a single strain or two very closely related strains within the NCNPR stock. Without additional information about NCNPR *Cannabis* production, it is difficult to know how many strains are being used in research.

This study indicates the need for additional research and refinement of our understanding of *Cannabis* genetic structure and how those differences might impact *Cannabis* consumers. Although medicinal research on *Cannabis* has predominantly focused on THC and CBD [3,9,35-40], it is becoming apparent that other chemical constituents in various combinations and abundances likely have important effects [9]. If researchers are solely interested in the effects of THC and CBD at known concentrations, then NIDA *Cannabis* could serve as a representative source, although in these cases, isolates of these molecules may be more appropriate. However, given the genetic distinction between NIDA and commercially available *Cannabis,* patients in federally funded *Cannabis* research are likely experiencing effects that are specific to the plant material provided by NIDA. As the interest for medical *Cannabis* increases, it is important that research examining the threats and benefits of *Cannabis* use accurately reflect the experiences of the general public.

Given the rapidly changing landscape of *Cannabis* regulations and consumption [28], it is not surprising that commercially available *Cannabis* contains a diversity of genetic types.

275 Commercially available *Cannabis* has come to market through non-traditional means leading to
276 many inconsistencies. We have previously documented [55] that there is substantial genetic
277 divergence among samples within named strains, which only exacerbates questions about the
278 impacts of *Cannabis* consumption. These results emphasize the need to increase consistency
279 within the *Cannabis* marketplace, and the need for research grade *Cannabis* to accurately
280 represent what is accessible to consumers.
281
282 In conclusion, this study highlights the genetic difference between research grade marijuana
283 provided by NIDA and commercial *Cannabis* available to medical and recreational users. This
284 finding reveals that research conducted with NIDA *Cannabis* may not be indicative of the effects
285 that consumers are experiencing. Additionally, research has demonstrated that *Cannabis*
286 distributed by NIDA has lower levels of the principal medicinal cannabinoids (THC and CBD)
287 and higher levels of degradation byproducts of cannabinoids (cannabinol, CBN) [14]. Taken
288 together, these results demonstrate the need for there to be greater diversity of *Cannabis*
289 available for medical research and that the genetic provenance of those samples to be established
290 to fully understand the implications of results.
291
292 **Methods**
293 A total of 49 *Cannabis* samples were used in this research (Supplemental Table 1), including:
294 wild hemp (5), cultivated hemp (4), NIDA strains (2), high CBD drug-type strains (3), and drug-
295 types strains (35). Drug-type strains were further subdivided into three commonly used
296 categories: Sativa (11), Hybrid (14), and Indica (10) based on information available online [27,56].
297 The drug-type strains were randomly chosen from a much larger pool of samples. Duplicate
298 accessions within strains were not included.

299

300 DNA was extracted using a modified CTAB extraction protocol [57] with 0.035- 0.100 grams of
301 dried flower tissue per extraction. Ten variable microsatellite loci developed by Schwabe and
302 McGlaughlin [55] were used in this study following their previously described procedures.

303

304 GENALEX ver. 6.4.1 [59,60] was used to calculate pairwise genetic differentiation (F_{ST}) and Nei's
305 genetic distance (D) between each of the six groups. PCoA eigenvalues calculated in GENALEX
306 were used to plot the PCoA in RStudio with the ggplot package [42,61] with 95% confidence
307 interval ellipses. GENALEX was also used to generate a pairwise genetic distance square matrix
308 which was then used to generate a hierarchical cluster analysis dendrogram with Ward's method
309 and Euclidean Genetic distance parameters in PC-ORD [43].

310

311 Genotypes were analyzed using the Bayesian cluster analysis program STRUCTURE ver. 2.4.2
312 [44]. Burn-in and run-lengths of 50,000 generations were used with ten independent replicates for
313 each STRUCTURE analysis. The number of genetic groups for the data set was determined by
314 STRUCTURE HARVESTER [45], which implements the Evanno et al. method [62].

315

316 Maverick v1.0.5 [46] was used as an additional verification of Bayesian clustering analysis using
317 thermodynamic integration to determine the appropriate number of genetic groups. The
318 following parameters were used: admixture parameter (alpha) of 0.03 with a standard deviation
319 (alphaPropSD) of 0.008, 10 replicates (mainRepeats), 1,000 Burn-in iterations (mainBurnin),
320 5,000 sample iterations (mainRepeats), 100 TI rungs (thermodynamicRungs), 500 TI Burn-in
321 iterations (thermodynamicBurnin), and 1,000 TI iterations (thermodynamicSamples).

322

EDENetworks ver. 2.18 [47] was used to construct a web of genetic relationships using the Linear Manhattan distance measure. An auxiliary data file was imported to maintain the spatial coordinates and to color individuals by group assignment. The automatic percolation threshold was first derived as 8.1. Networks were generated for subsequent iterative threshold intervals of 0.5. Increasing the threshold lowers the stringency for genetic relationships, and as the threshold increases, more relationships are formed in the network. EDENetworks diagrams were constructed for the percolation threshold of 8.1, 8.5, 13.7 and 16.9. These are the values that: connect NIDA samples to each other, but not to any other samples in the dataset (8.5), connect a single NIDA sample to the larger network (13.7), and finally connect all samples in the network (16.9). The size of each node is proportionate to the number of relationship connections to other members in the network. The line color and width indicated the strength of the relationship between two individuals- lighter thicker lines indicate stronger genetic relationships, while the darker thinner lines indicate weaker genetic relationships.

Data Availability

The scored microsatellite data set analyzed in this study is provided as supplementary material (Supplemental Table 2).

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503

504 **Author Contributions**

505 A.S conceived the project, collected samples, conducted DNA extractions, designed and
506 optimized microsatellite primers, compiled and analyzed data, and drafted manuscript content;
507 C.H conducted DNA extractions, compiled and analyzed data, and prepared the first draft of the
508 manuscript; R.M.H provided DNA from NIDA samples; M.E.M directed the project, provided
509 some funding, contributed statistical analysis and manuscript revisions; all authors contributed to
510 manuscript preparation.

511

512 **Competing Interests**

513 The authors declare they have no competing interests.

514
515
516

Exhibit 4

2019 MEMBER SURVEY

IRAQ AND AFGHANISTAN VETERANS OF AMERICA

//WHO IS IAVA?

Iraq and Afghanistan Veterans of America (IAVA) is the premier veterans advocacy and support organization on the planet. Every day, we fight for veterans. Hard. We are the tip-of-the spear non-profit engine of impact that connects, unites and empowers over 400,000 veterans and allies nationwide.

Founded by an Iraq veteran in 2004, IAVA is the non-partisan leader in advocacy, public awareness and 1-on-1 case-management support. We organize locally, and drive historic impacts nationally.

Contents

It was a historic year for IAVA's post-9/11 generation of veterans in 2018. We led the national dialogue, united thousands nationwide on the ground and online, and unveiled our urgent Big 6 Advocacy Priorities. These 6 items are the areas that IAVA members declared as the most pressing issues for the newest generation of veterans. IAVA members of all backgrounds, nationwide, united and fought for change on Capitol Hill, in the media, and on the ground to address the biggest issues impacting our community of over three million men and women who have served since 9/11.

Last year also brought huge obstacles. Demand for veterans services continued to climb, suicide took countless lives and the Department of Veterans Affairs (VA) remained riddled with problems. The VA saw massive turbulence and a major leadership change as Secretary Shulkin was ousted and Secretary Wilkie was named, but only after Dr. Ronny Jackson withdrew under a swirl of controversy. And on Veterans Day 2018, news broke that thousands of veterans had received late or inaccurate GI Bill payments, throwing many in our community into financial hardship before the holidays. And a wild year ended with the widely-respected Secretary of Defense and retired Marine Corps General Mattis stepping down.

Coming off of all that, 2019 will be the most important year for veterans in modern times. As Washington continues to be marred by partisanship, gridlock and government shutdowns, our needs are often relegated and our brothers and sisters fighting overseas are often forgotten. But veterans stand ready to continue to serve -- and represent a source of hope and leadership for all Americans. Our voices have never been more vital.

IAVA's annual member survey represents those voices. It is the richest, most comprehensive non-governmental survey of Iraq and Afghanistan combat veterans in America -- and one of the largest. We asked vets about suicide, employment, education, and VA reform -- and sought IAVA member opinions on hot topics like firearms, immigration, support for the wars in Iraq and Afghanistan, President Trump's military parade proposal and the NFL protests.

Over the last few years, through this widely-cited survey, the collective voices of IAVA members have driven the national conversation for veterans and powered our current Big 6 Advocacy Priorities and broader Policy Agenda and victories including the 2016 Campaign to Defend the GI Bill, the 2014 Campaign to Combat Suicide, the 2013 Campaign to End the VA Backlog, the Vow to Hire Heroes Act and much more.

But post-9/11 veterans are not a monolith. Our community is diverse and ever-changing. However, there are key numbers and trends that can not be ignored. This survey is a continued call to action on veteran suicide -- with 59 percent reporting knowing a post-9/11 veteran who has died by suicide. Meanwhile, burn pit exposure continues to rise, with a stunning 82 percent reporting exposure. Over 80 percent support legalizing medical cannabis. And for the first time since we began polling, over half of IAVA members support legalizing recreational cannabis.

This survey also shows that post-9/11 vets are rising. Ninety-seven percent of IAVA members are registered to vote. And as Washington welcomes a new, bipartisan "Camouflage Wave" of veterans to Capitol Hill, 86 percent of IAVA members believe that having more veterans in Congress will have a positive impact on Washington's ability to address national issues.

This survey is a major driver for all that IAVA does. And it should be a roadmap for all Americans -- from the Pentagon to Silicon Valley to the White House.

The post-9/11 generation of veterans has served for year after year. They have been there and done that. And they have plenty to say about their experiences and the state of our country that can help guide our nation forward to a brighter, stronger future.

We appreciate you taking the time to hear our voices and learn more.

Best,
Paul Rieckhoff
Founder and CEO
Iraq and Afghanistan
Veterans of America

//THE BIG SIX ADVOCACY PRIORITIES

This "Big 6" contains the challenges and opportunities that IAVA members care about most– and see as areas where we can uniquely make an impact. IAVA members are poised to educate the public, design solutions for positive impact, and lead the way to the future.

Key Findings from the Big 6 Priorities

1. Mental Health and Suicide Prevention
43% report suicidal ideation since joining the military, a 6% rise from 2017

2. VA Reform
81% rate VA care as average or above average

3. Toxic Exposures, including Burn Pits
82% report exposure to burn pits or toxic exposures

4. Education Benefits
78% agree that the post-9/11 GI Bill is important for recruitment

5. Women Veterans
78% of IAVA members feel that it's important IAVA focus on the issues impacting women veterans

6. Utilization of Medical Cannabis
90% IAVA members support researching cannabis for medicinal purposes

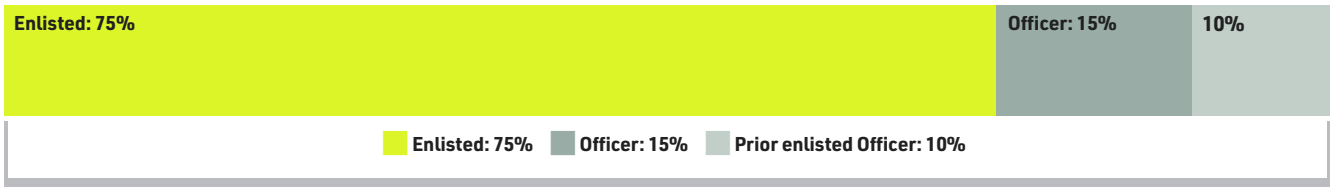
//PROFILE OF AN IAVA MEMBER

IAVA members served around the world, from Iraq and Afghanistan to Bahrain, Syria, Kuwait and other locations globally. They've deployed in every major combat operation since 9/11 and continue to serve at home, through community and veteran service organizations.

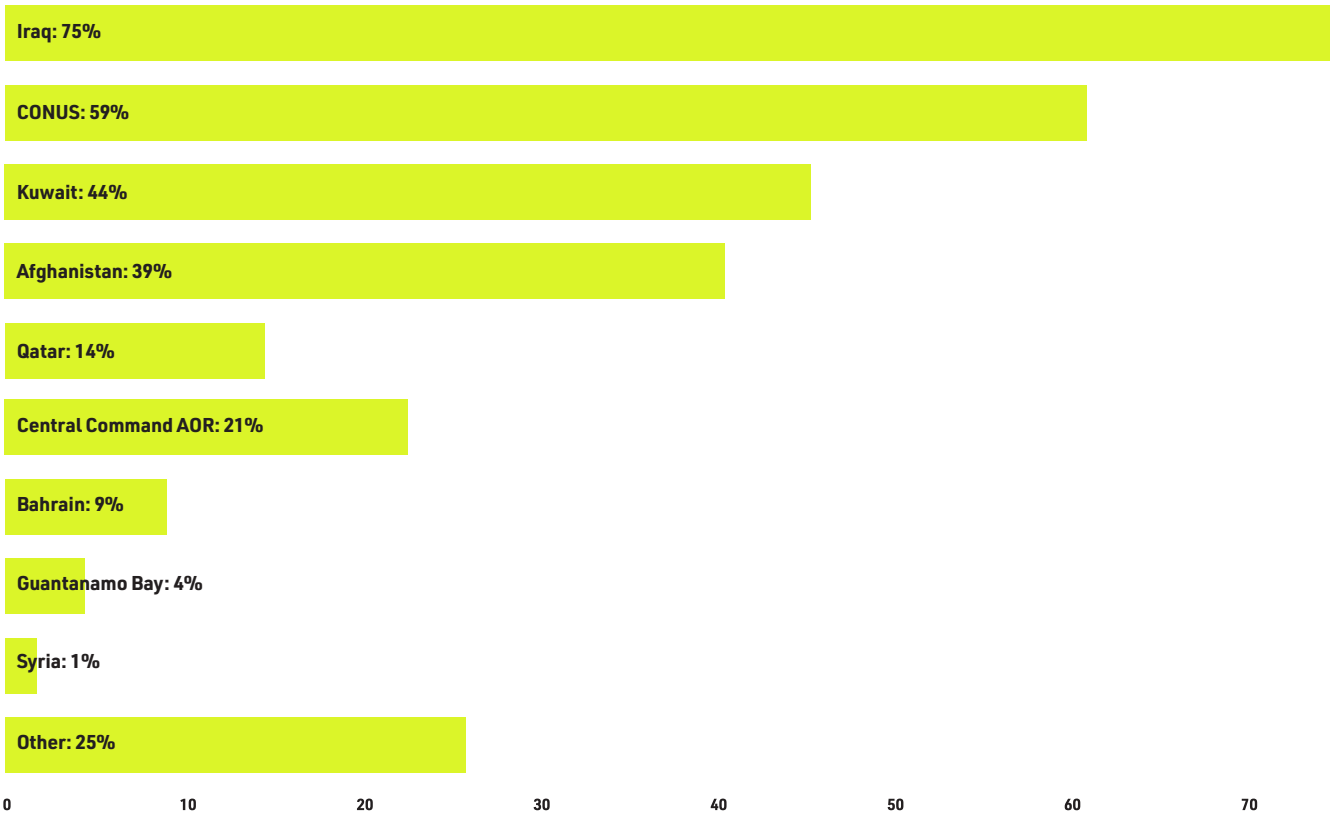
76% would recommend military service to a family member or friend.

Branch of Service

Officer or Enlisted

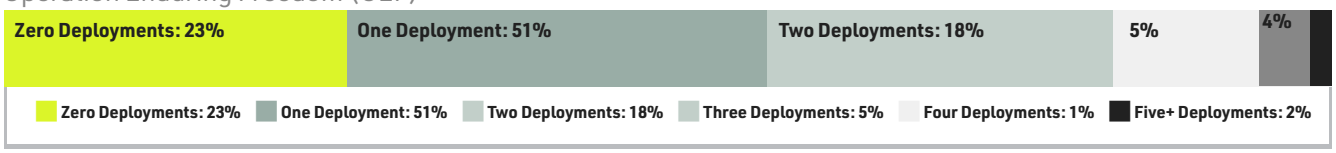


Where have you served on Active Duty?

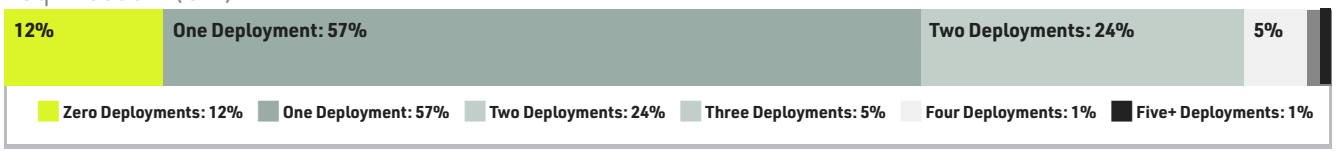


Number of Deployments

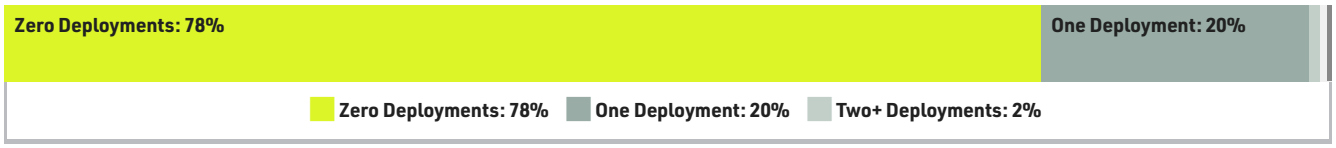
Operation Enduring Freedom (OEF)



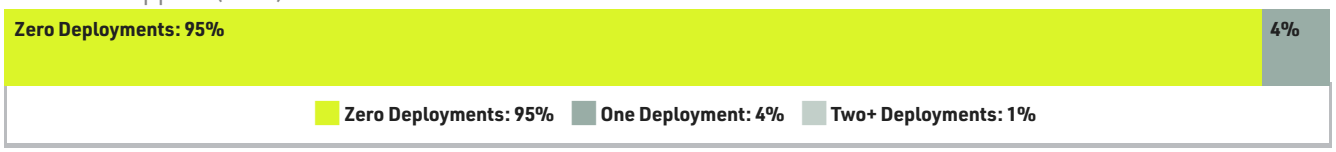
Iraqi Freedom (OIF)



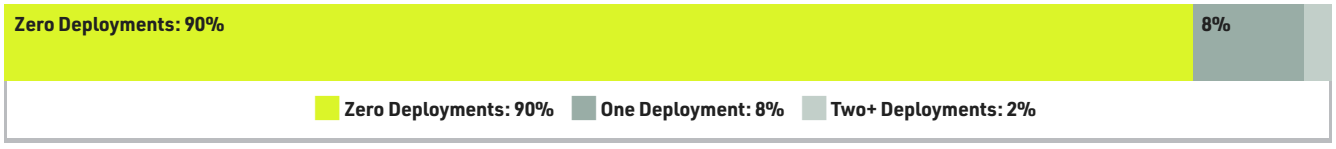
New Dawn (OND)



Resolute Support (ORS)

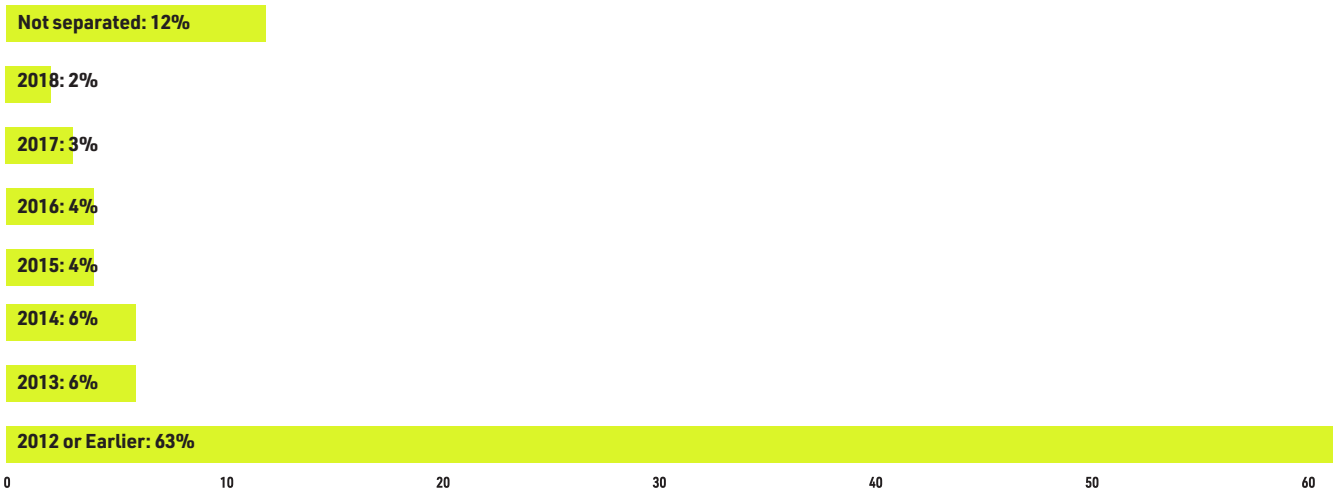


Inherent Resolve (OIR)

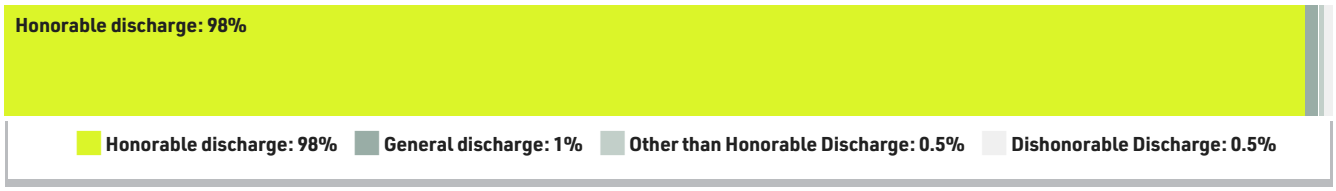


58% Were, or are currently, a member of the National Guard or Reserves

Year Separated from the Military

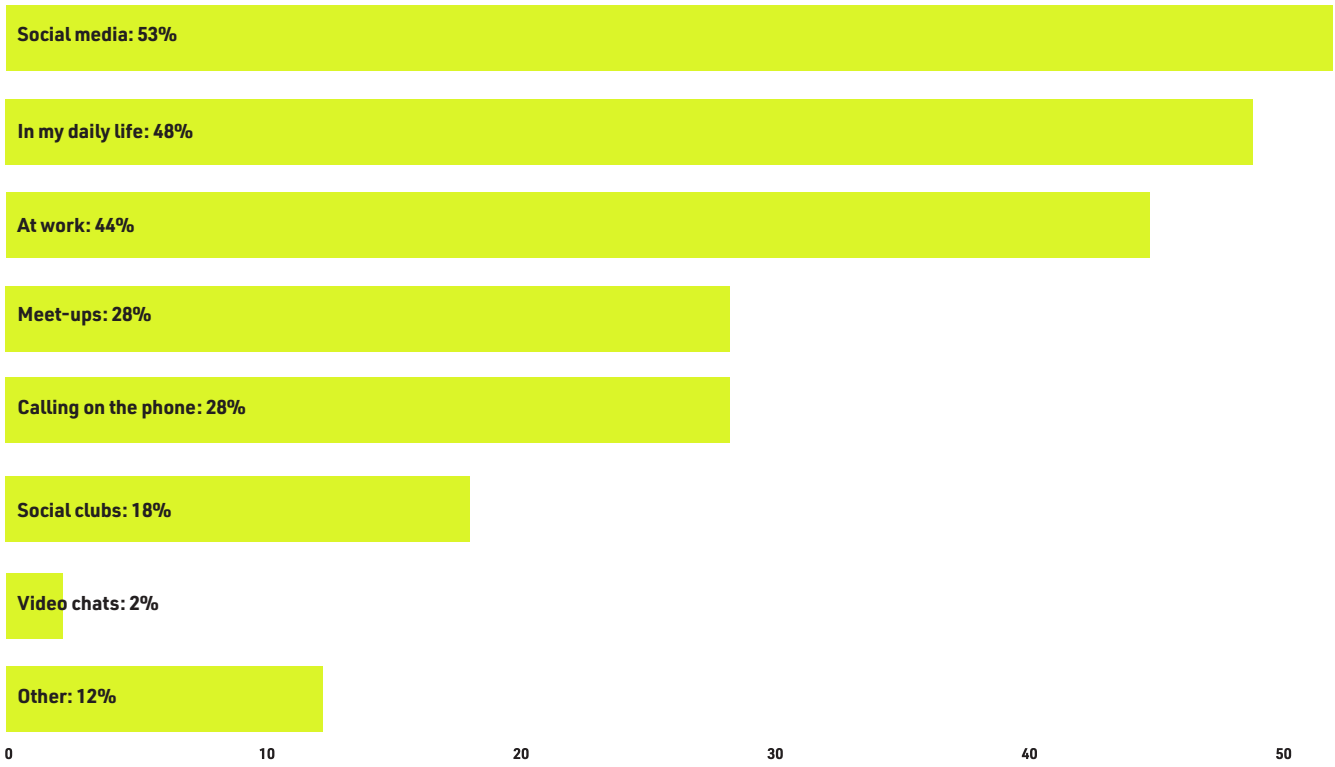


Discharge Status



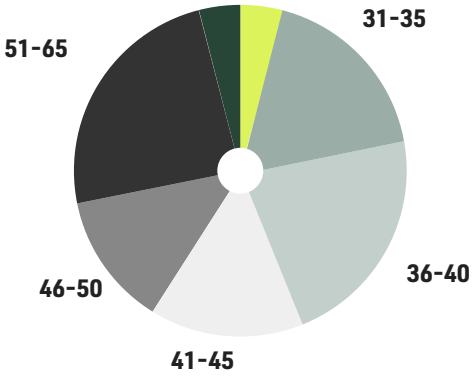
How important is it for you to interact regularly with other veterans and military service members?

How do you interact with other veterans and military service members?



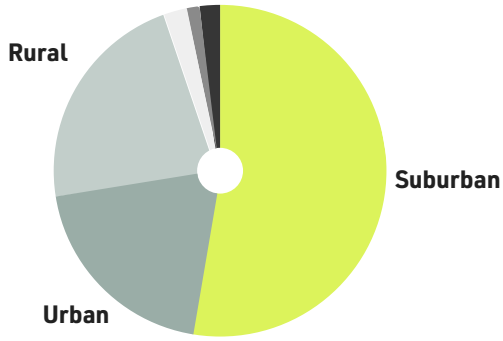
Gender

Age



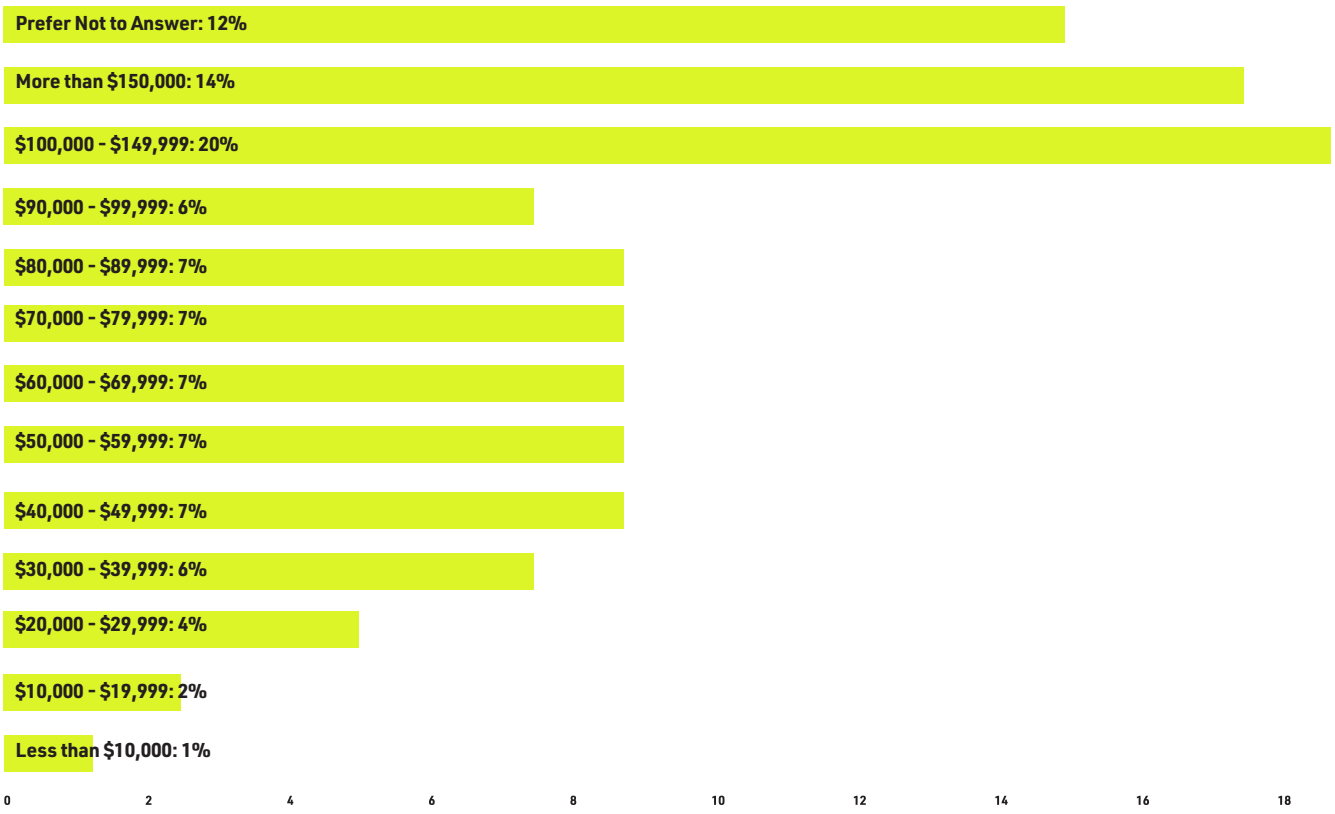
- 18 - 30: 4%
- 31 - 35: 18%
- 36 - 40: 22%
- 41 - 45: 15%
- 46 - 50: 13%
- 51 - 65: 24%
- 65+: 4%

Community

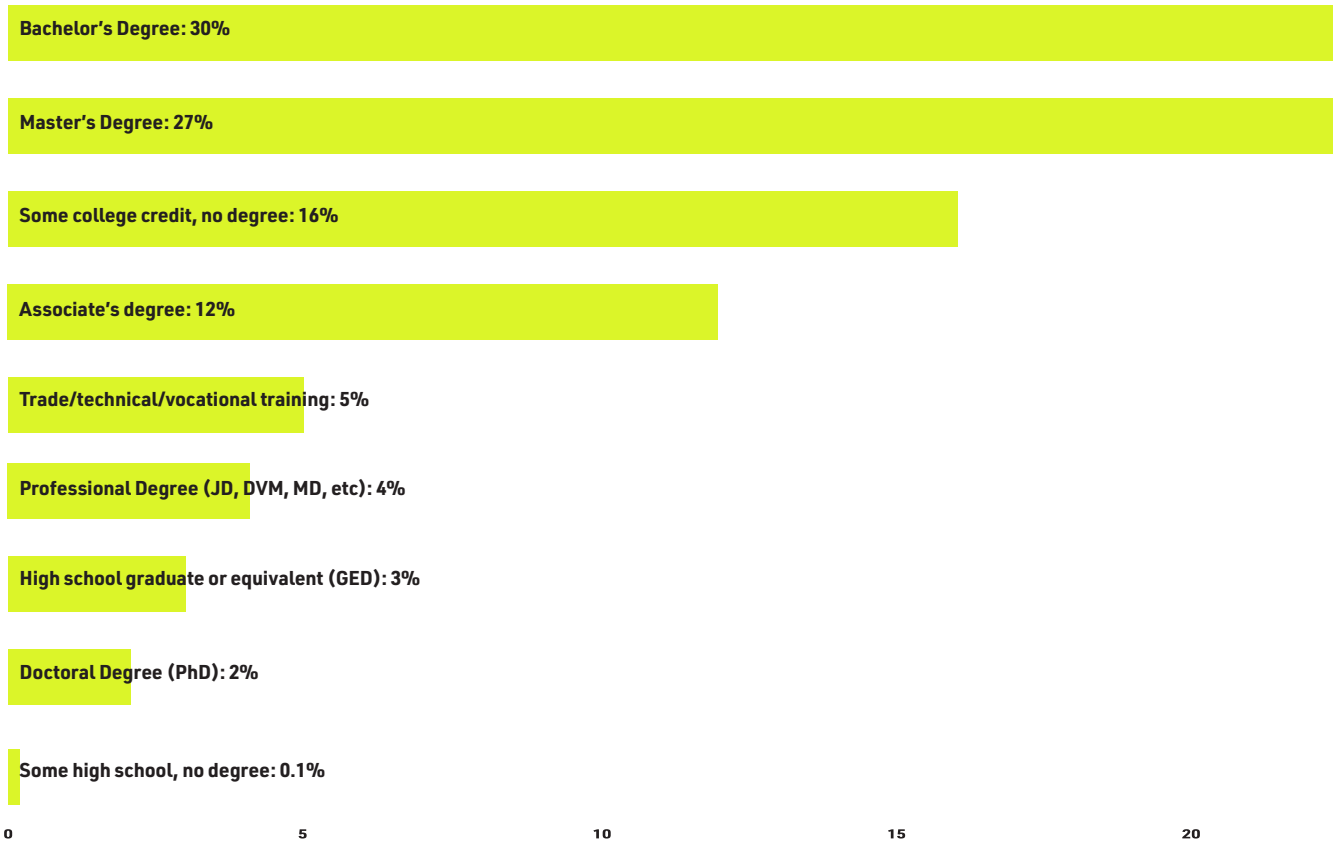


- Suburban: 52%
- Urban: 21%
- Rural: 22%
- Active Duty Military Base CONUS: 2%
- Active Duty Military Base OCONUS: 1%
- I currently live outside the US: 2%

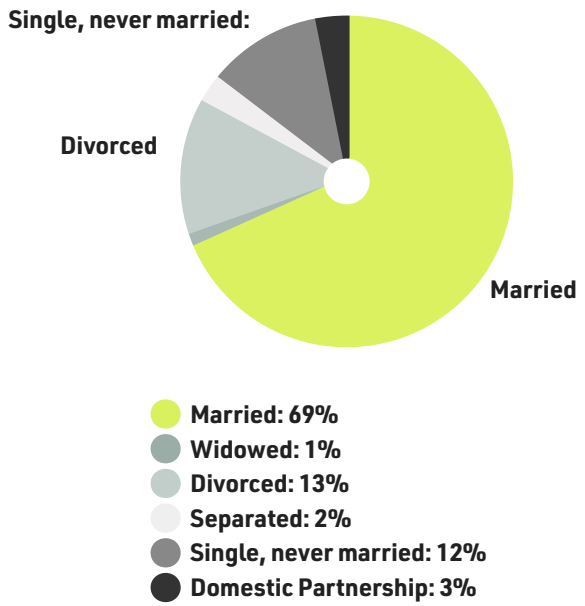
Household Income



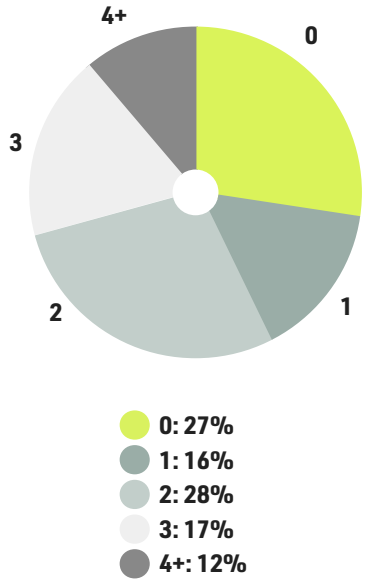
Education



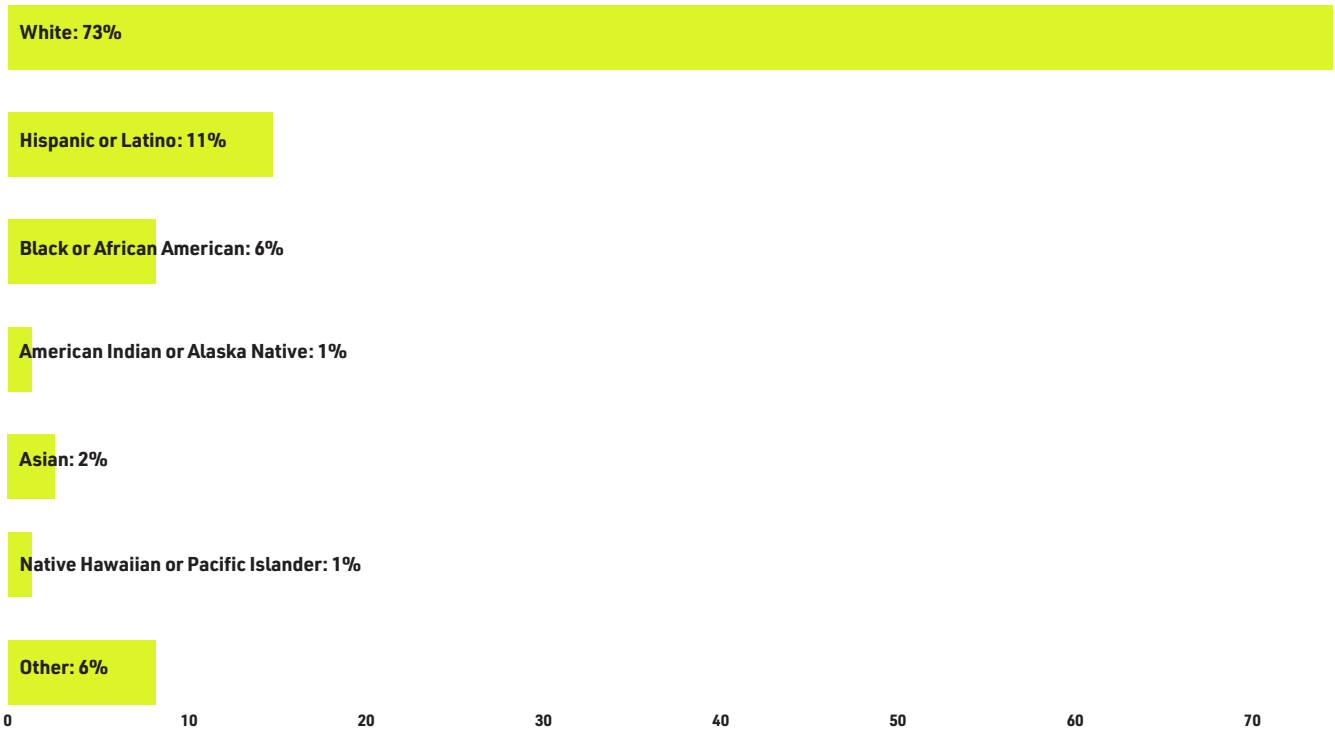
Marital Status



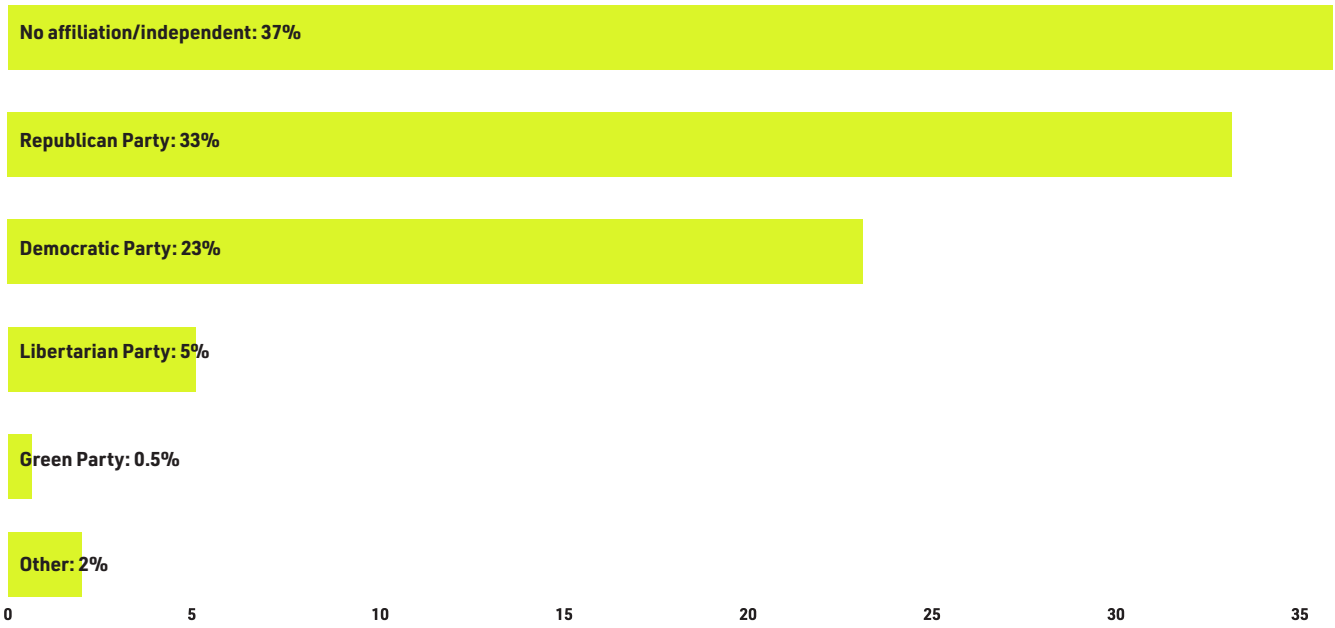
Children



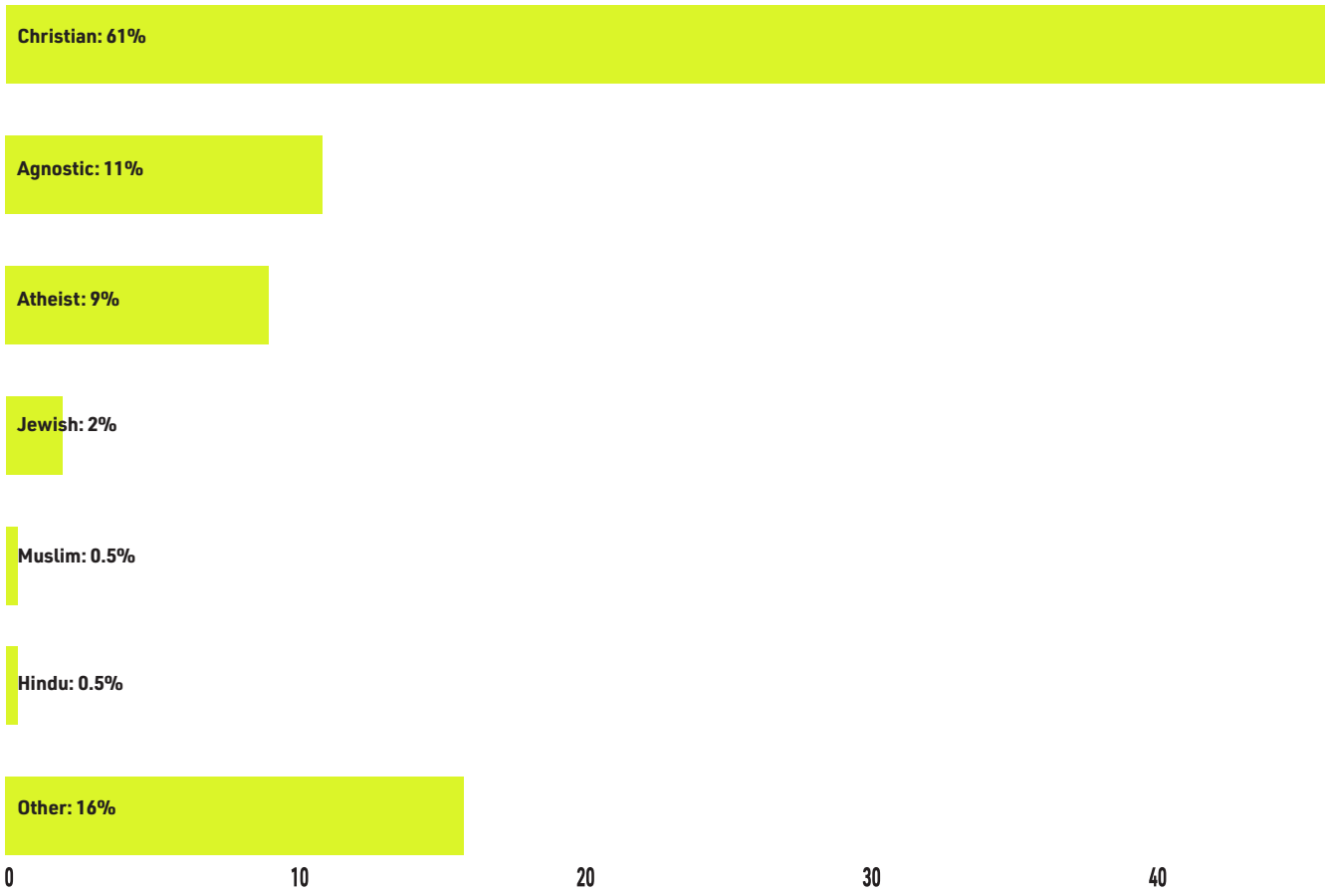
Ethnicity



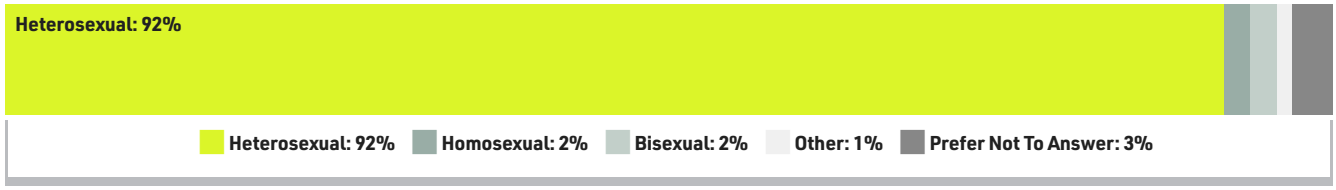
Political Party Affiliation



Religious Affiliation



Sexual Orientation



//POLITICAL ENGAGEMENT

IAVA members are incredibly engaged in the policies and politics affecting the nation. From voting to speaking out on the issues that matter most, IAVA members are an important voice in American political life.

86%

think having more veterans in Congress would have a positive impact Congress to address national issues.

36%

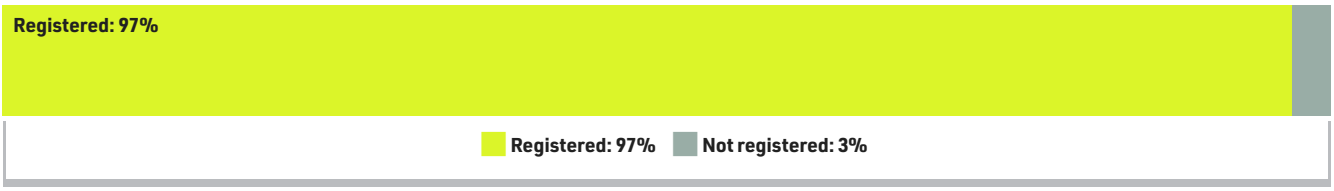
have considered running for public office.

89%

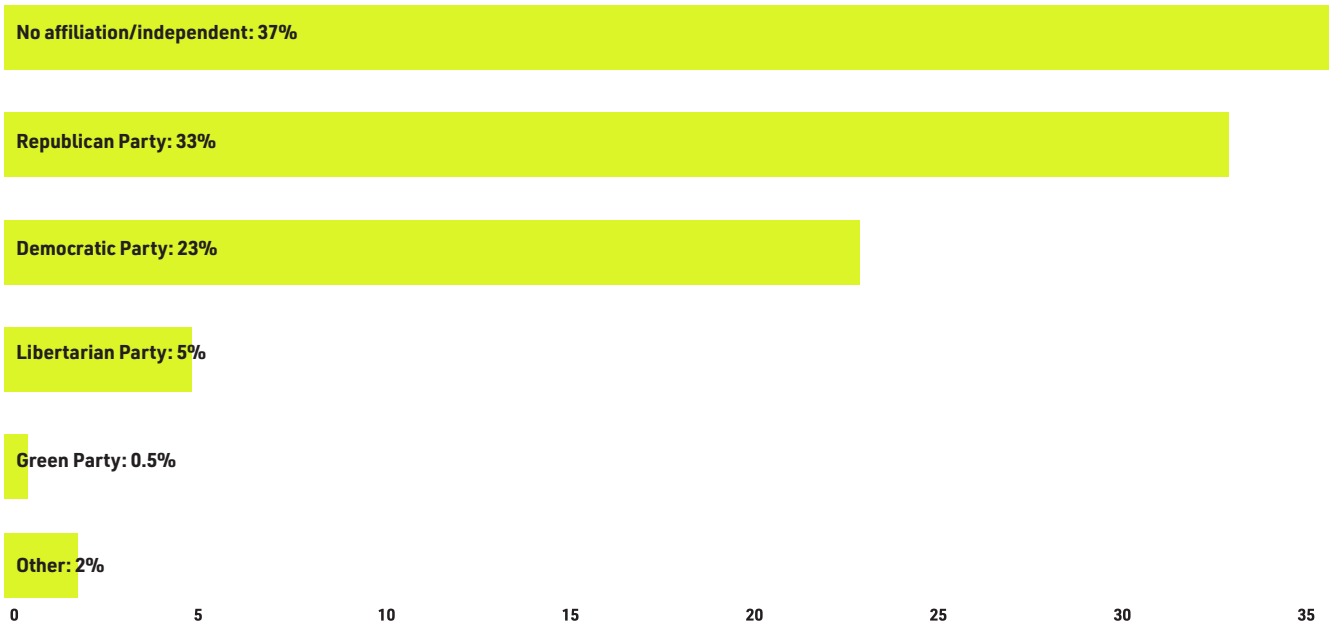
definitely planned on voting in 2018 Midterm Elections.*

*Reflects data collected before November 6, 2018

Registered to Vote



Political Party Affiliation



Top 5 Issues Influencing Support for Political Candidate

1. Veterans Issues
2. Economy
3. Military/defense issues
4. Health Care
5. Gun control/2nd Amendment rights

//POLITICAL PERCEPTIONS

AVA Members are engaged with the news of the day and have varying degrees of trust and support for political figures.

46%
believe President Trump acts in the interest of veterans.

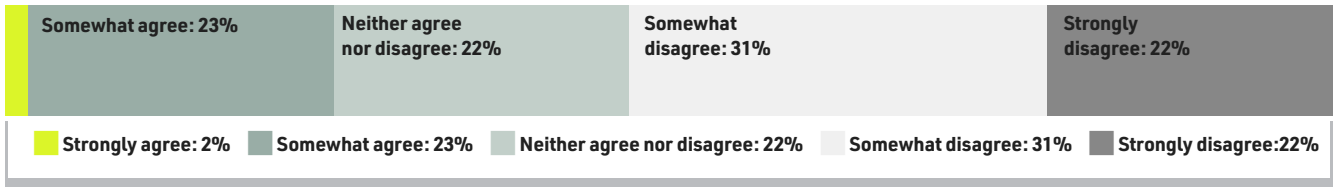
25%
believe Congress acts in the interest of veterans.

68%
believe the American public supports veterans.

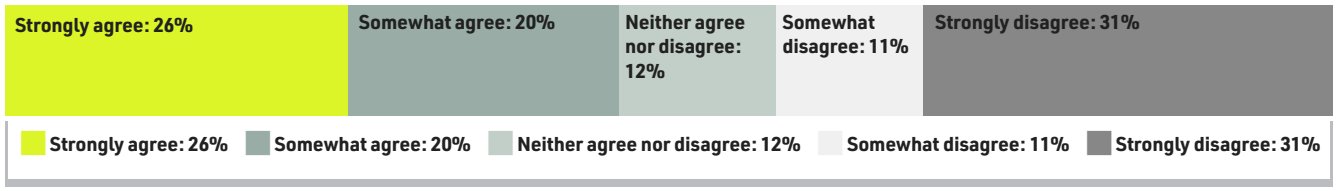
Which of the following most closely resembles your opinion on the following statements?

The American public supports veterans.

Congress acts in the interest of veterans.

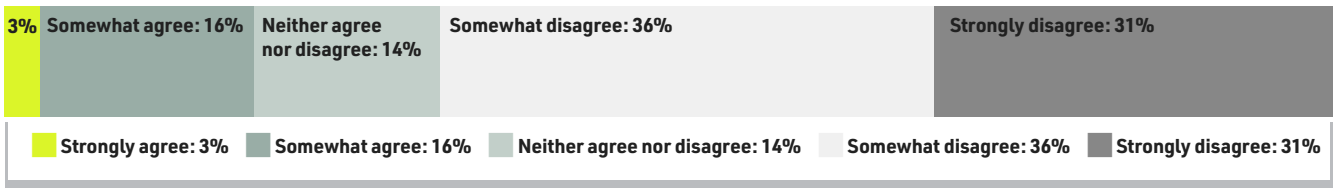


President Trump acts in the interest of veterans.



Employers see value in hiring veterans.

The American public understands the sacrifices of veterans.



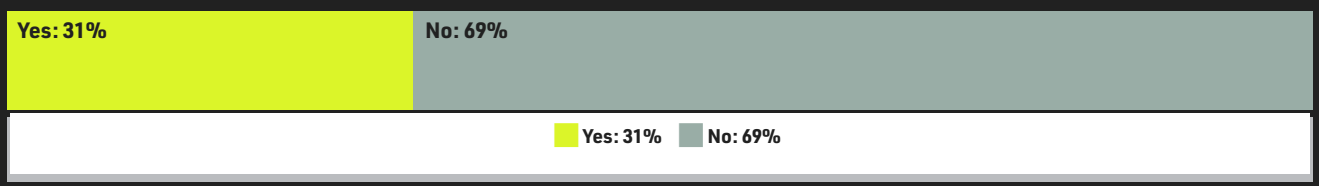
Top 5 mediums IAVA members get their news through:

1. Websites/Apps
2. Online Newspapers
3. Cable Television
4. Social media
5. Radio

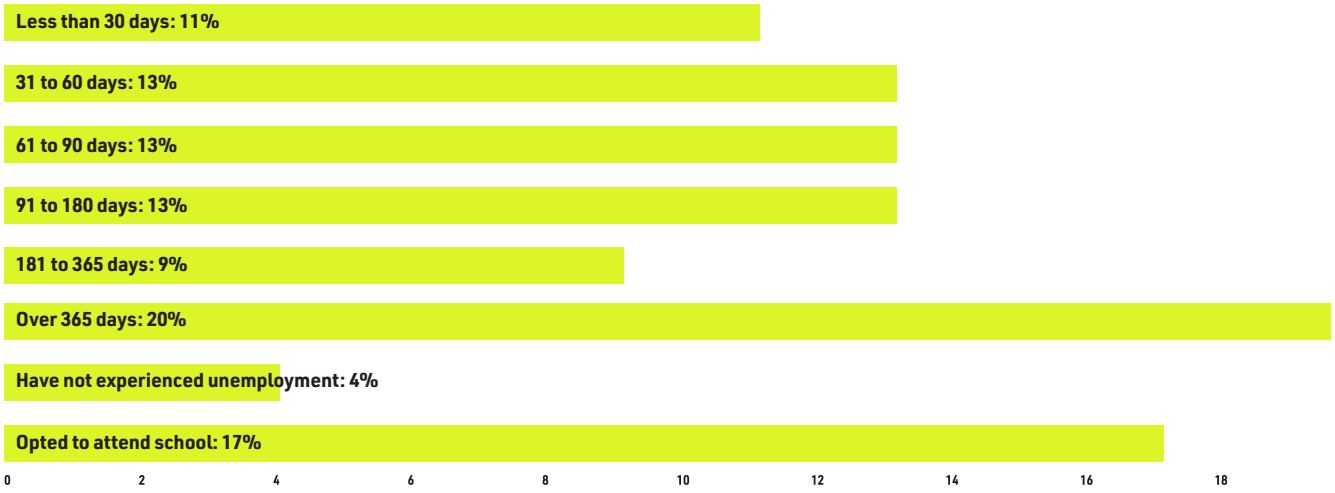
//EMPLOYMENT

Unemployment has been consistently declining, particularly for the post-9/11 generation. This year, we continue to see this trend among IAVA members with the lowest unemployment rate ever recorded. But job satisfaction, underemployment, veteran-friendly employment practices and other factors continue to impact the overall employment outlook for the post-9/11 generation.

Did you have a job secured before you left the military?



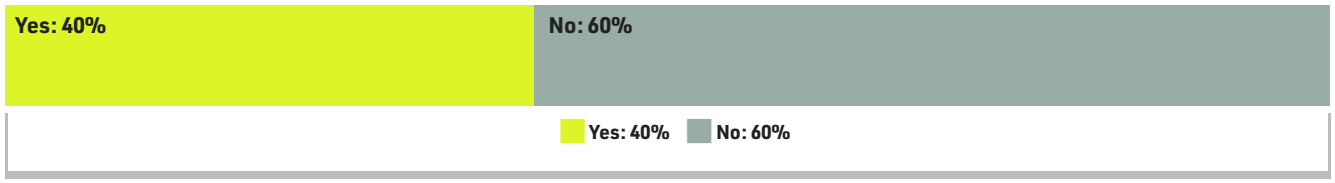
How long were you without a job after transitioning out of the military?



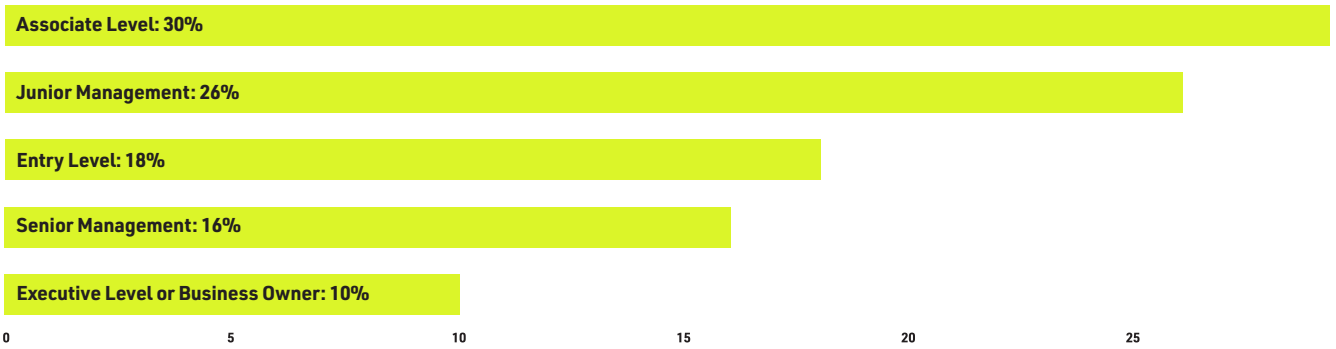
Top 3 Job Incentives

1. Salary/benefits package 2. Job is meaningful 3. Translating military skills

Did you receive support/training for transitioning to the civilian workforce before leaving the military?



At which level do you currently work?



Are you personally satisfied with your current job?

Top 5 Job Satisfaction Factors:

1. The environment and/or people
2. Job is mission driven/has an impact
3. Opportunity to apply skills/abilities
4. Compensation
5. Job is challenging

Top 5 Reasons Unsatisfied with Job:

1. Job does not best use my skills
2. The environment and/or people
3. Compensation
4. Job does not match my education/experience level
5. Job is not challenging

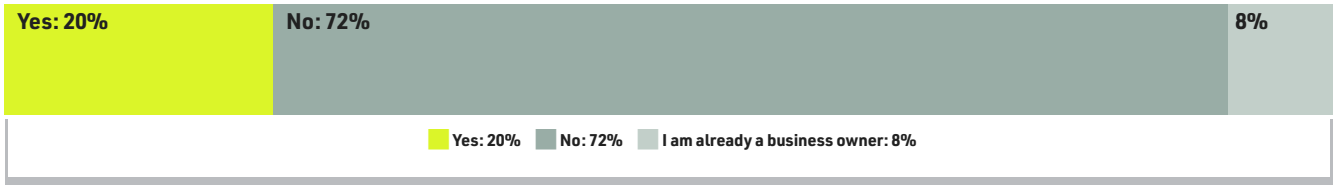
Top 5 Challenges faced in finding work:

1. Competing with candidates in the workforce longer
2. Lacking required education/certification
3. Explaining how military skills translate
4. Employers avoid hiring veterans
5. Mental health injuries

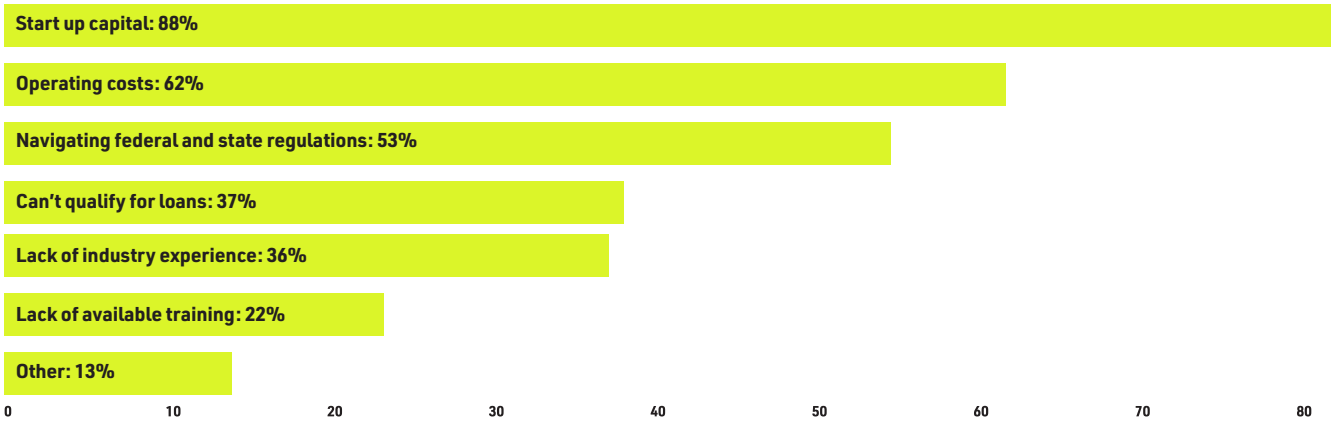
Top 3 Reasons Not Looking for Work:

1. Family responsibilities
2. Health concerns
3. Childcare conflicts / In school or trainings

Plans to start own business or non-profit enterprise:



What challenges do you anticipate for starting your business/non-profit?



38% Are aware of VA/Department of Labor small business support programs.

//SUICIDE

For nearly a decade, IAVA and the veteran community have called for immediate action by our nation's leaders to appropriately respond to this crisis of 20 military and veterans dying every day from suicide. IAVA members are at the forefront of this crisis. Every year we see a rise in the percent of IAVA members who know a post-9/11 veteran that has died by suicide or attempted suicide. This year is no different. This is a time to redouble our efforts as a nation and answer the call to action. And IAVA will continue to maintain our leadership on that charge.

59%

Personally know a post-9/11 veteran who has died by suicide

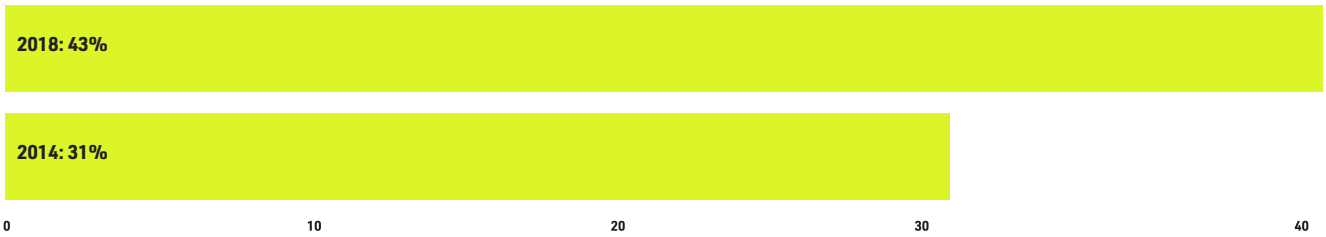
65%

Personally know a post-9/11 veteran who has attempted suicide

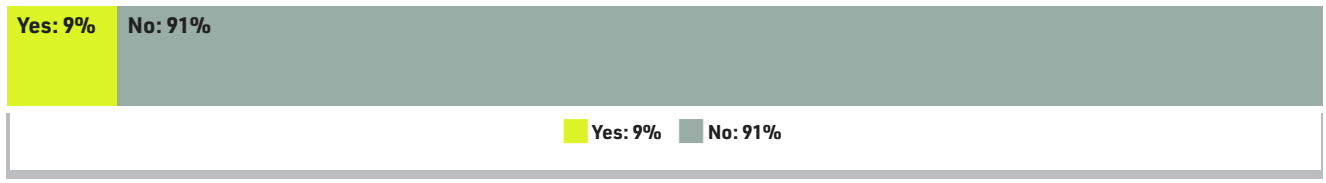
77%

Do not believe as a nation we are making progress in combating military/ veteran suicide

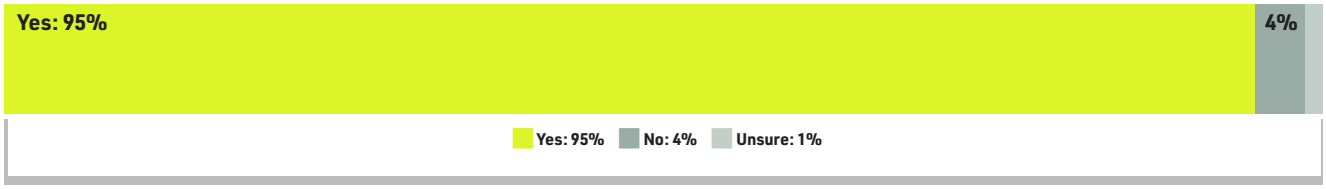
Reported suicidal ideation since joining the military:



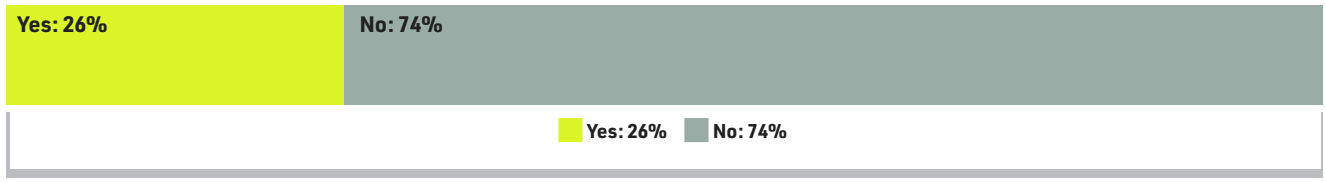
Reported suicidal ideation prior to joining the military:



Are you aware of the Veterans Crisis Line, the 24/7 toll-free hotline connecting veterans in crisis with trained responders, which can be reached at 1-800-273-8255 (press 1)?



Have you ever contacted the Veterans Crisis Line (1-800-273-8255)?

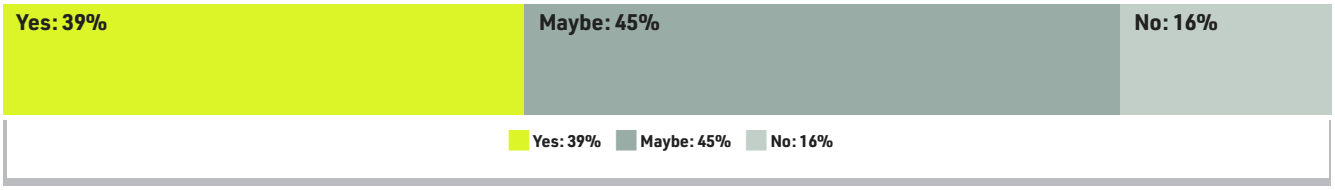


//BURN PITS

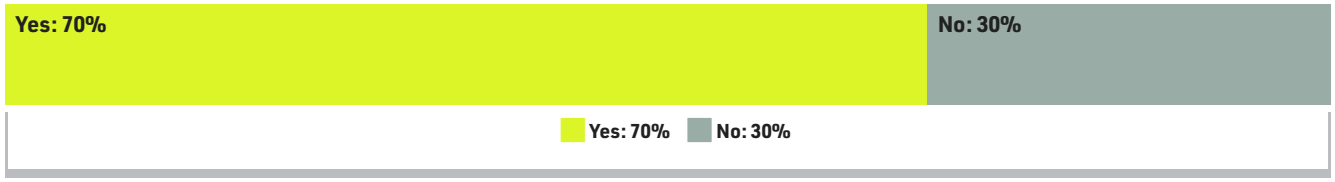
It's known as the Agent Orange of the post-9/11 generation for a reason. Burn pits were a common way to get rid of waste at military sites in Iraq and Afghanistan, particularly between 2001 and 2010. There are other hazards beyond burn pits that occurred in Iraq and Afghanistan that may pose a danger for respiratory illnesses, including high levels of fine dust and exposure to other airborne hazards. Year after year, we have seen an upward trend in the number of members reporting symptoms associated with burn pits exposure.

82% were exposed to burn pits and/or airborne toxic materials.

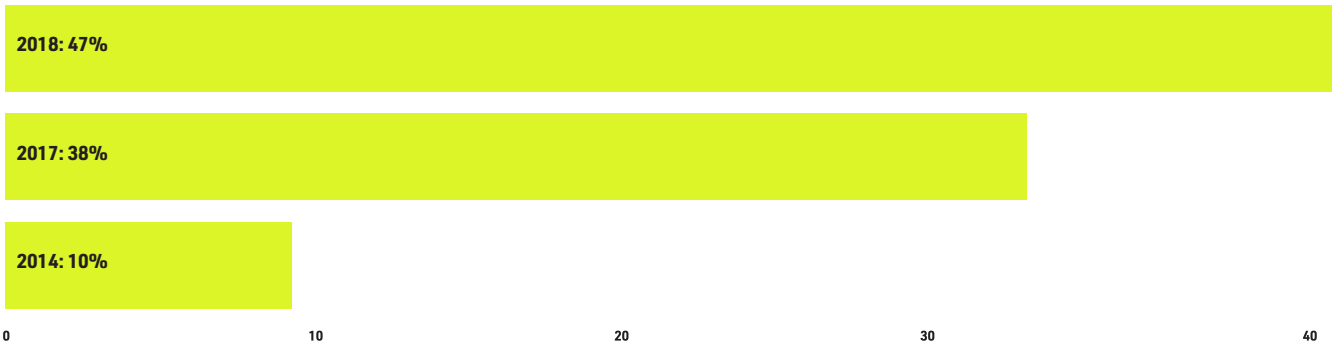
Do you believe that you have symptoms associated with burn pits or toxic exposure, such as respiratory issues?



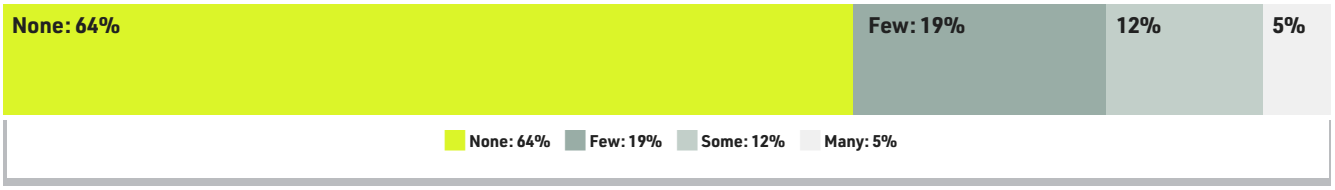
Are you aware of the VA's 'burn pits' registry?



Registered in the VA's 'burn pits' registry:



Did you have any issues when registering with the VA's 'burn pits' registry?



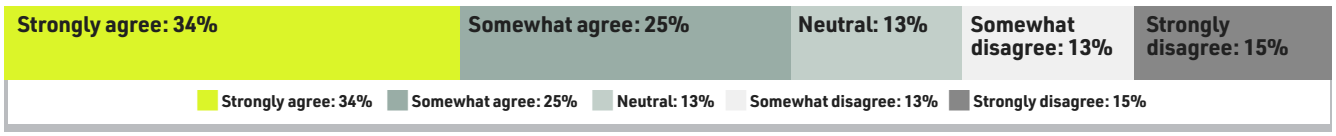
//WOMEN VETERANS

In 2017, IAVA launched our groundbreaking campaign, #SheWhoBorneTheBattle, focused on recognizing the service of women veterans and closing gaps in care provided to them by the VA. We fought hard for top-down culture change in the VA for the more than 345,000 women who have fought in our current wars–and for all Americans. It's a fight that still continues.

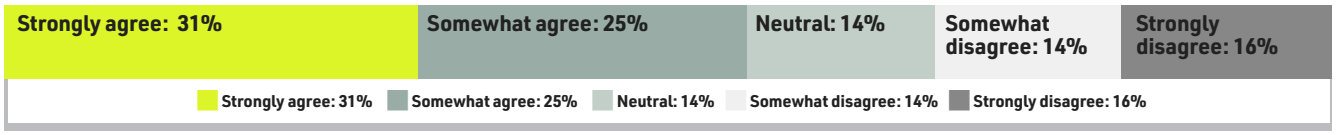
How important do you think it is for IAVA to address issues facing women veterans?

What is your opinion of the Department of Defense's (DoD) decision that opened combat MOS positions to women?

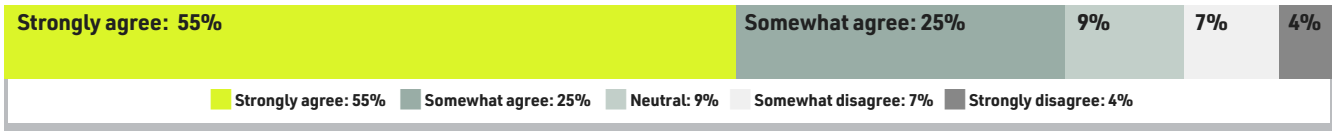
All respondents



Male respondents

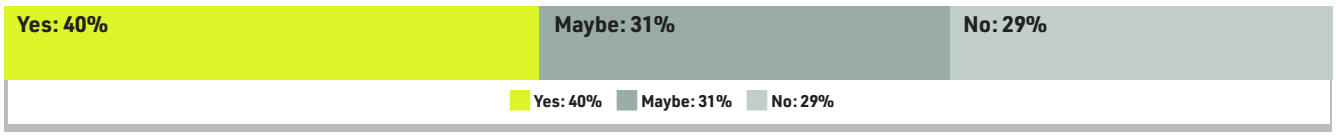


Female respondents

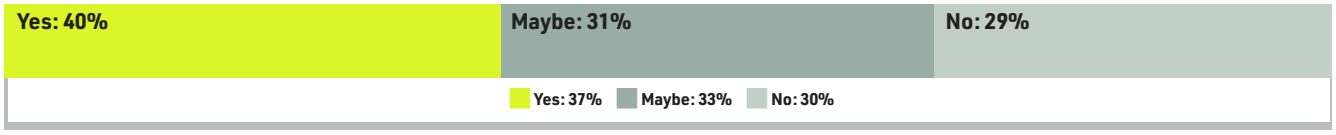


Do you think women's advancement in the military has been limited by past restrictions on women in combat?

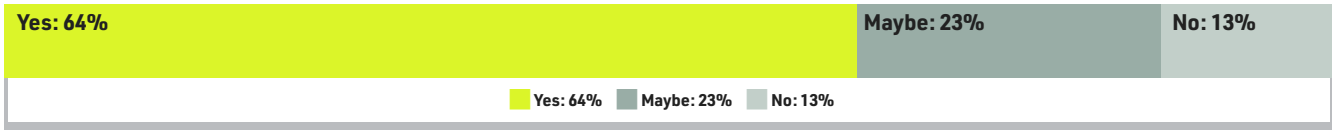
All respondents



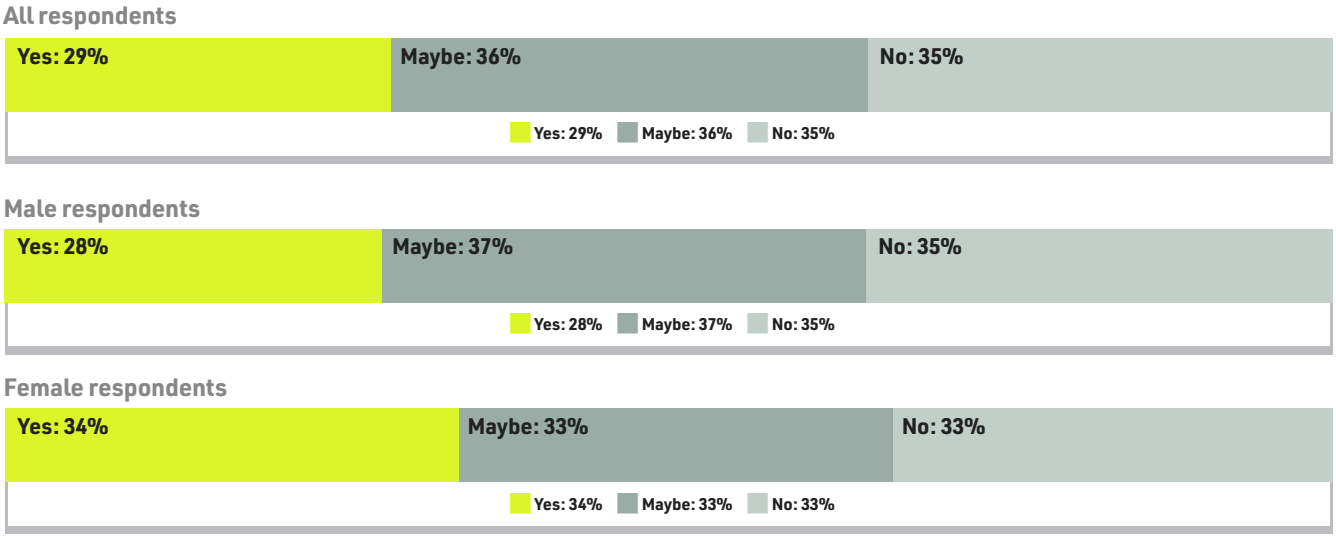
Male respondents



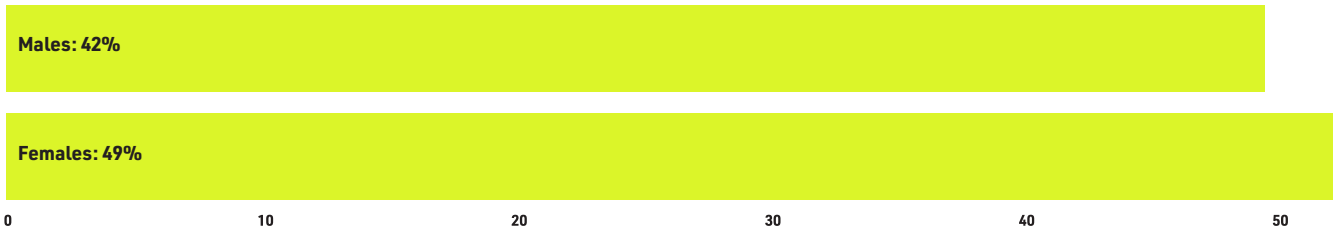
Female respondents



Do you believe that lifting restrictions on women in combat has improved the public recognition of their military contributions?

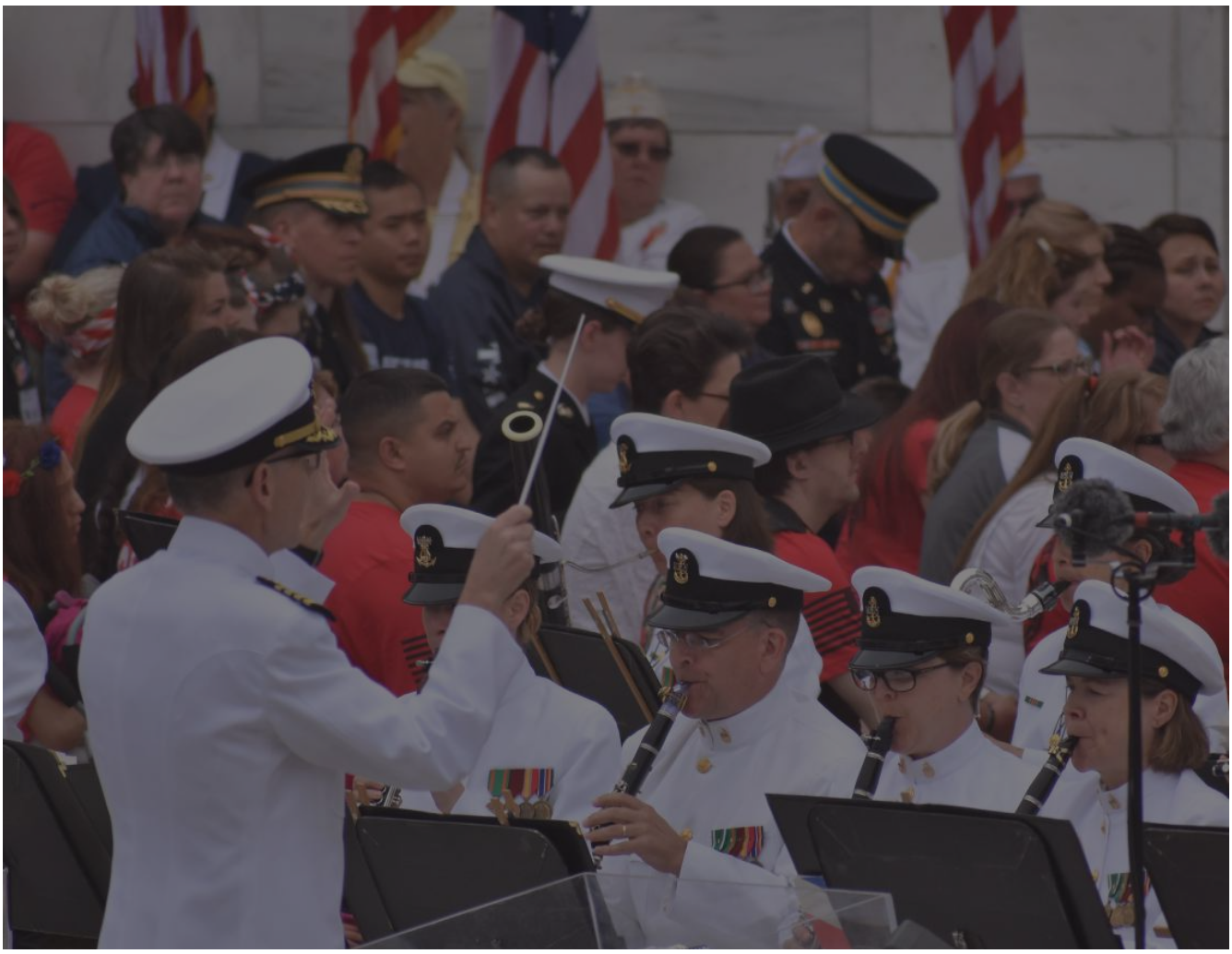


Report suicidal ideation since joining the military:



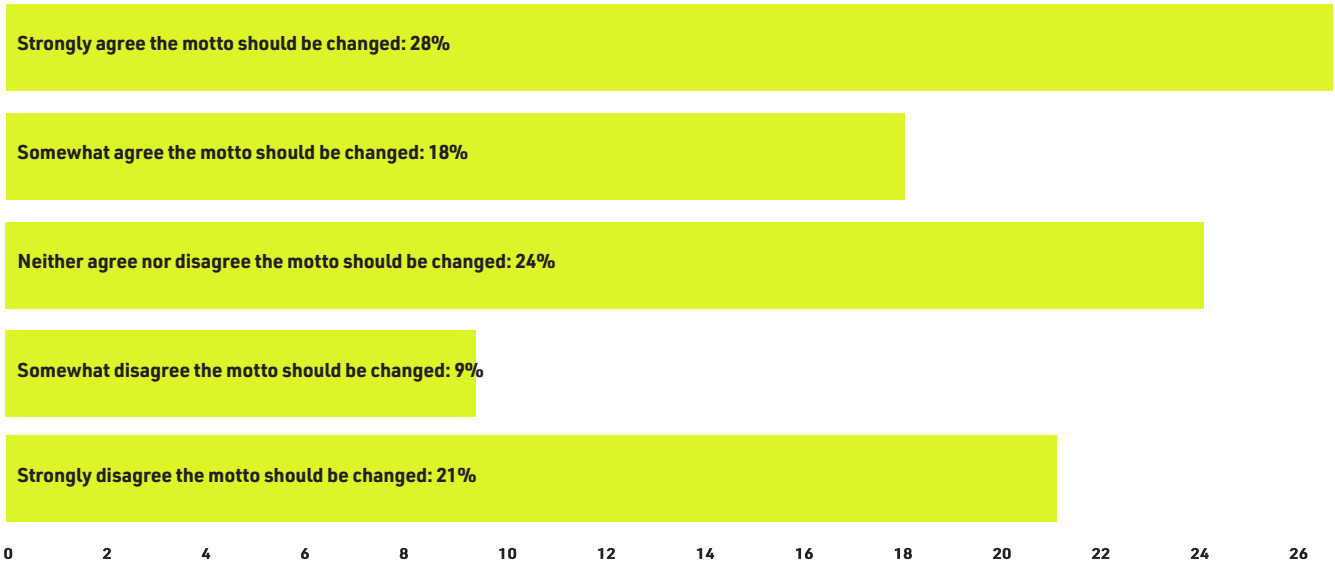
Report a service-connected mental health injury:

Report difficulty covering expenses in a typical month:

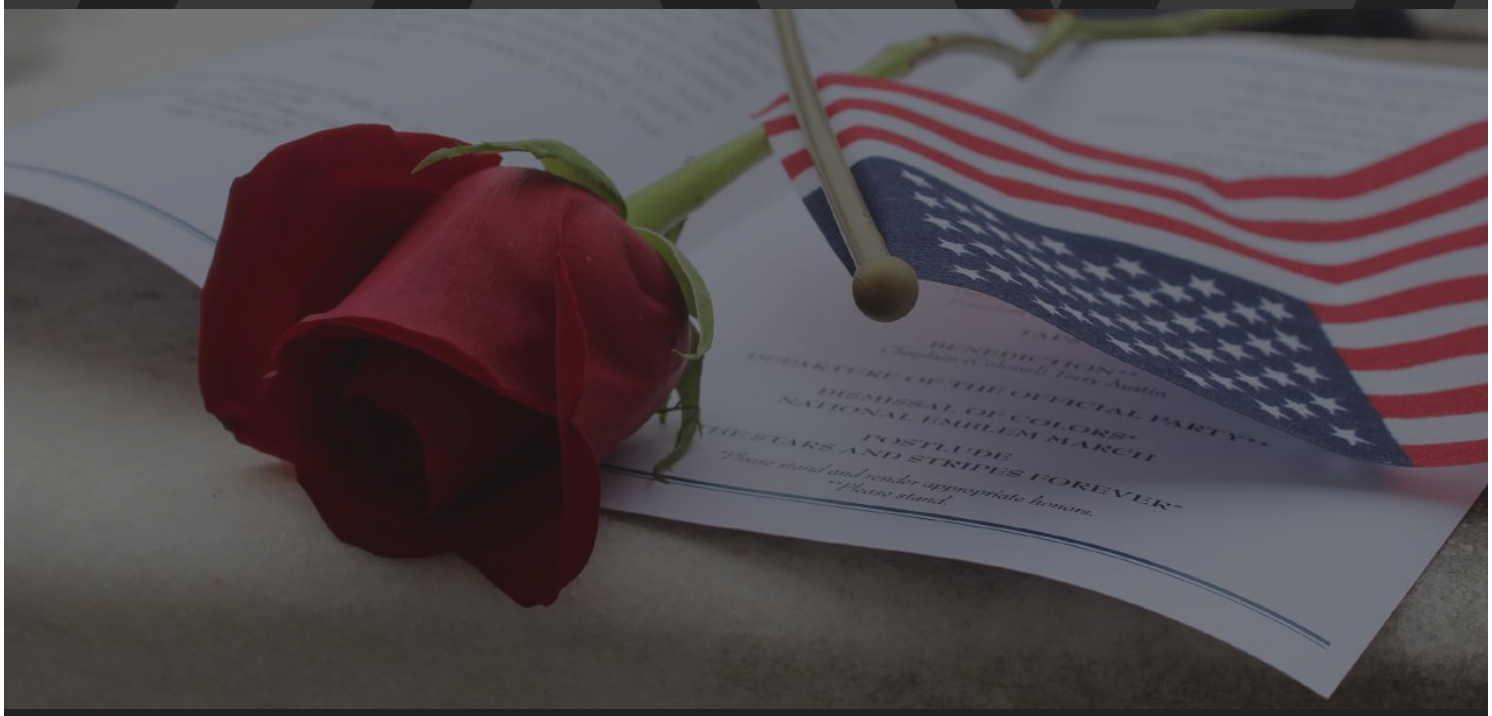


Opinions On Changing the VA's Motto:

"To care for him who has borne the battle and for his widow and his orphan."



//SEXUAL TRAUMA AND ASSAULT



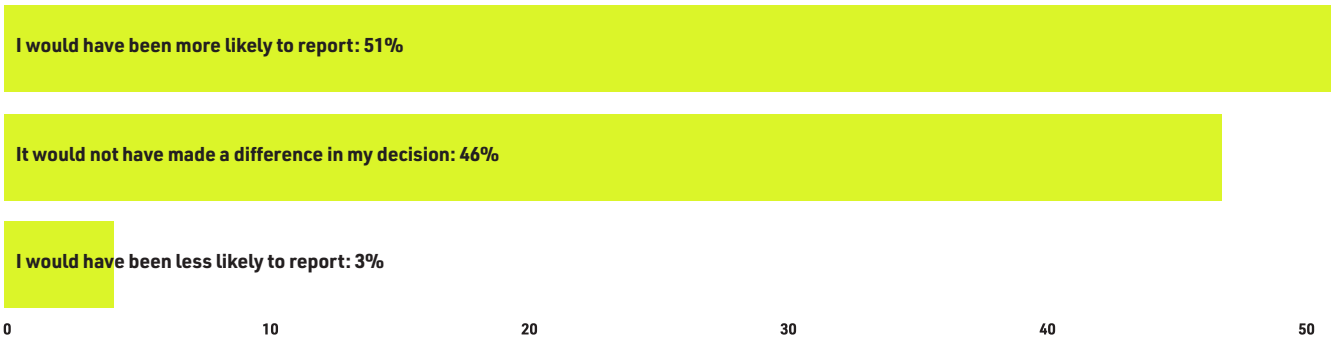
Military sexual trauma affects an estimated 1 in 4 women veterans and 1 in 100 male veterans, according to the VA. While there has been much attention on the issue from Department of Defense and VA, sexual assault continues to plague the services. By better understanding the past experience of these survivors, IAVA can better combat sexual assault in the future.

8%
are a survivor of military sexual assault.

29%
of those assaulted reported it.

66%
experienced any kind of retaliation after reporting.

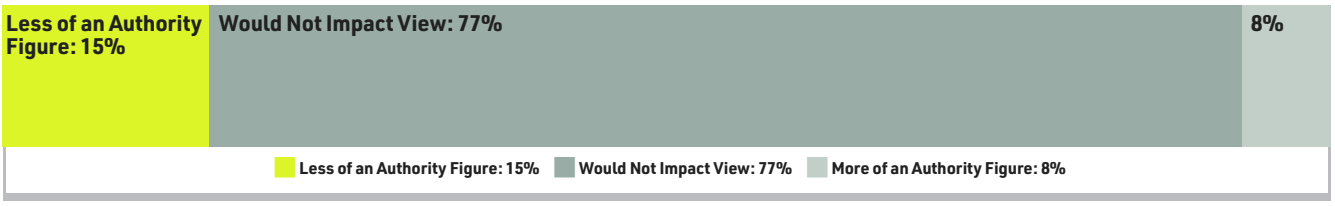
If instead of your commander, a trained military prosecutor had the authority to make the decision to move forward with your case, would it have impacted your decision to report?



61%

Do not believe that Department of Defense is effectively addressing the problem of military sexual assault.

If the final decision to send someone to court martial for military sexual assault was a trained military prosecutor instead of the commanding officer, would you view the commander as:



Top 3 reasons Survivors Did Not Report the Crime:

1. Did not think anything would be done
2. Concerned about impact on my career
3. Concerned that my peers would treat me differently

//RATING VA HEALTH CARE

Problems have plagued VA for quite some time. While there has been much progress legislatively and administratively to ease access to care for veterans at VA, we often hear from IAVA members that their experiences are vastly different. Creating a standardized system of care across all VAs is the ultimate goal, and every year we hear IAVA members ask for VA reform as a top priority.

44% support the expansion of privatizing care at VA.

81% are enrolled in VA health care.

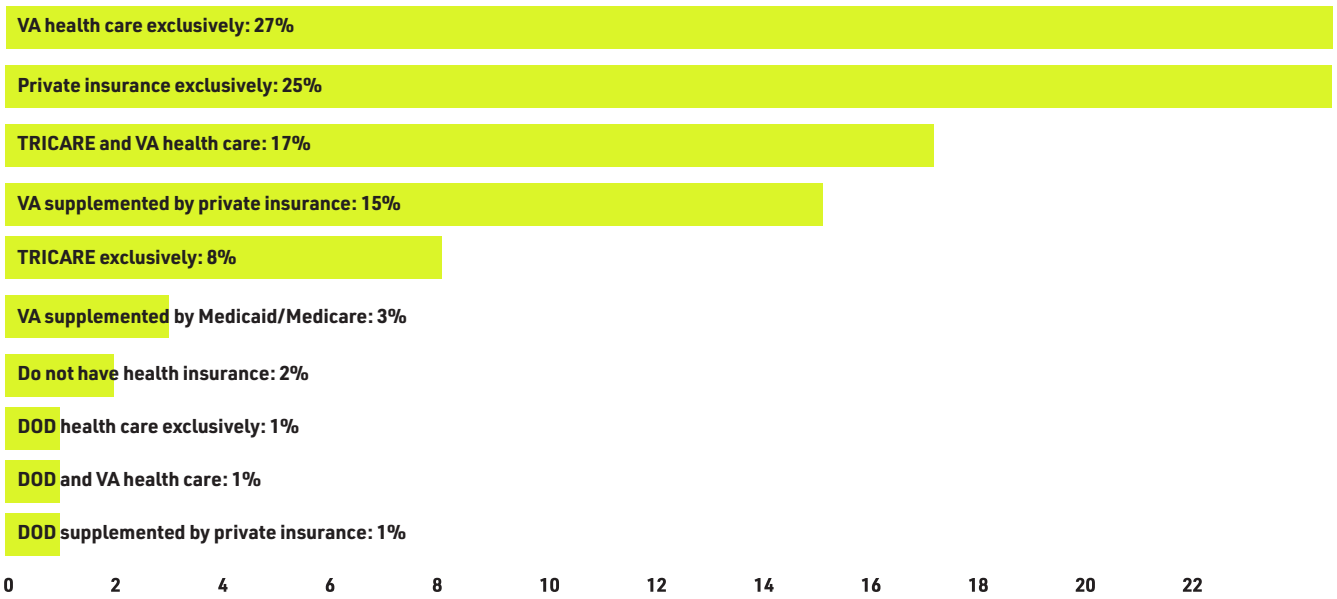
81% rate VA care as average or above average.

Top 3 reforms needed to address improvements to VA health care:

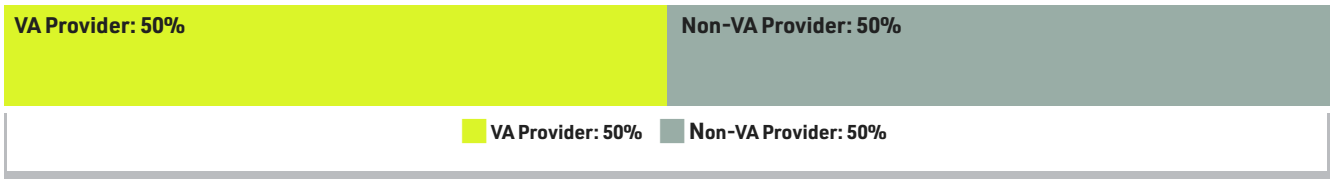
1. Reduce paperwork and bureaucracy to access care
2. Reform hiring and firing practices to improve accountability
3. Consolidate Community Care programs

68% are receiving VA benefits other than health care.

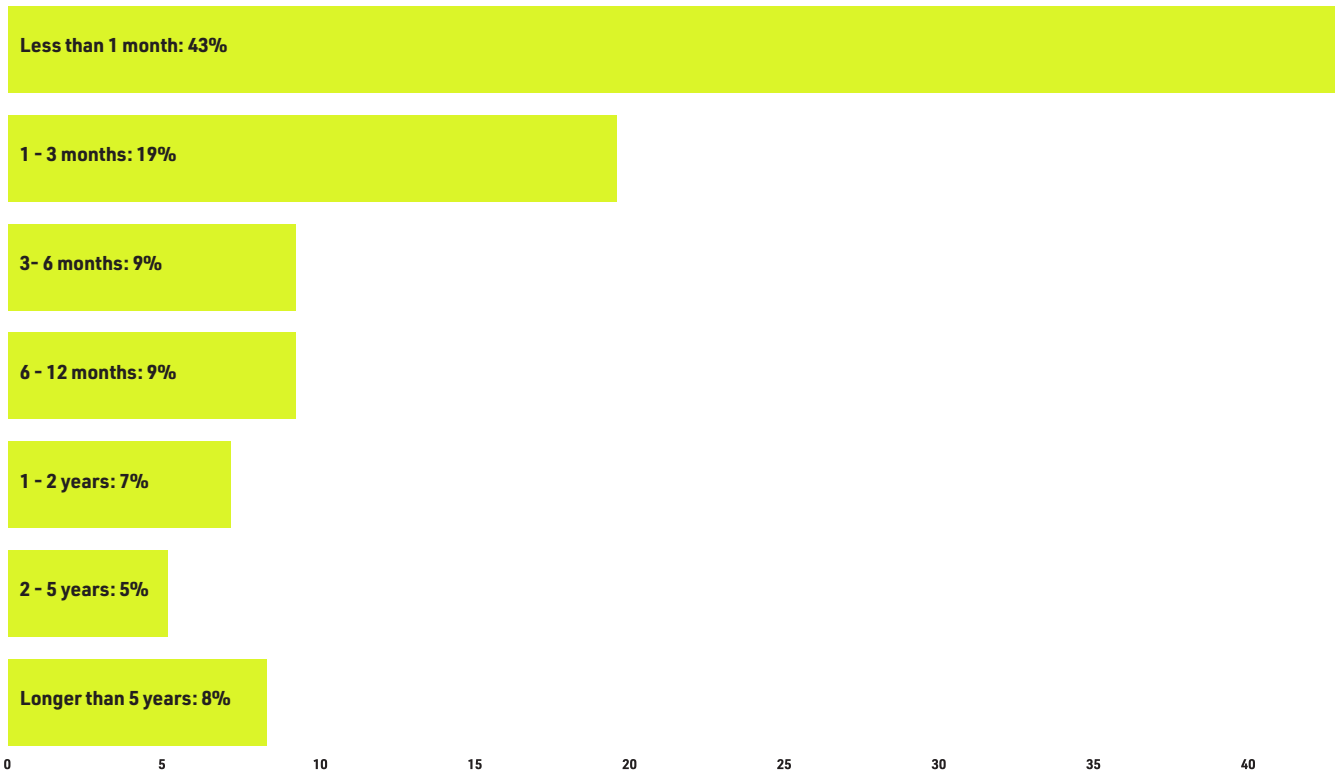
Health Care Sources:



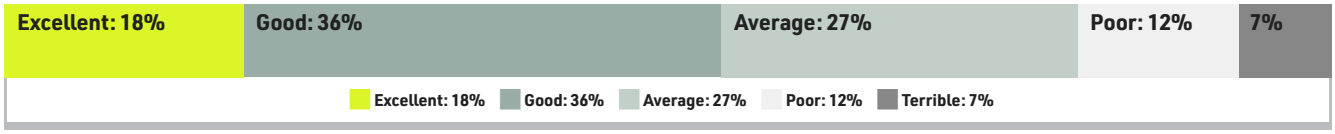
Who is your primary source of care?



When was the last time you sought health care from the VA?



Rate your overall experience with VA health care:



Top 3 Reasons Not Enrolled in VA Health Care:

1. Have other health benefits

2. Other veterans need the benefits more

3. Prefer private sector provider

Please rate your level of agreement with the following statements:

Clinicians provide quality care to veterans:

Rate your overall experience with VA health care:

Non-VA clinicians

Clinicians understand the medical needs of veterans:

VA clinicians

Non-VA clinicians

Rate your level of satisfaction with the following providers:

VA primary care provider

VA specialty care

VA mental health provider

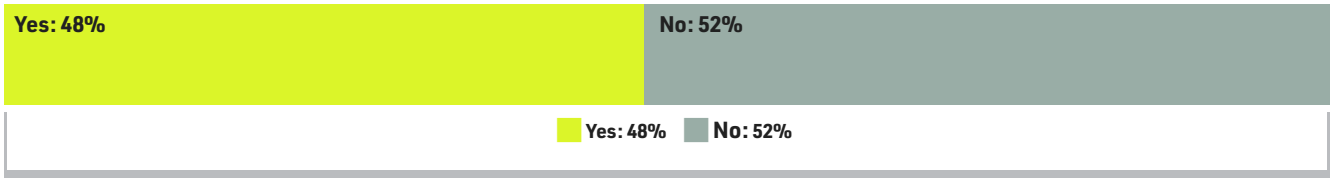
Top 3 Reasons to Use Non-VA Provider as Primary Source of Care:

1. Convenience
2. Higher quality of care
3. Not enrolled in VA health care

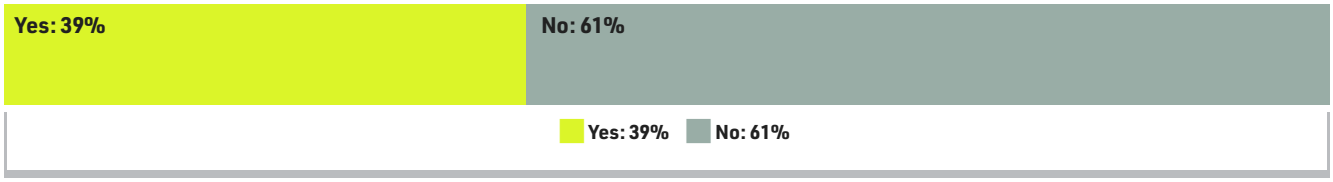
Top 3 Reasons to Use VA Provider as Primary Source of Care:

1. Health care is free
2. My only source of health care
3. Provider understands military service

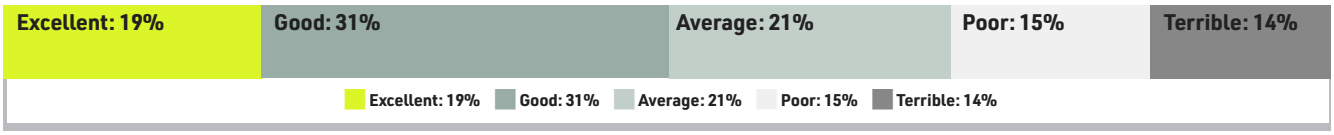
Are you familiar with the VA Choice Card Program?



Have you used the VA Choice Card Program?



Please rate your experience with the Choice program

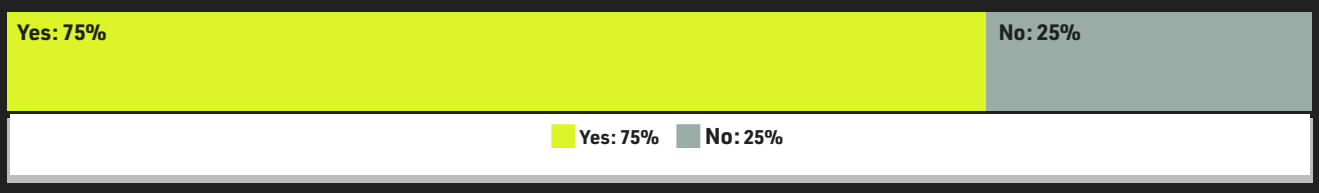


84% Have not heard of the VA MISSION Act and the changes it will make to the VA system.

//RATING VA BENEFITS

While many think of health care when it comes to VA, many veterans and their families rely on VA for earned benefits such as pensions and disability compensation. The process to access these earned benefits can be daunting and leave many veterans waiting months or longer for a decision. While progress has been made to update the system, long wait times and a lagging technology system continue to plague veterans waiting on their earned benefits.

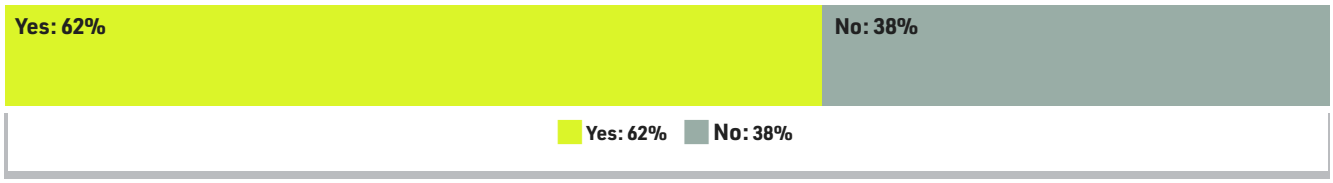
Do you have a service-connected disability rating from VA?



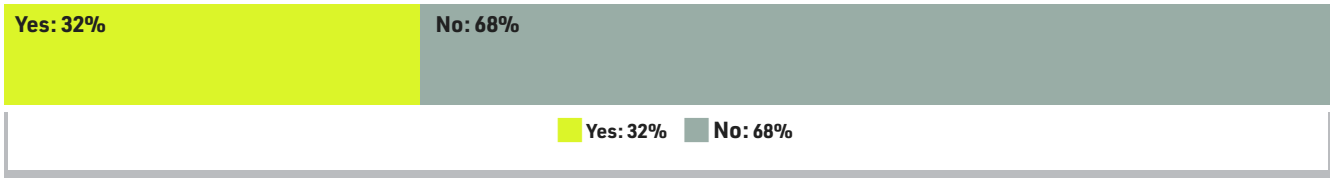
How long did it take for the VA to notify you of a decision on your claim?

For those still waiting, length of pending claim:

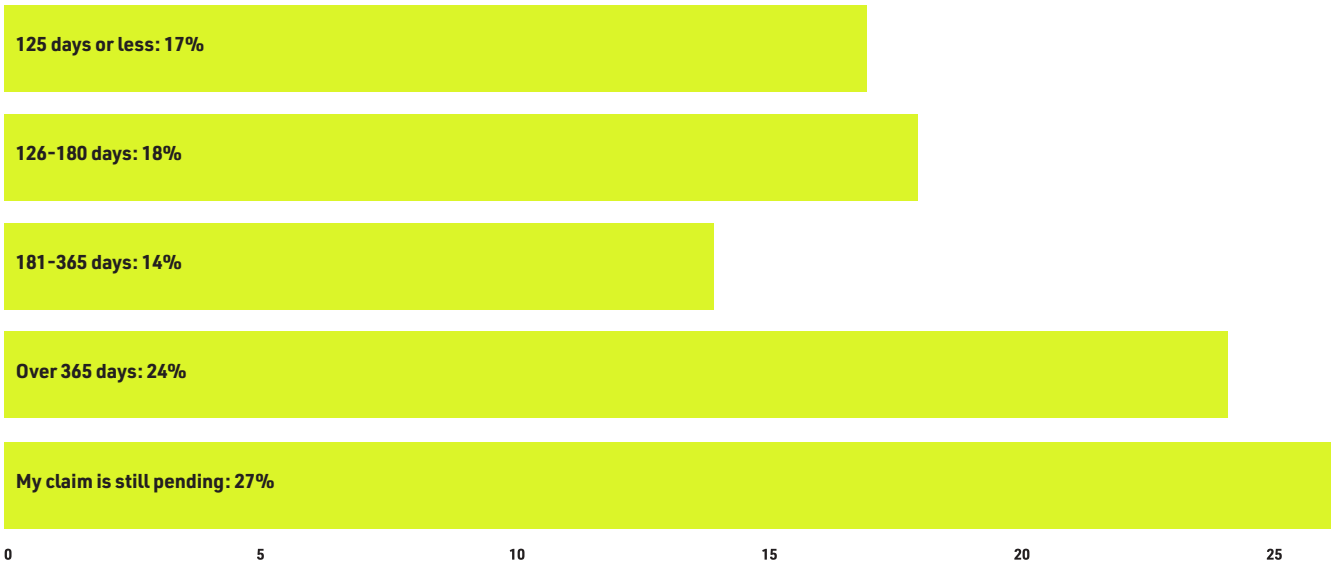
Were you satisfied with the outcome of your claim?



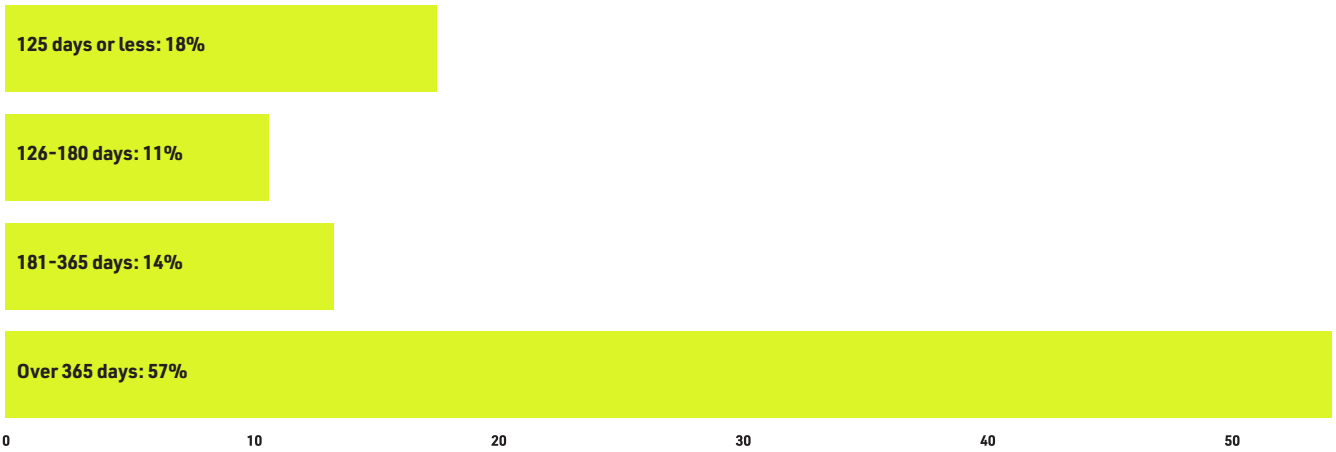
Have you ever appealed a VA disability compensation claim decision?



How long did it take for the VA to notify you of a decision on your claim?

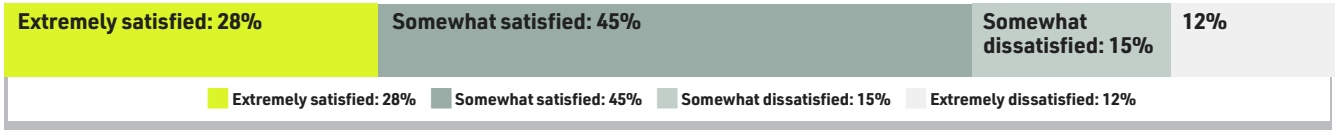


How long did it take for the VA to notify you of a decision on your claim?

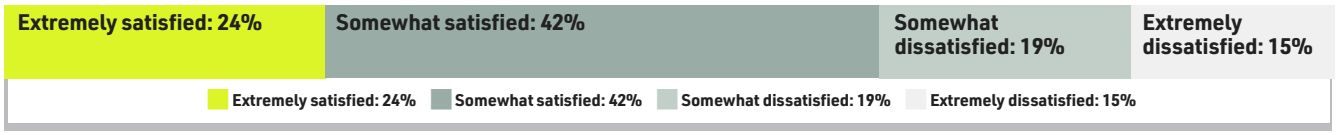


Please rate your satisfaction with the following VA benefits:

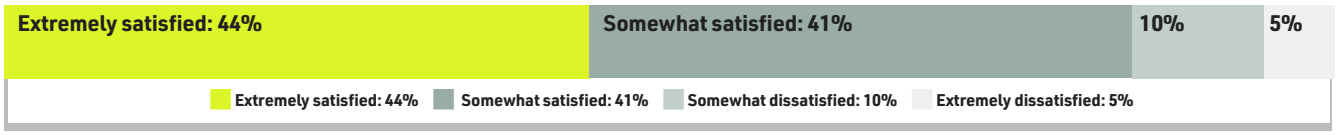
Disability compensation



Pension

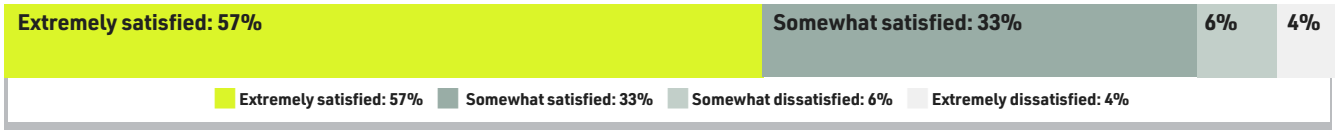


GI Bill/Education Benefits*

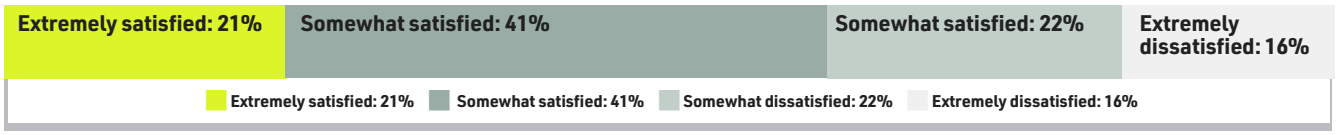


* Responses collected over time frame of VA GI Bill payment scandal around Veterans Day 2018.

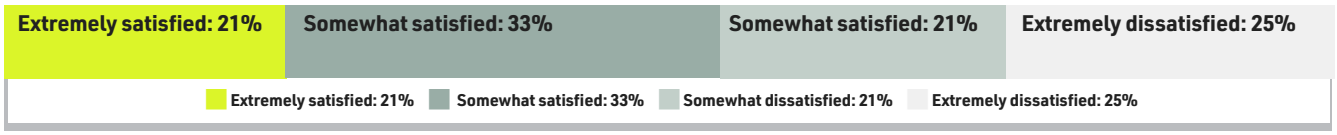
Home loans



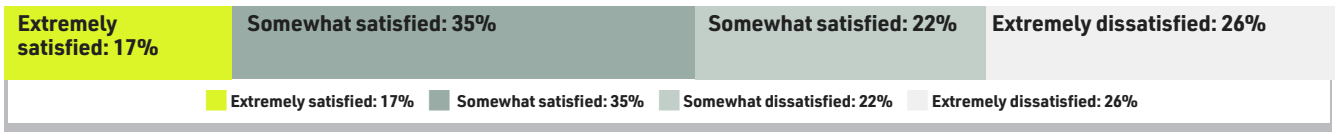
Insurance



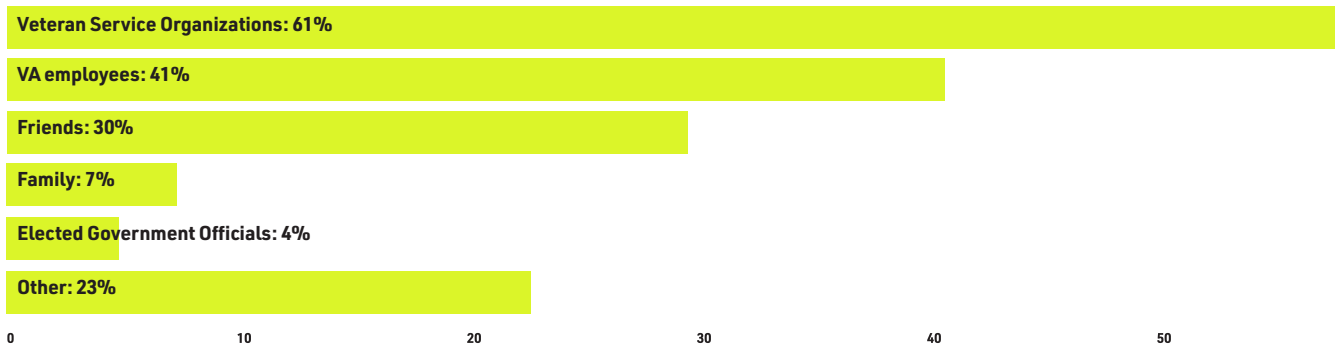
Vocational rehabilitation/employment services



VA Caregiver Benefits



When you have questions about VA benefits, who do you ask?



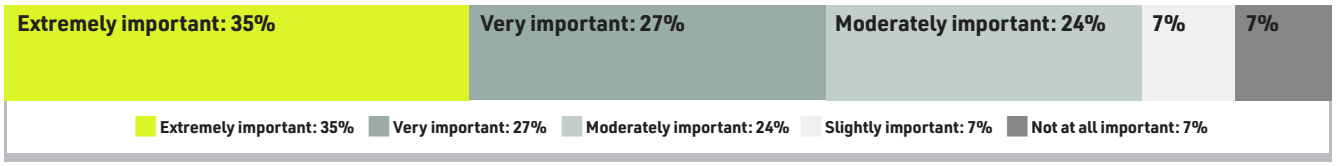
//GI BILL AND EDUCATION

One essential earned benefit is the GI Bill. The post-9/11 GI Bill was a landmark victory in 2008. Since then, almost 2 million veterans and their dependents have used the GI Bill to go to school. While constantly under attack to strip this essential benefit, the Post-9/11 GI Bill sets up the next generation of veterans and their families for success and continues to be a powerful recruitment and retention tool.

How important is the post-9/11 GI Bill for the following:

Military recruitment

Military retention



Successful transition/reintegration of veterans into civilian life

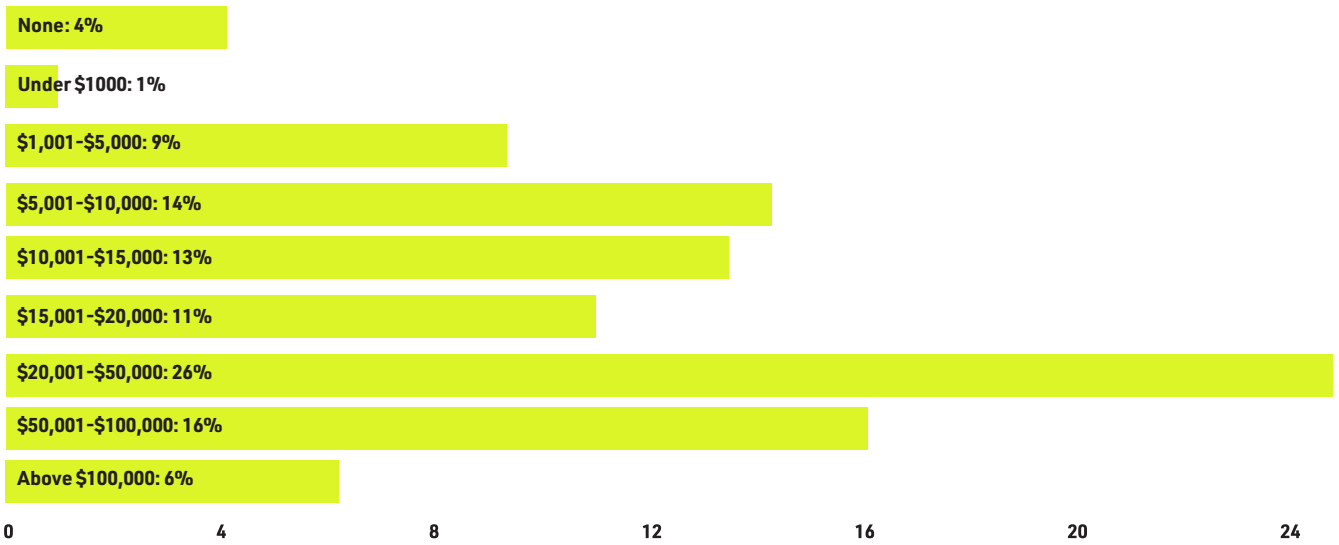
41%

took out loans for school.

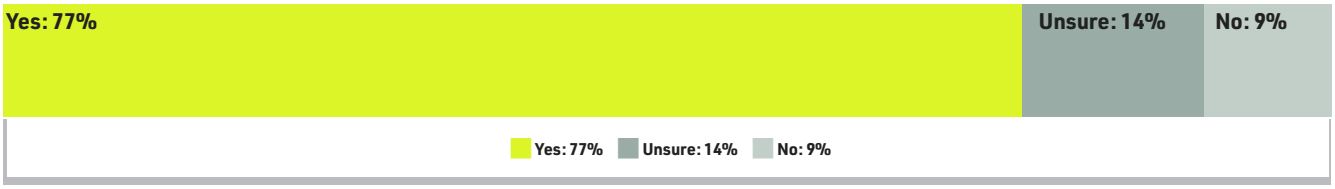
23%

went to for profit school.

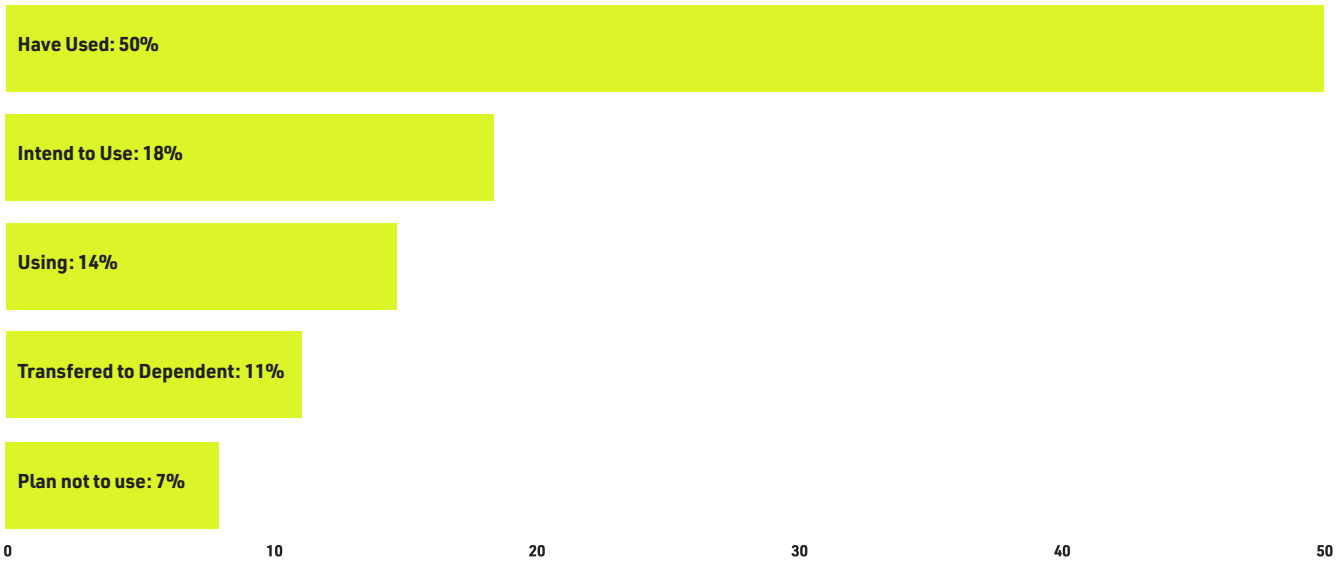
Amount of Student Loan Debt



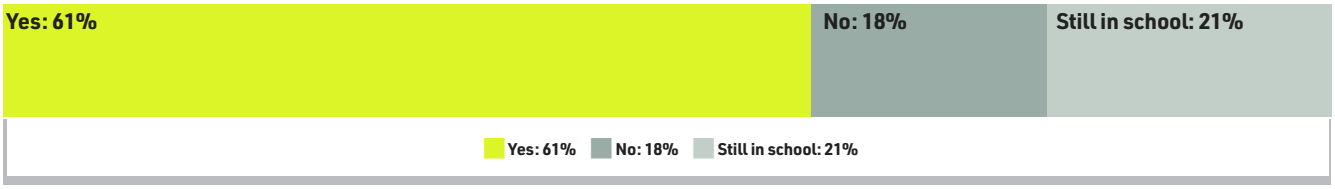
Are you eligible for the post-9/11 GI Bill (Chapter 33)?



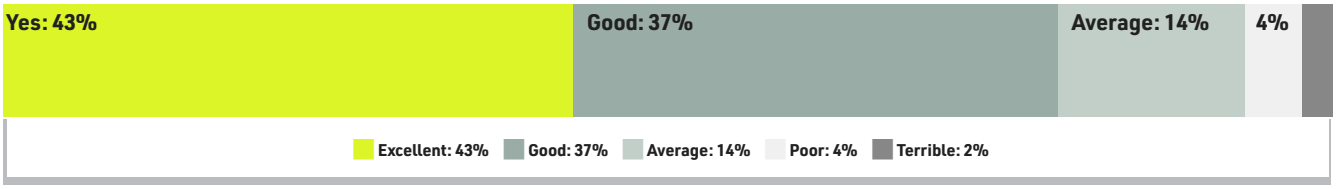
Have you or one of your dependents ever used the post-9/11 GI Bill?



While in school on the post-9/11 GI Bill, did you (or your dependent) graduate?



Overall, how would you rate your experience or your dependent's experience with the post-9/11 GI Bill?

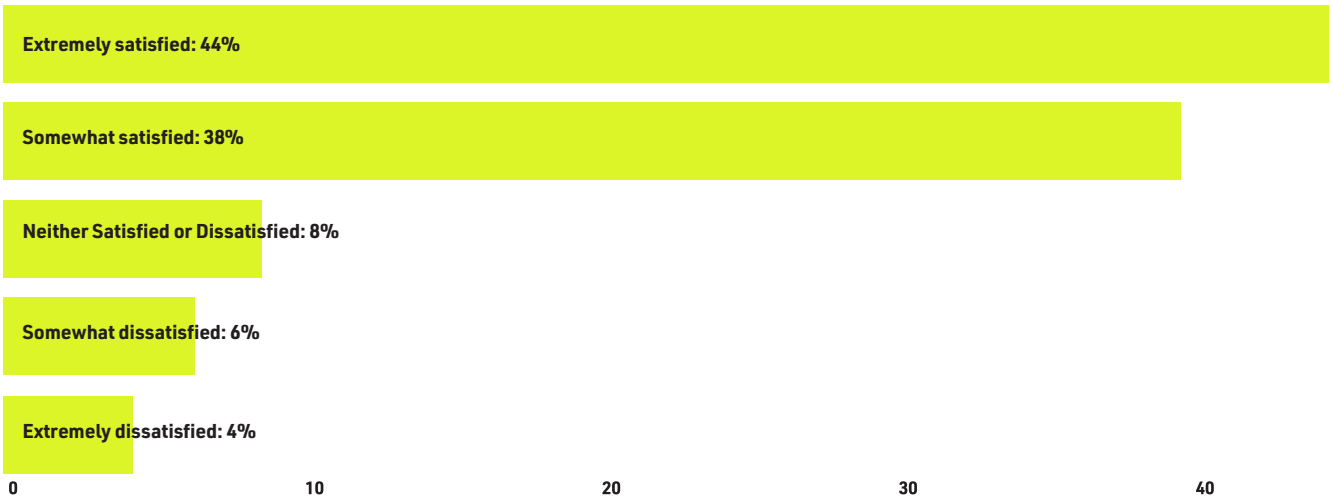


60% Of respondents have pursued a degree since separating from the military

17% Of respondents are currently in school

73% Have already finished degree.

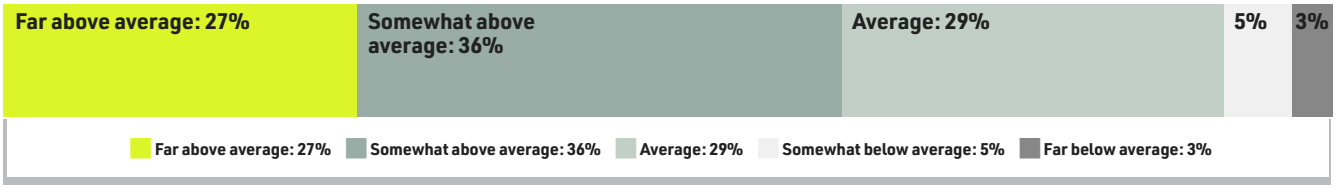
Overall level of satisfaction with your educational program(s):



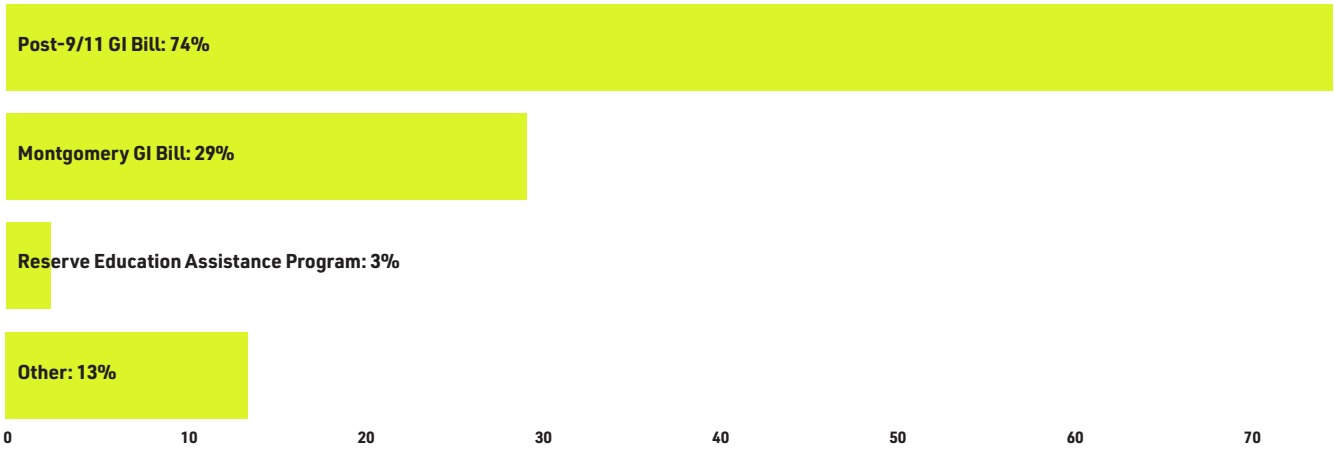
Top 5 Reasons Chose Institution:

1. Acceptance of GI Bill benefits
2. Location in relation to my home
3. Offering of specific program/field of study
4. Veteran-friendly institution
5. Institution's academic reputation/availability of online courses

To what level is/are your school(s) veteran friendly?



VA Benefit Used for Education:



//CANNABIS

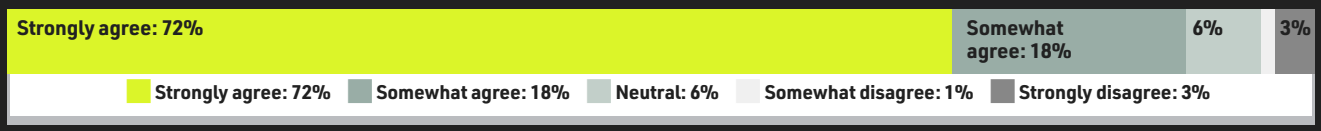
Veterans consistently and passionately have communicated that cannabis offers effective help in tackling some of the most pressing injuries they face when returning from war. Our nation is rapidly moving toward legalizing cannabis, and 33 states now permit medical cannabis. Across party lines, medical cannabis is largely unopposed. Yet our national policies are outdated, research is lacking, and stigma persists.

83% **agree Cannabis should be legal for medicinal purposes.**

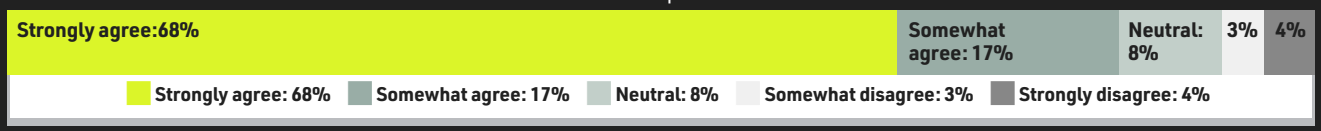
55% **agree Cannabis should be legal for recreational purposes.**

Please indicate your level of agreement with the following statements:

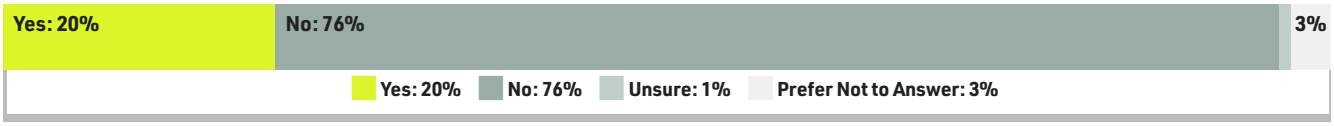
Cannabis should be researched for medicinal uses



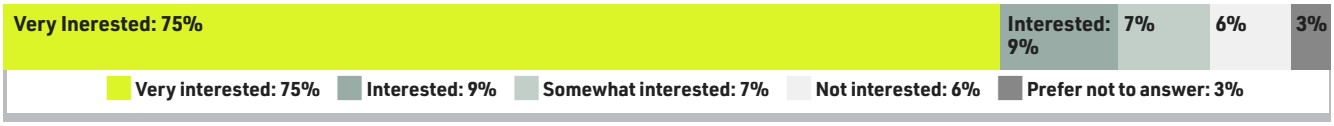
The VA should allow for research into cannabis as a treatment option



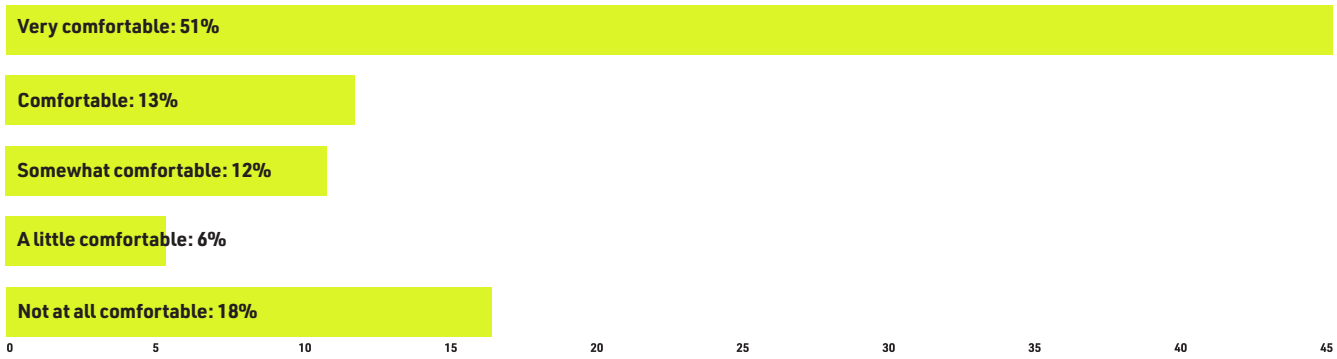
Have you ever used cannabis or other cannabinoid products for medicinal use?



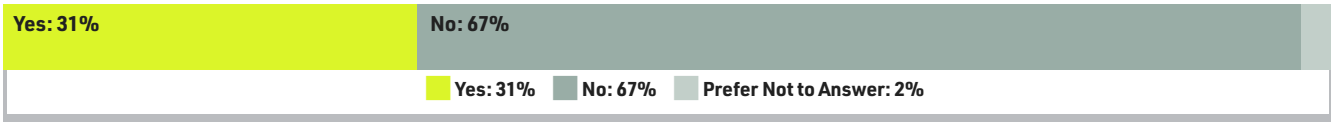
Would you be interested in using cannabis or cannabinoid products as a treatment option if it were available to you?



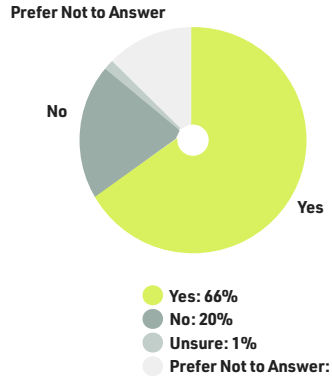
Comfort Discussing Medical Cannabis with Doctors:



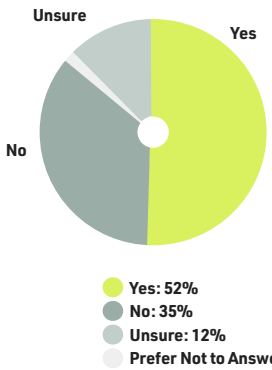
Discussed Medical Cannabis with Doctor



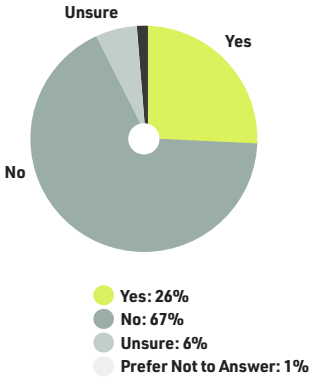
Ever used cannabis recreationally?*



Do you live in state where medical cannabis is legal?



Do you live in a state where recreational cannabis is legal?



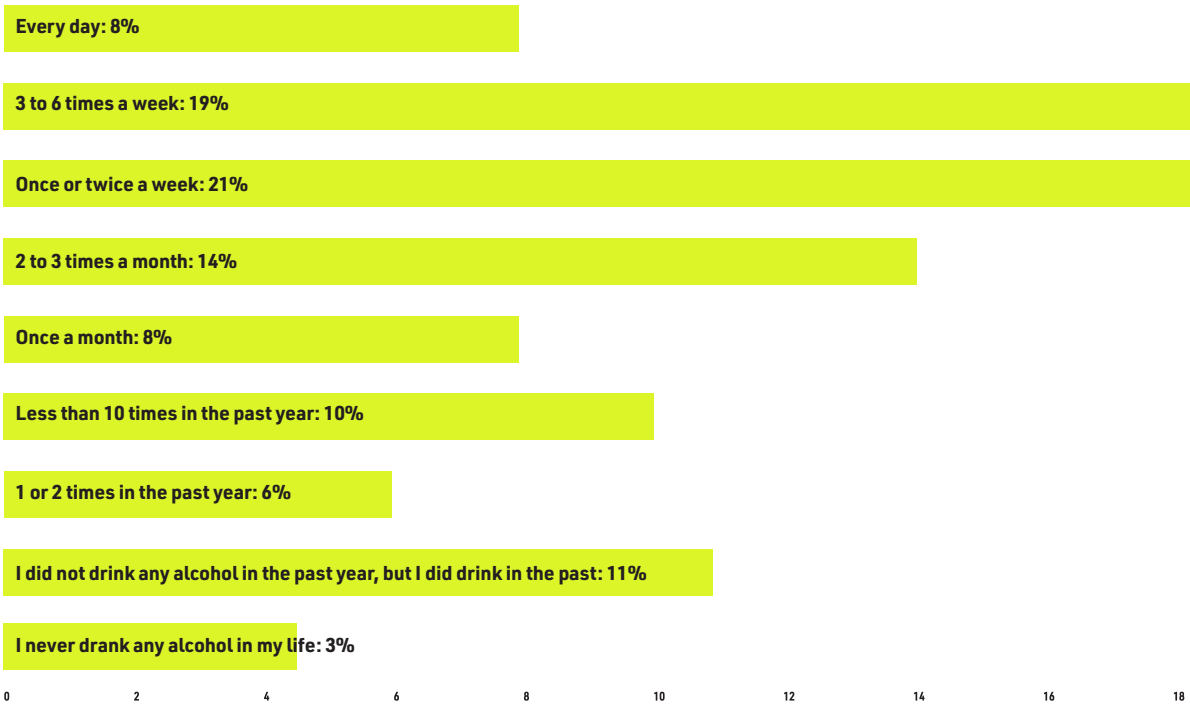
* Of those that have used cannabis medicinally

//TOBACCO AND ALCOHOL

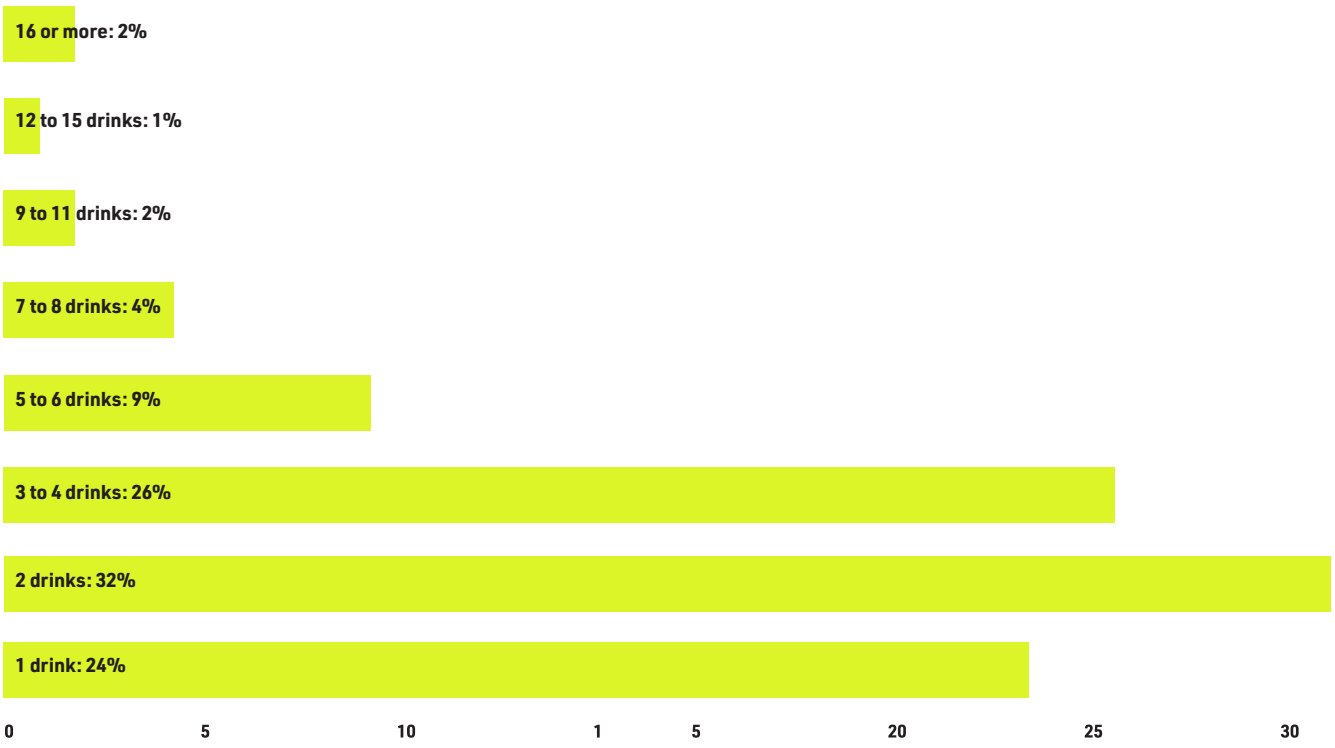
While substance use on its own is not alone harmful in the case of legal substances, substance abuse and long-term daily use can have a myriad of harmful health effects from physical to mental health impacts.

27% **reported alcohol use in line with binge drinking at least one day in the past month.**

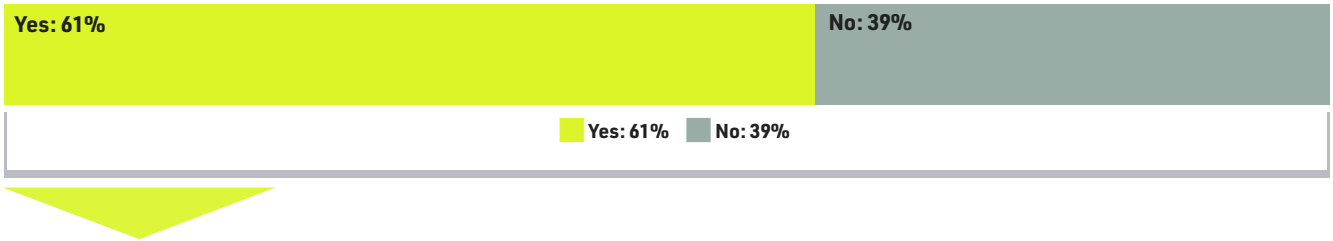
During the last 12 months, how often did you usually have any kind of drink containing alcohol?



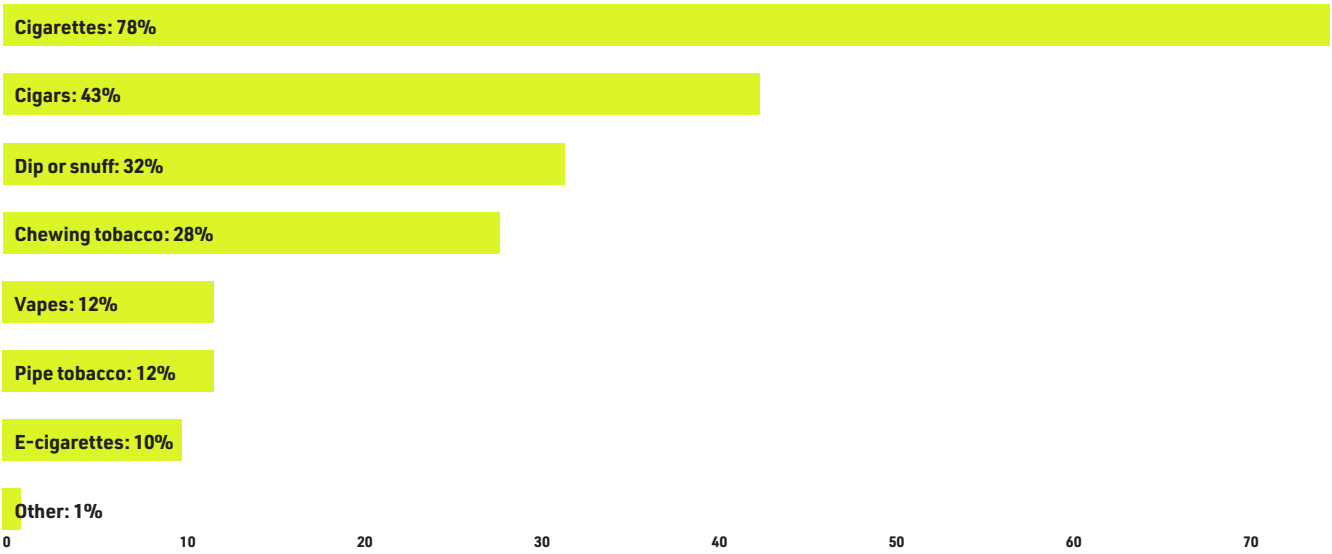
Typical Number of Drinks Consumed during One Day of Alcohol Consumption:



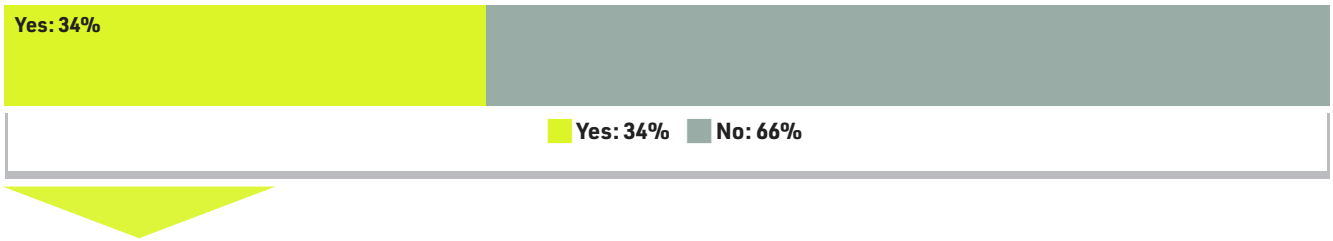
Have you ever used tobacco products?



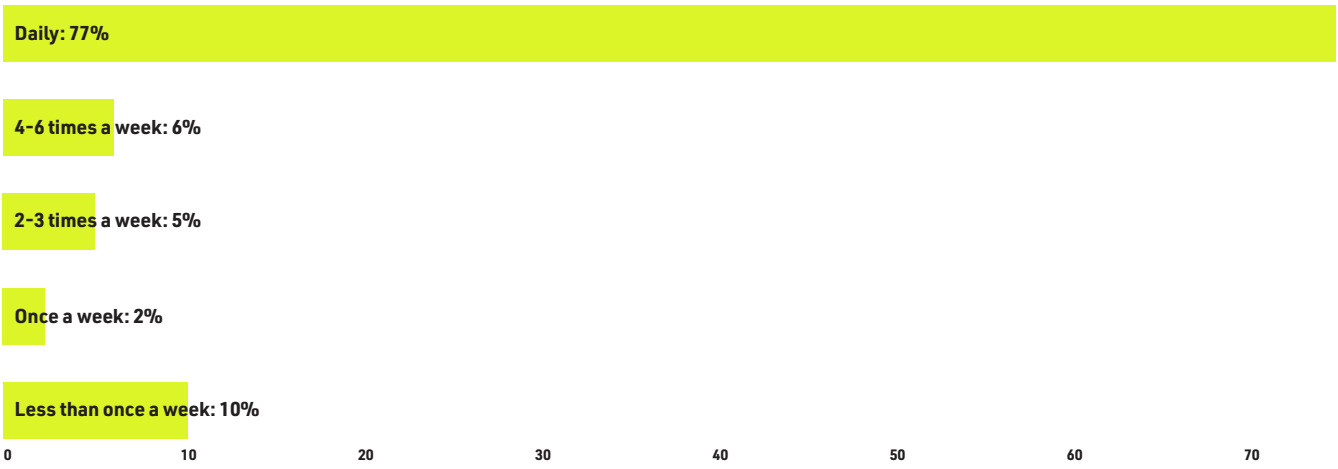
What form of tobacco products have you used?



Do you currently use tobacco products?



How often do you use tobacco products?



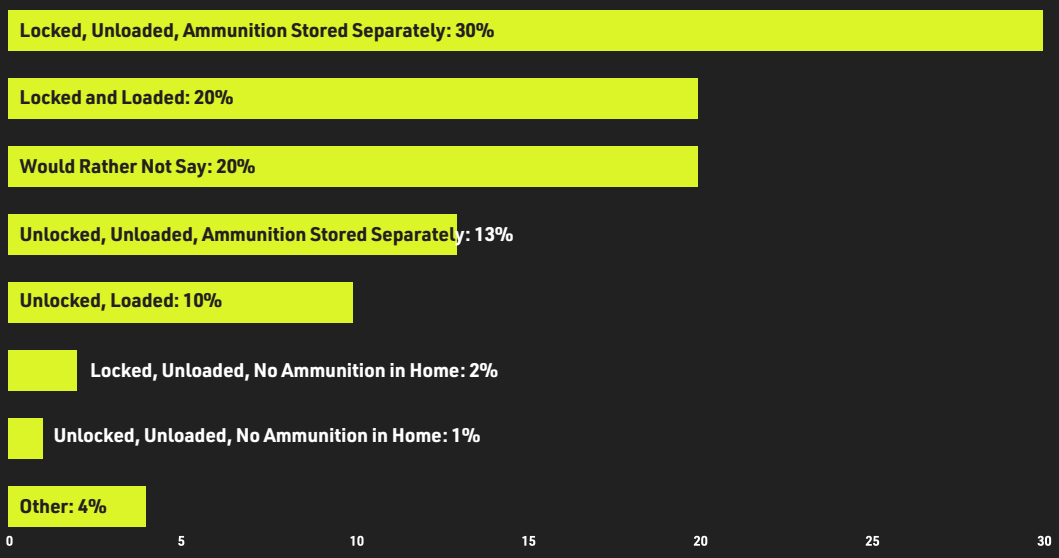
//FIREARM OWNERSHIP

It's a powerful and often politicized topic in today's environment, but firearm ownership and storage is a particularly important topic in the veteran community. Veterans are more likely than their civilian counterparts to own and know how to use a firearm for various reasons. And sadly, about 70 percent of veterans that die by suicide use a firearm as the method. Firearm safety and storage is a continuing topic of conversation in the veteran community, and IAVA members are an important part of that conversation.

68%

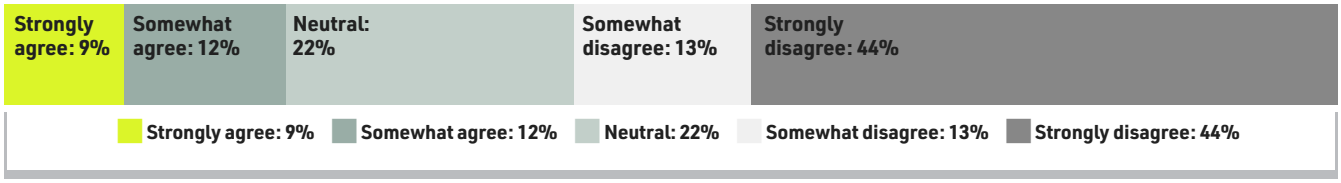
Of respondents own personal firearms

Please select your primary method of storage for your firearm:

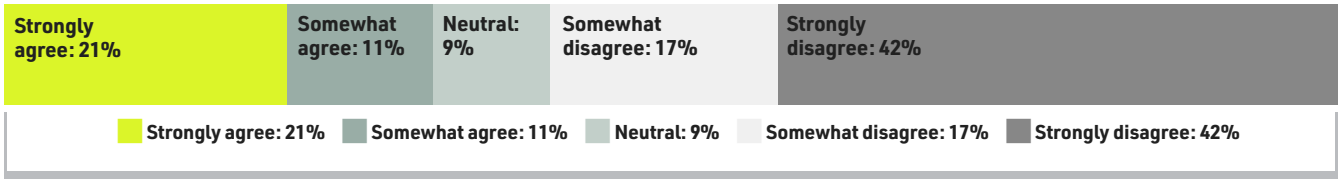


Please indicate your level of agreement with the following:

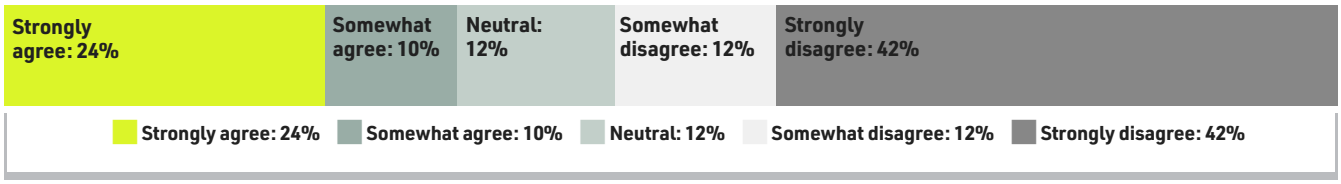
Establishment of community lockers as a means to safely store weapons outside of the home.



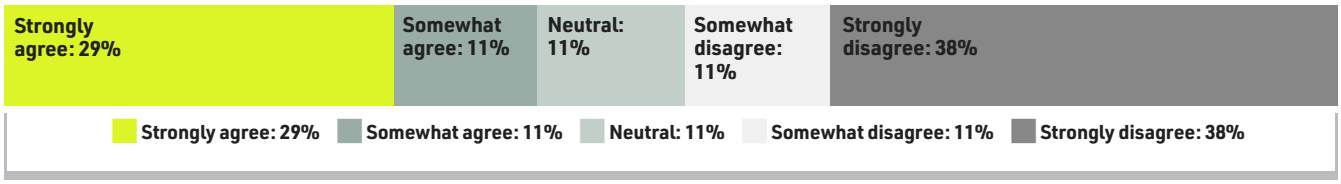
Allowing concealed carry without a permit



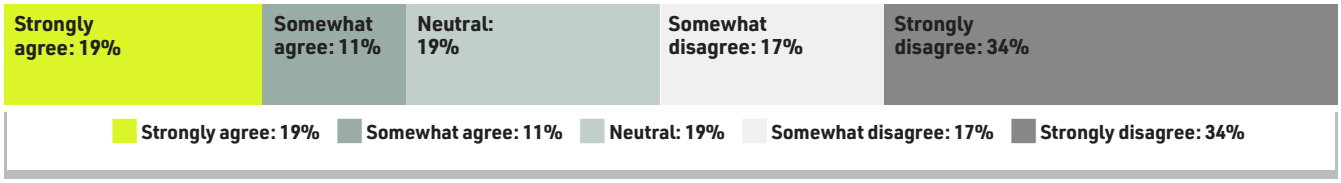
Banning assault-style firearms



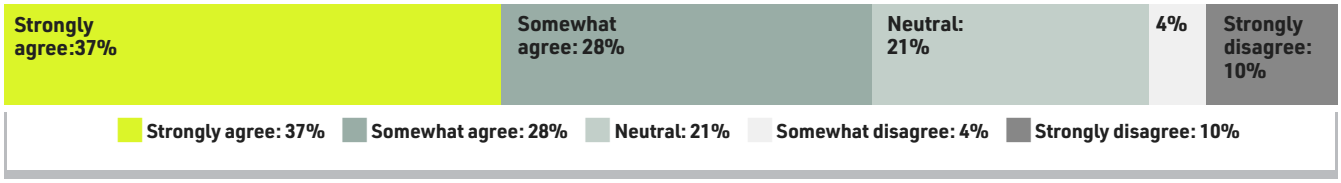
Banning high-capacity magazines



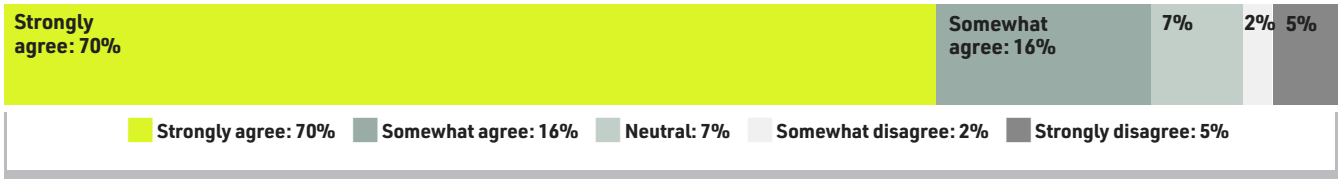
Shortening waiting periods for buying firearms legally



Distribution of trigger locks at medical centers, sporting good/gun stores and community centers.



Universal background checks for individuals purchasing firearms



//MENTAL HEALTH

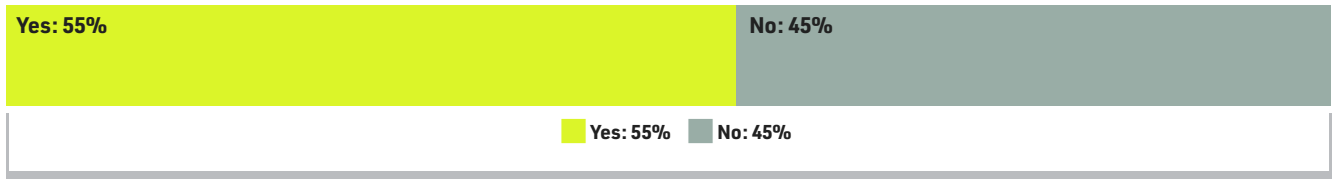
Mental health injuries impact the post-9/11 generation at an alarming rate. Among IAVA members, mental health injuries like PTSD, anxiety and depression are higher than even VA reported numbers for the post-9/11 generation. Ensuring access to effective treatment options for mental health injuries is paramount to the long term health of post-9/11 veterans.

84% **Believe that the military/veteran community are not getting the care they need for mental health injuries.**

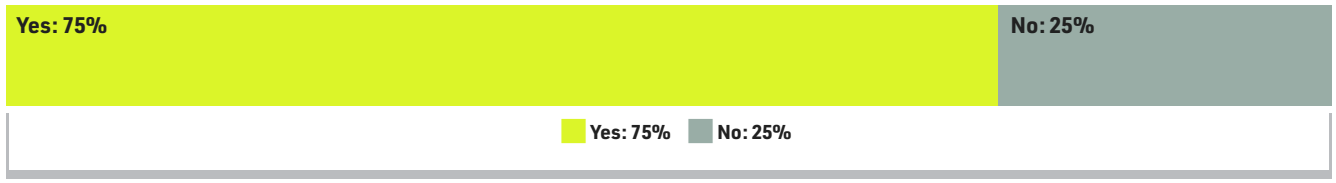
Top 3 Reasons the military/veteran community not getting the mental health care they need

1. Stigma of seeking help is too great
2. Access to care but not quality care
3. Access but not seeking care

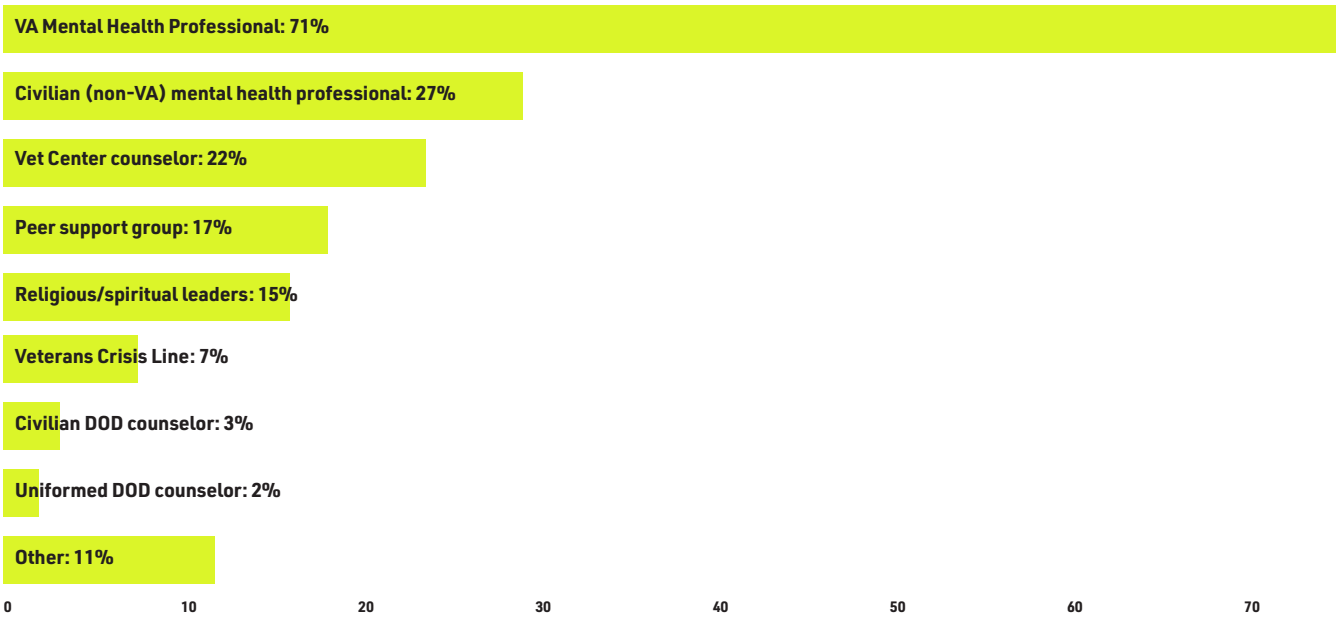
Do you have a service-connected mental health injury?



Are you seeking care for your service-connected mental health



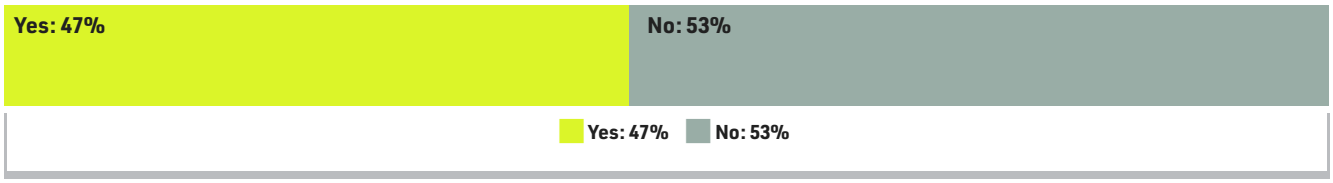
Where are you seeking care?



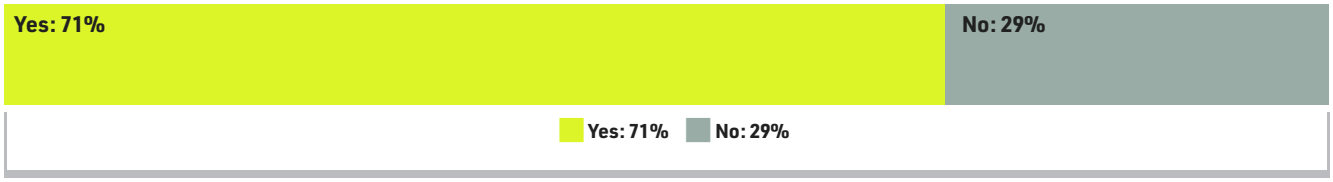
Top 3 Reasons for Not Seeking Care:

1. No mental health professional that understands my needs
2. Started treatment but decided to stop
3. Concerned it might affect my career

Has anyone close to you suggested you seek care for a mental health injury?



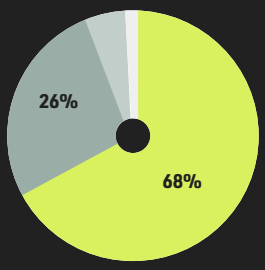
Have you sought help as a result of someone close to you suggesting you seek care for a mental health injury?



//GENERAL HEALTH

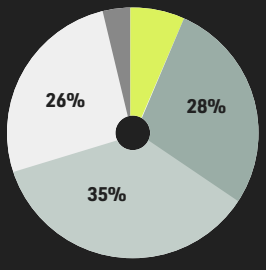
Over 50,000 service members have been wounded in action in Iraq and Afghanistan according to Department of Defense. However, many service members came home from war only to develop wounds of war after transitioning. Continuing issues such as chronic pain, hearing loss, and mental health injuries are of great concern for the post-9/11 generation. IAVA members know this well.

How would you rate your health before joining the military?



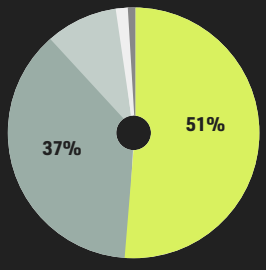
- Excellent: 68%
- Good: 26%
- Average: 5%
- Poor: 1%
- Terrible: 0.1%

How do you rate your current overall health?



- Excellent: 7%
- Good: 28%
- Average: 35%
- Poor: 26%
- Terrible: 4%

How important is maintaining your health to you?

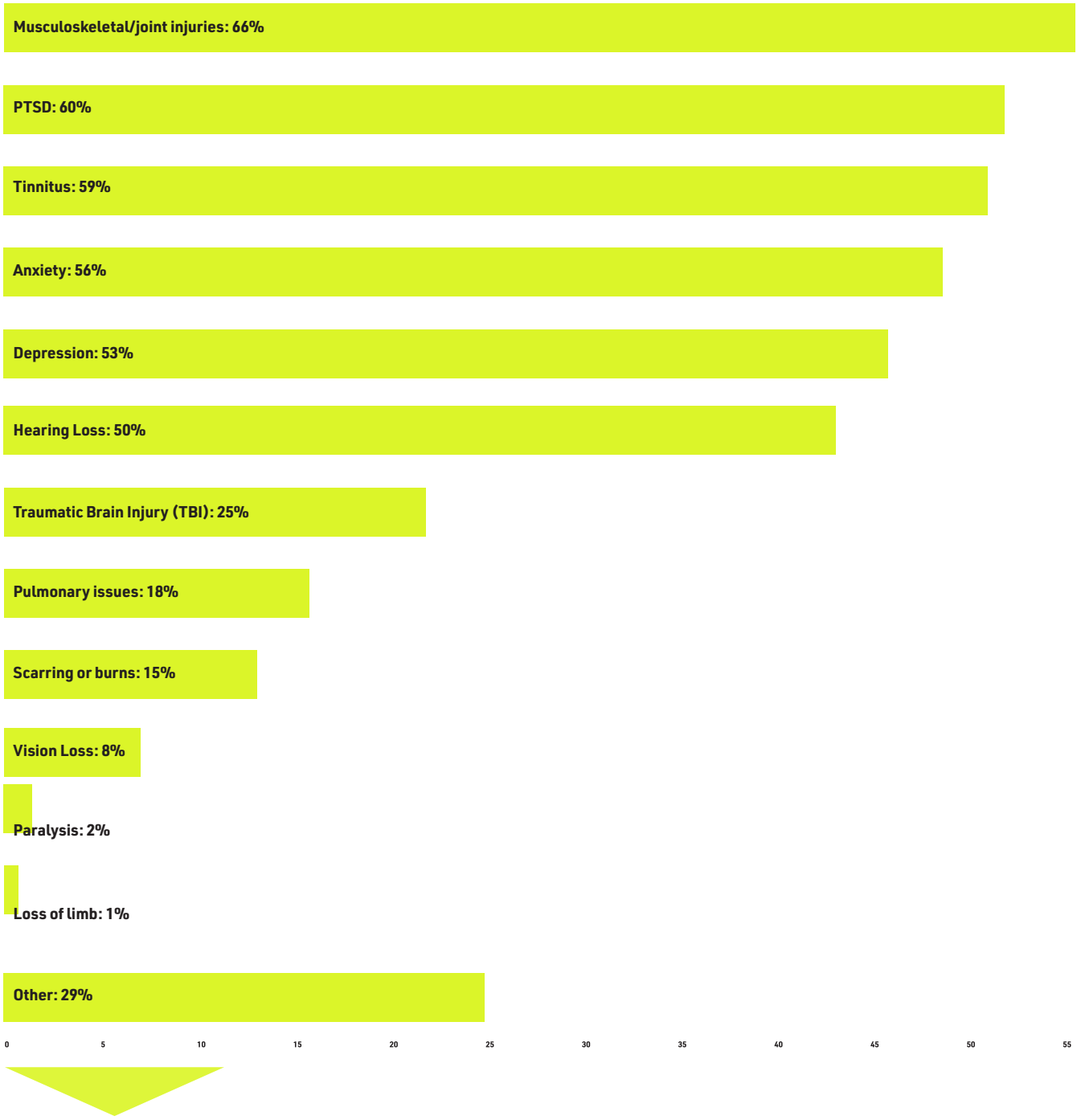


- Extremely important: 51%
- Very important: 37%
- Moderately important: 10%
- Slightly important: 1%
- Not at all important: 1%

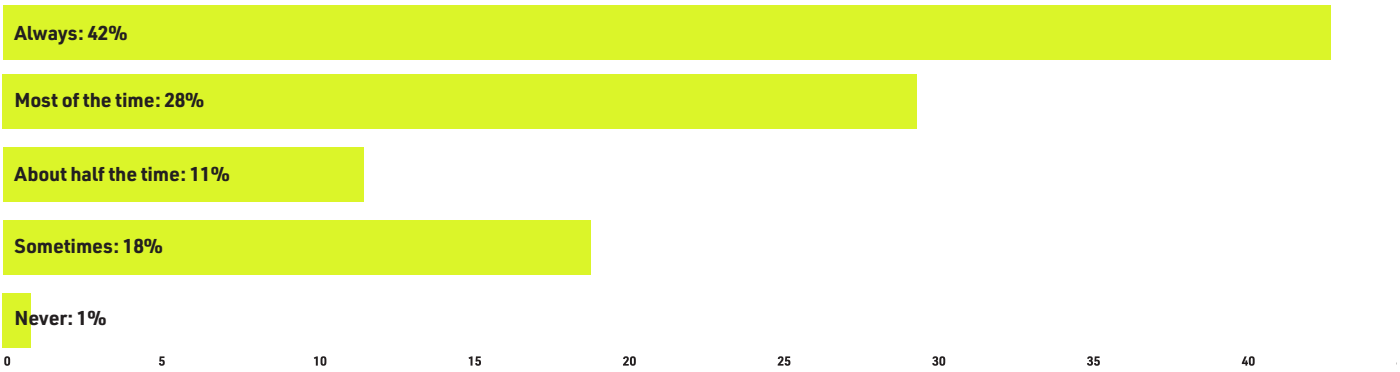
86% have experienced a service-connected injury or illness.

72% suffer from chronic pain due to a service-connected injury.

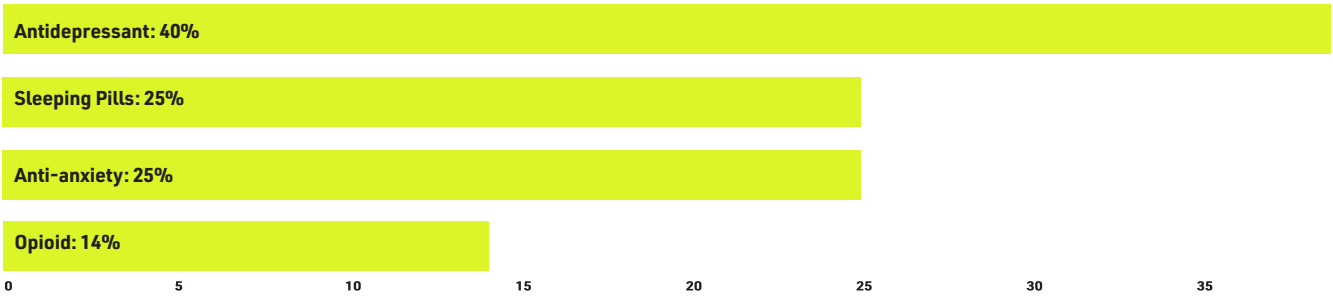
Service Related Injuries:



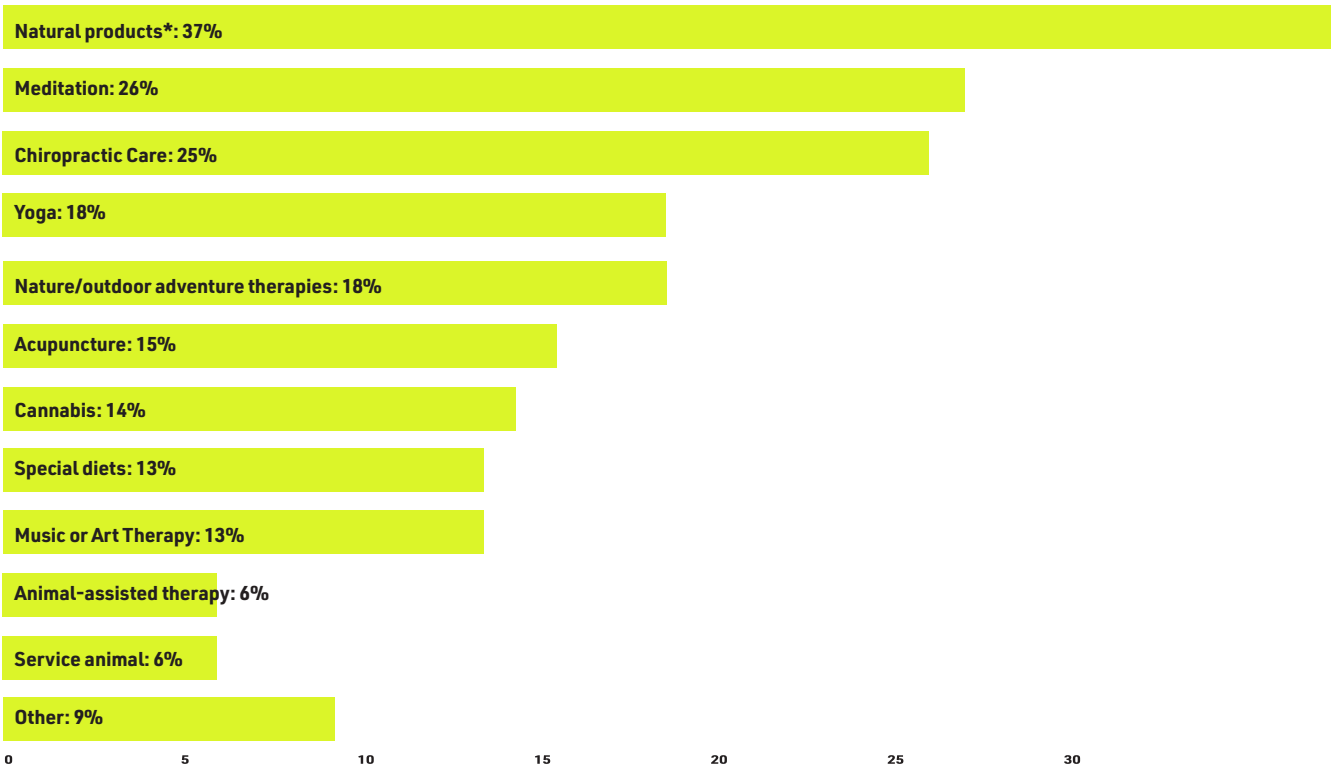
How often do your service-connected injuries affect your daily life?



Have you been prescribed and are you taking any of the following drugs for a service-related injury?

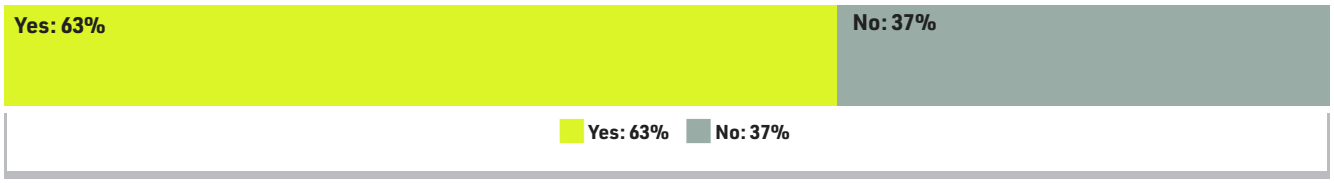


Alternative Therapies Used in Care Regimen:

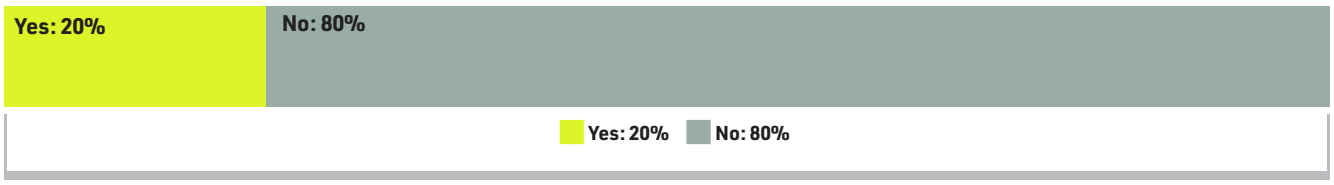


*i.e. dietary supplements, vitamins, probiotics

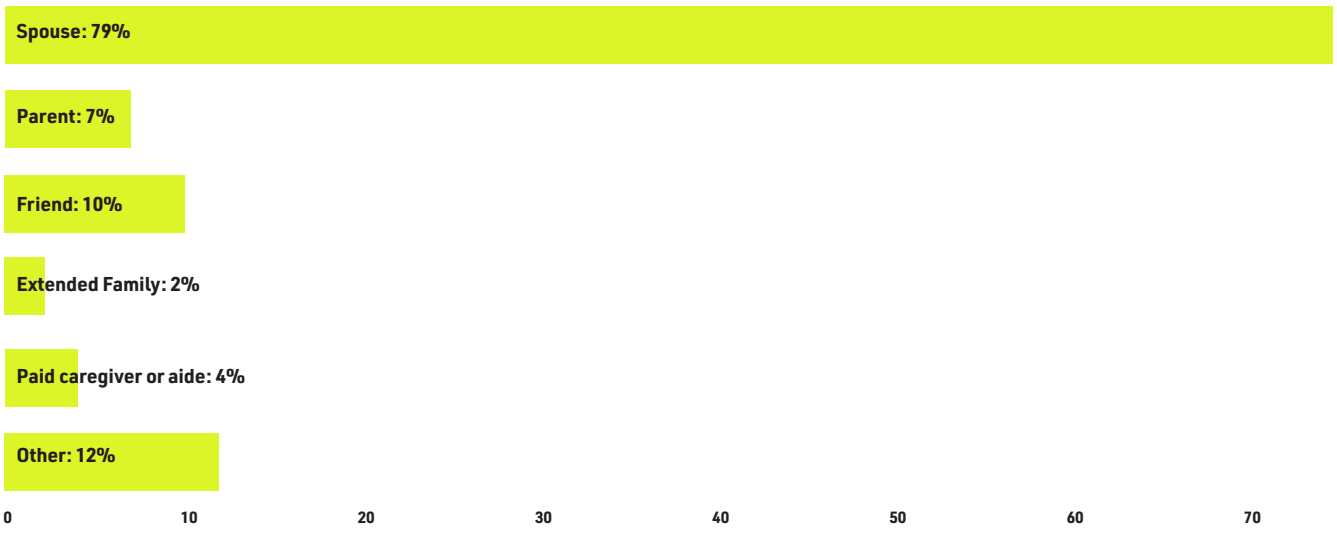
Do you use any of these alternative therapies to treat an injury you received as a result of your service?



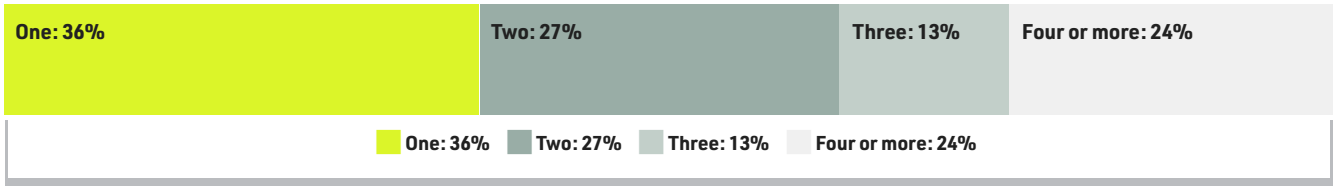
Do you currently have someone assisting you with some aspect of your daily health needs?



Is that person:



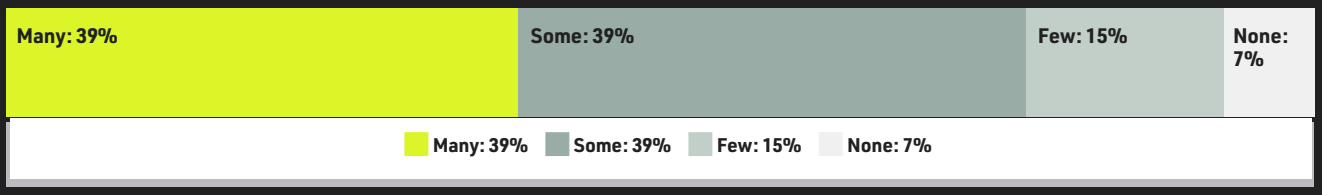
How many daily activities do you need assistance with?



//TRANSITION EXPERIENCES

The transition from military to civilian life is often a challenging time for IAVA members. We know a successful transition experience can set up many for a life of continued success. However, a difficult transition experience can have the opposite effect.

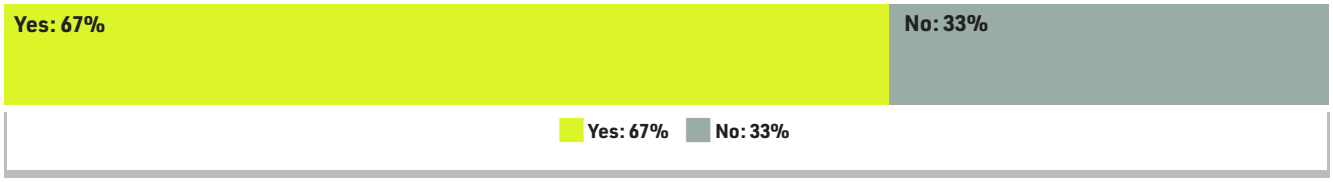
Did you experience challenges when transitioning out of the military?



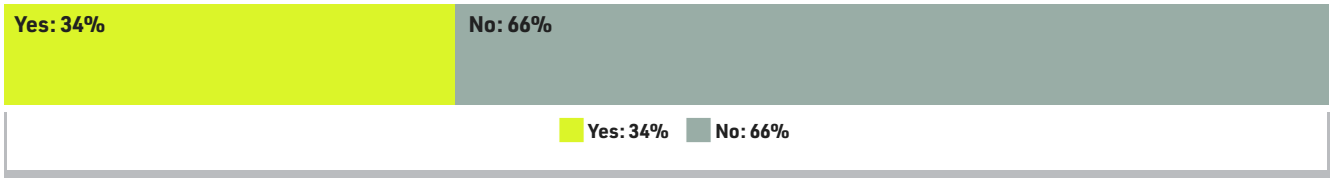
Top 5 Transition challenges

1. Difficulty navigating VA benefits
2. Loss of identity/purpose
3. Health Concerns (Mental or Physical)
4. Relating to non-veteran civilians/Reintegrating with community
5. Finding/keeping employment as a civilian

Were you prepared to manage your finances immediately after your transition out of the military?

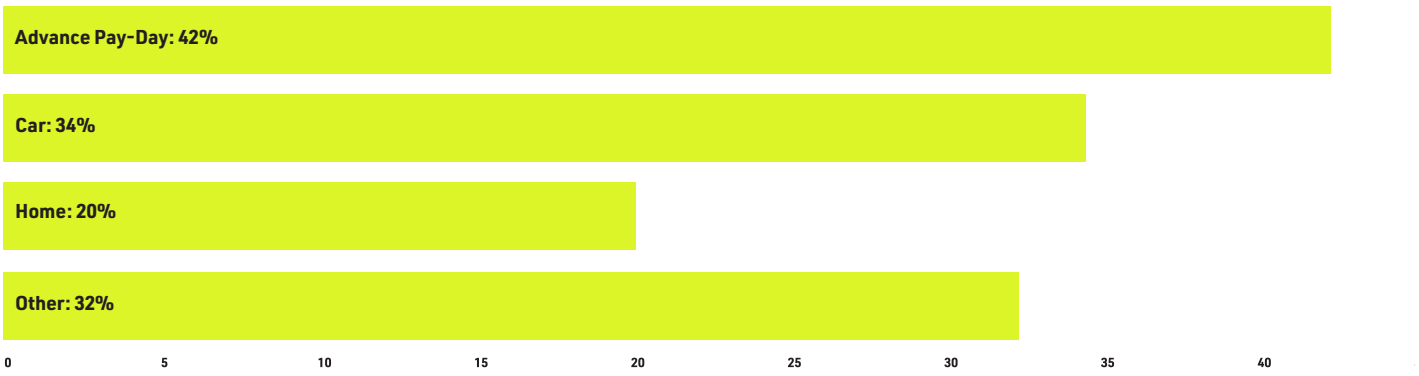


In a typical month is it difficult to cover your expenses and pay all your bills?



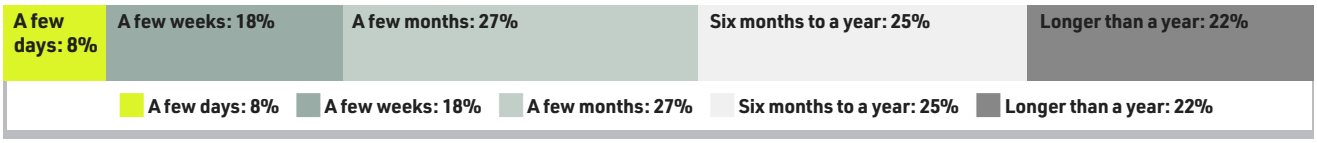
35% Believe they may have or did experience predatory loan practices, described as deceptive, unfair, or fraudulent practices.

Predatory Loan Type

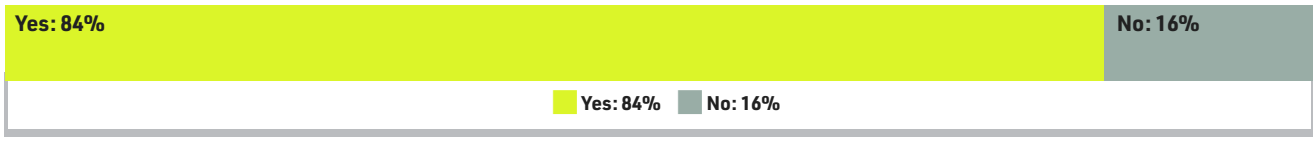


22% Did not have a permanent place to live when transitioned out of the military

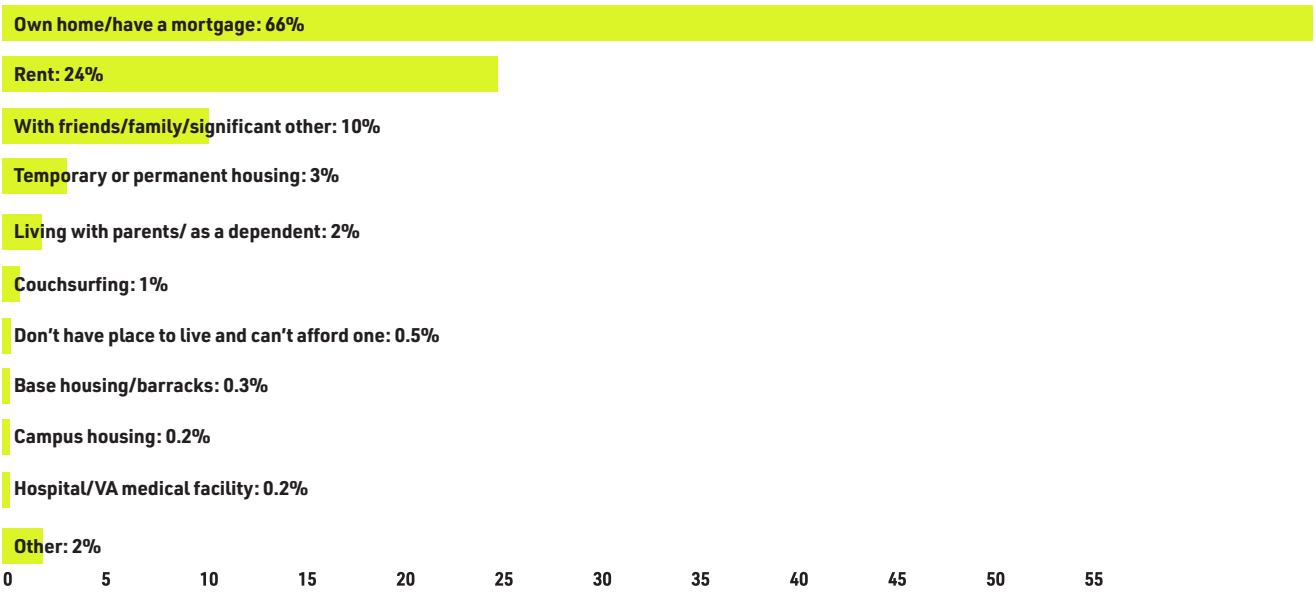
How long were you without a permanent place to live?



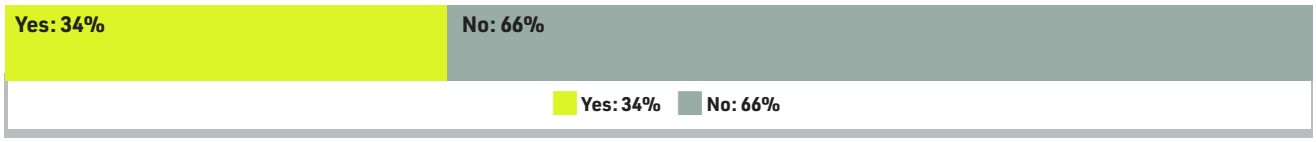
Did you couchsurf, or stay with family or friends temporarily?



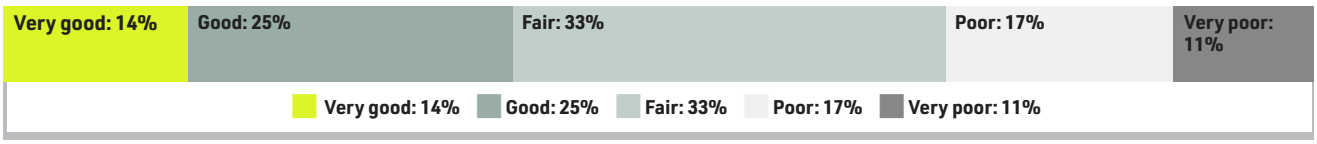
Current Living Situation:



Have you participated in or are you currently participating in the Transition Assistance Program (TAP)?



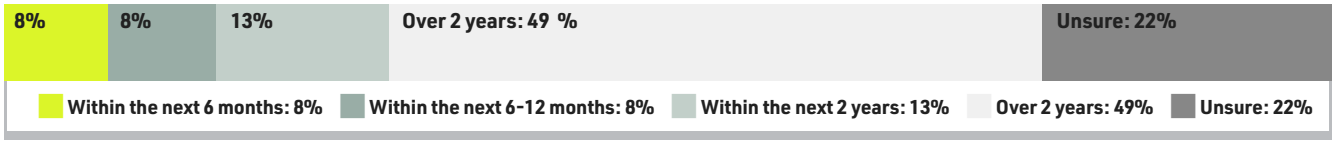
How would you rate your experience in the Transition Assistance Program?



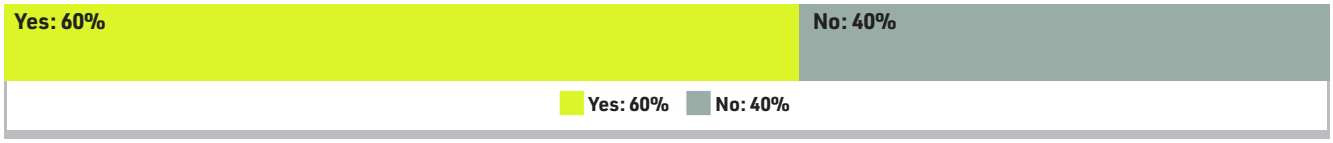
Active Duty/Guard/Reserve Transition Prep

The following questions were asked of IAVA members who indicated they are still serving in uniform.

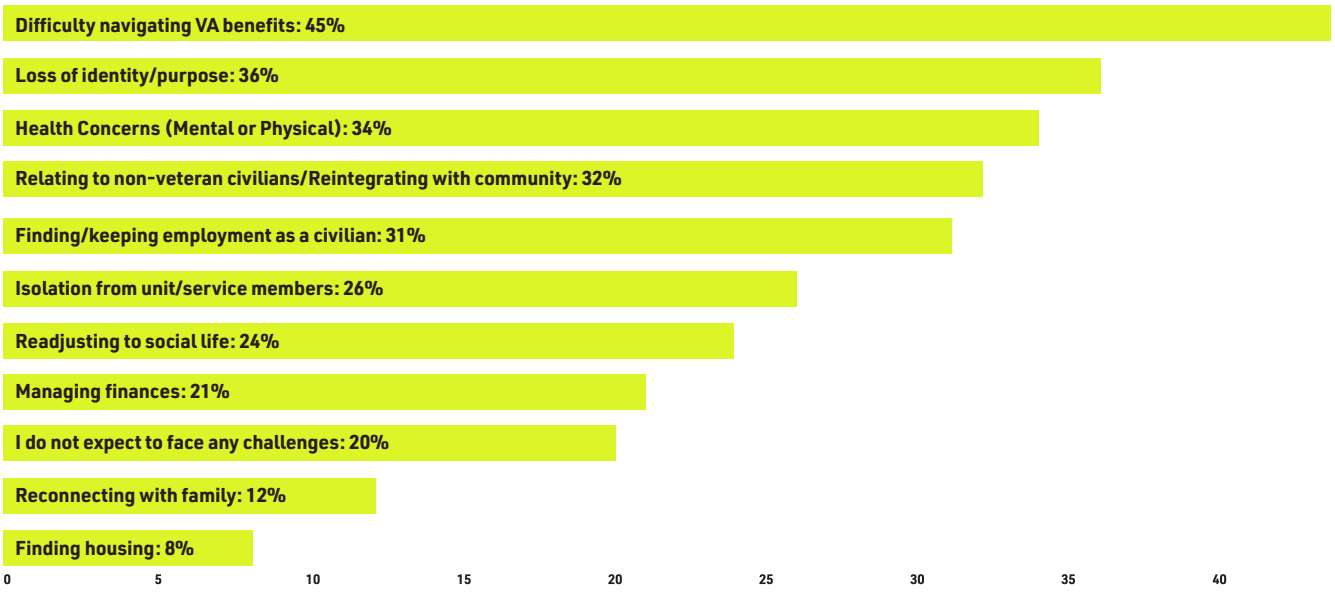
When do you plan to transition out of the military?



Have you planned for your transition out of the military?

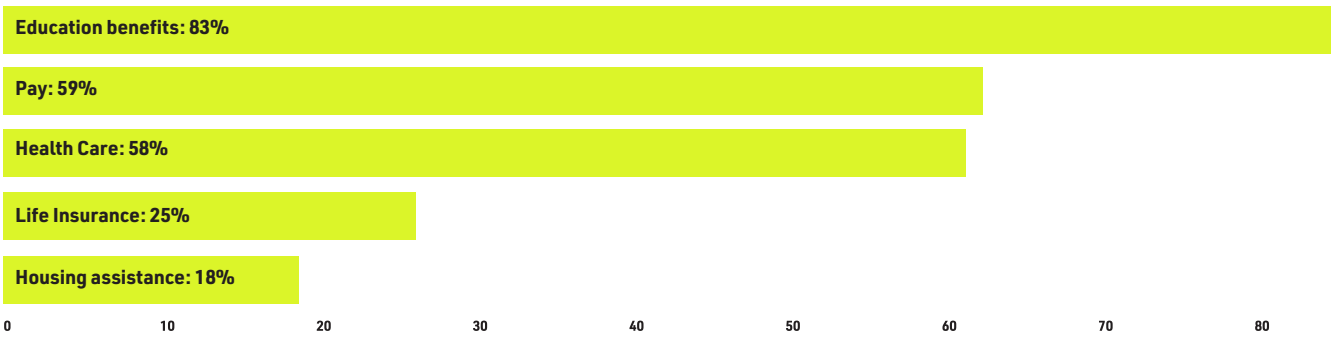


Challenges expected to face as transition out of military:



How familiar are you with the public benefits available to you as you transition out of the military?

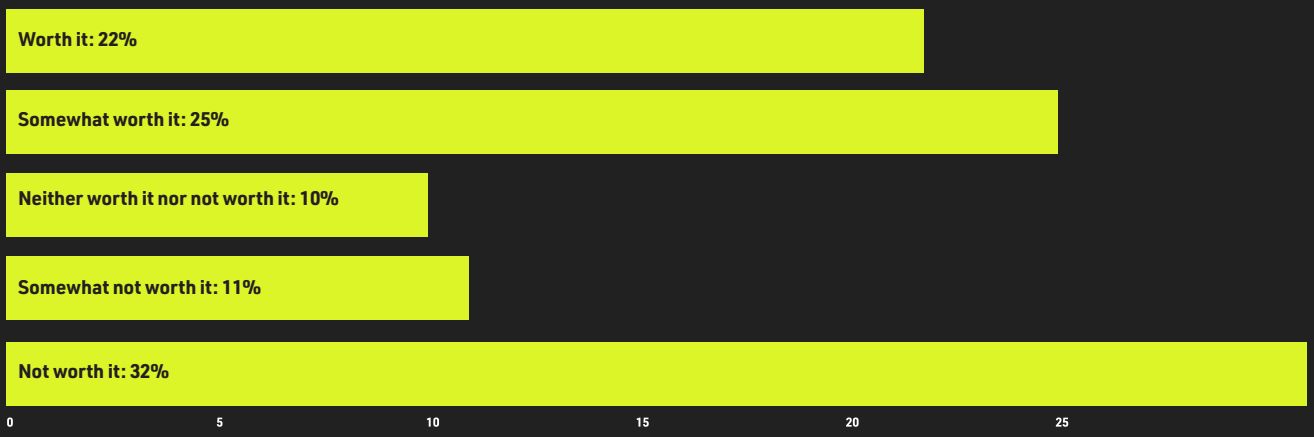
Were any of the following benefits influential to your decision to join the military?



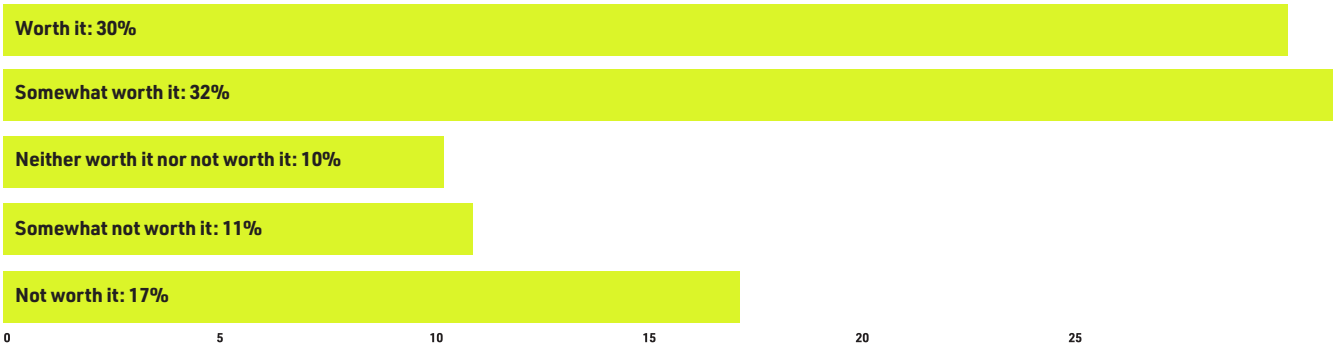
//ISSUES FROM THE HEADLINES

IAVA Members are always ready to sound off on the most important issues impacting not only the post-9/11 generation but also all Americans. From immigration to the NFL protests, to the Wars in Iraq and Afghanistan, IAVA Members are sounding off on the hottest topics of the day.

In all, do you think our engagement in Iraq was worth it, or not?

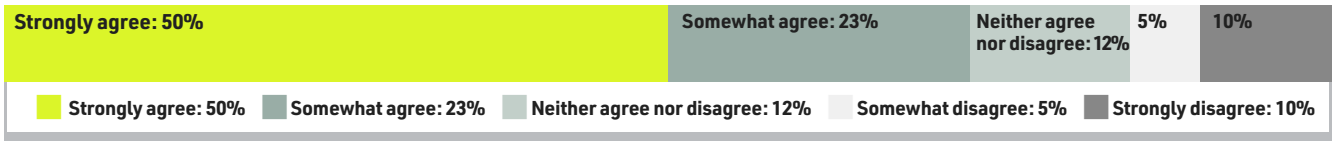


In all, do you think our engagement in Afghanistan is worth it, or not?



Please indicate your level of agreement with the following statements:

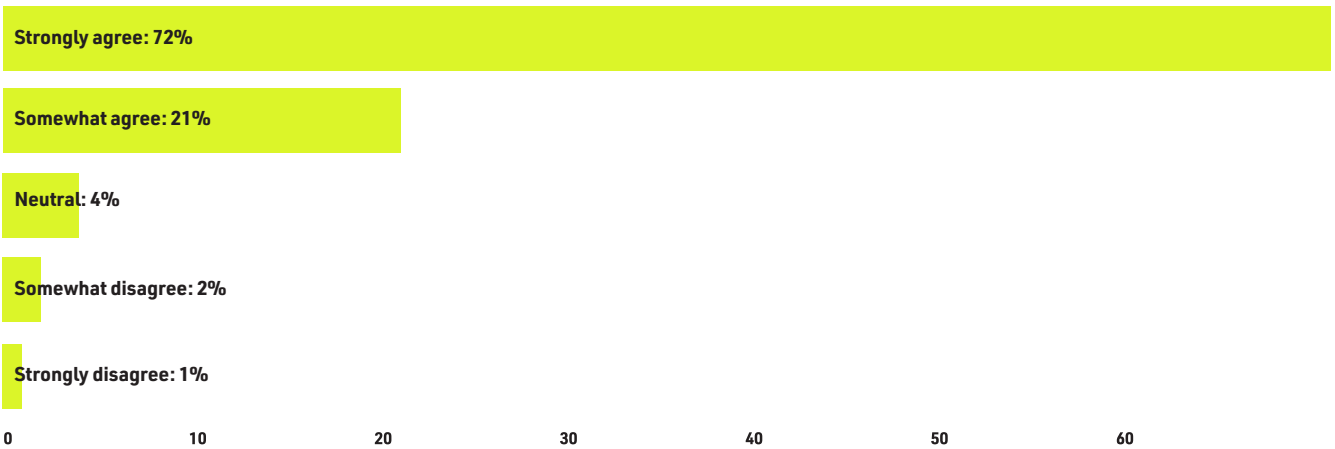
Maintaining the Selective Service with the inclusion of women U.S. citizens turning 18 years old in the enrollment process.



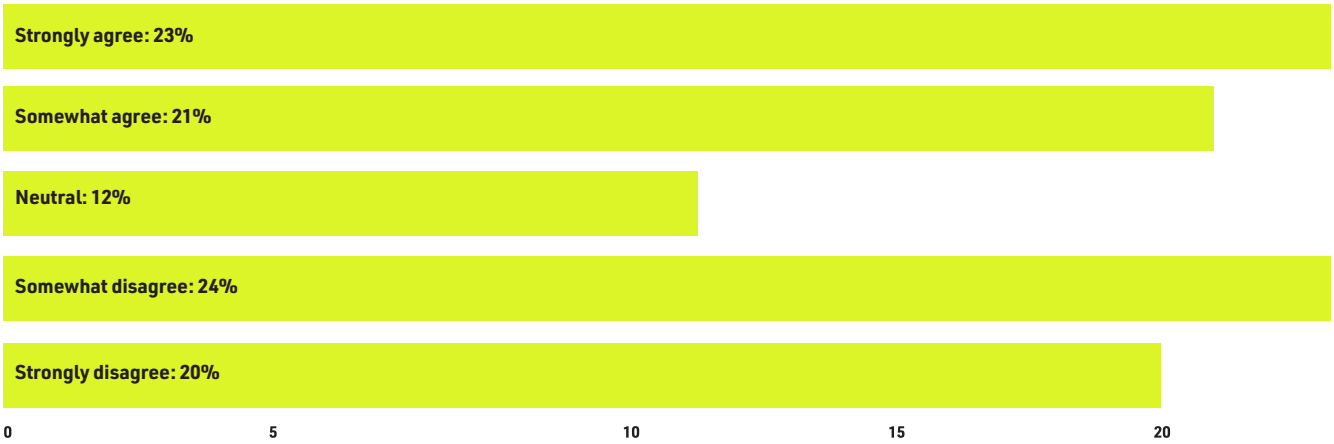
Ending the Selective Service enrollment process (used in the event of a draft) for male U.S. citizens turning 18 years old.

81% Agree with the U.S. Special Immigrant Visa Program for Afghan nationals.

Currently, military service can serve as a way to expedite the pathway to U.S. citizenship. What is your opinion of this policy?



Under current immigration law, non-citizens may be deported after committing a crime, regardless of veteran status or military service. What is your opinion of this policy?

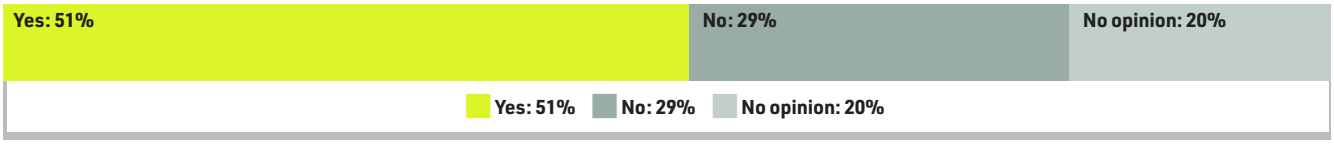


4% have been personally impacted by this immigration policy.

11% know a post-9/11 veteran impacted by this policy.

Opinion on allowing openly transgender persons to participate in military service:

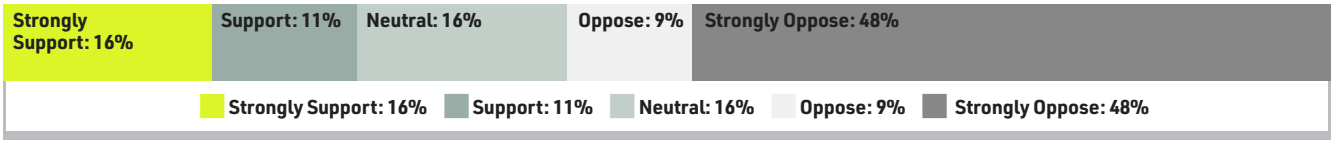
Support for the repeal of the "Dont Ask, Dont Tell" (DADT):



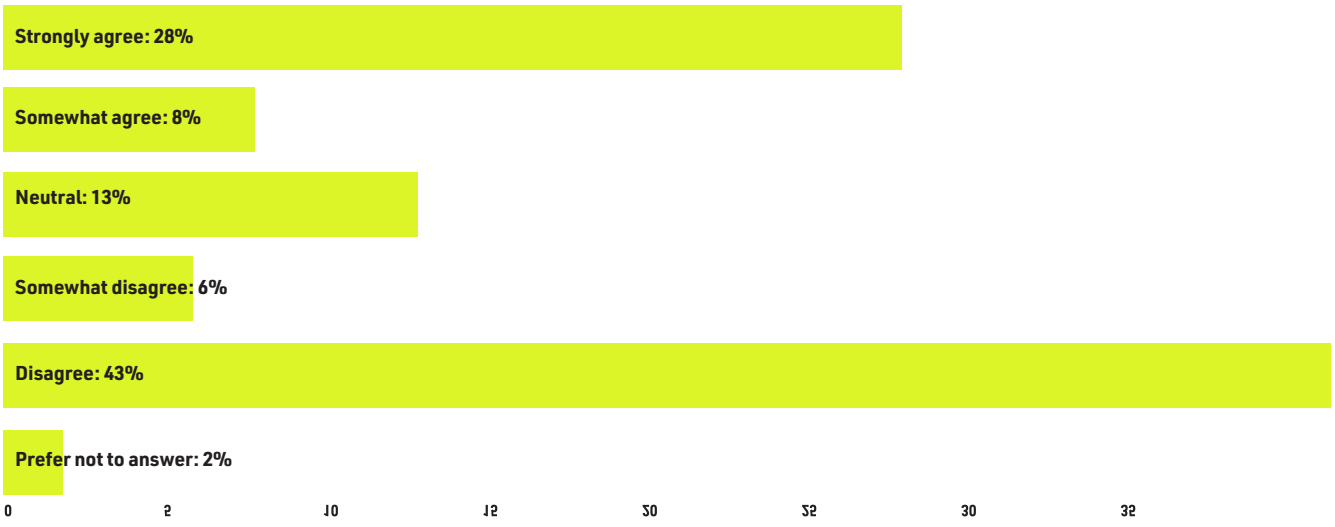
Top 3 most important issues for post-9/11 veterans:

1. Mental Health and Suicide Prevention
2. Employment and Jobs
3. VA Reform

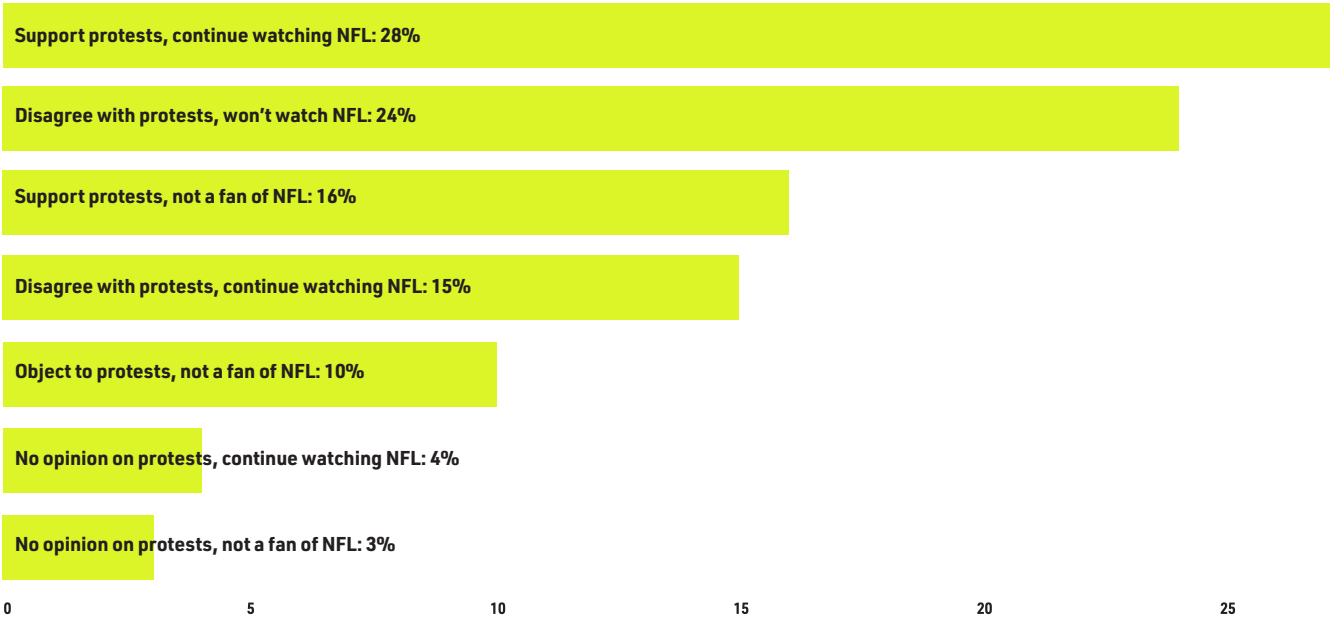
Earlier this year, President Trump requested a military parade from the Pentagon. Please rate your support for the President's proposed military parade:



What is your opinion of the ongoing "NFL protests" where players kneel during the national anthem to protest social injustices?

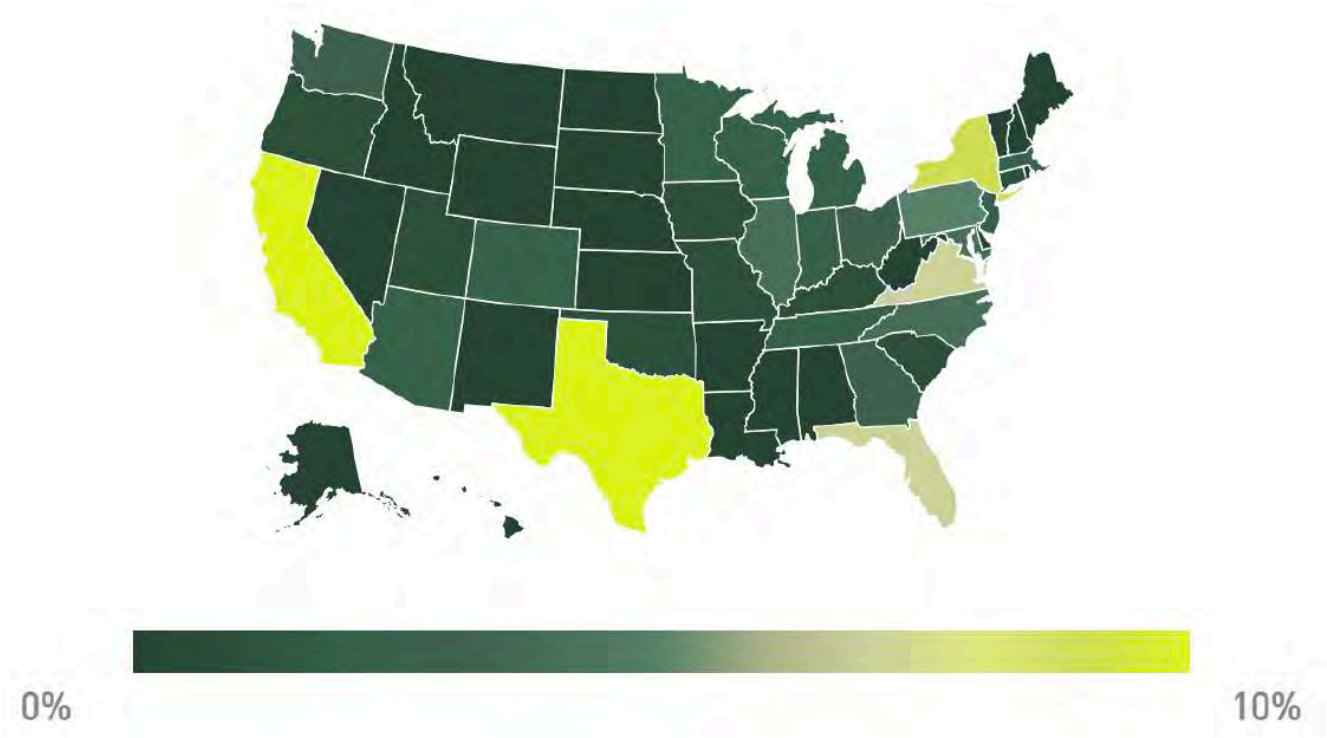


How do you plan to respond to the various protests during professional sports games?



//SURVEY METHODOLOGY

Distribution of Respondents



4,600 IAVA Members took and completed this year's survey. That is a record number. With a 1% margin of error at the 95% confidence interval, we can be confident that the numbers and views reflected in this survey accurately and precisely reflect that of IAVA's veteran and military population nationwide. The survey was distributed among IAVA's veteran and military members over a month long period from October 19th through November 19th. Almost three-fourths of those that started the survey completed it, a testament to the interest and willingness of our members to share their thoughts, opinions, and experiences. An incentive to complete the survey was provided, Southwest flight vouchers, a common practice in survey design. For more on our methodology, see below.*

*The survey alpha test was distributed among IAVA staff members from July 30 - August 1st and later beta tested among a dozen IAVA leaders and staff members from August 2nd - 6th and October 9th - 15th. The final survey was fielded among all IAVA veteran members from October 19th through November 19th. Emails were sent to IAVA military and veteran members on October 19, 24, November 14, and 16. The opportunity to enter a drawing for five Southwest (SW) Airlines vouchers to fly anywhere SW flies in 2018 was provided as incentive to complete the survey. Social media was utilized to encourage post-9/11 veterans to join IAVA and take the survey. New members were also provided a link in the welcome email received during this time frame. A total of 4,600 participants completed the survey, a record number; 1,586 started the survey but did not complete it, which made for a 74% completion rate. The margin of error for this survey is +/- 1% at the 95% confidence interval.

//AUTHOR

Stephanie Mullen serves as the Research Director for IAVA, leading the annual member survey and additional research projects. As part of the Policy Department, Steph translates IAVA members' experiences and views based on surveys and polling to advise the Policy Department on legislative and policy positions.

Most recently, Steph has represented IAVA for a panel discussion on PTSD following a screening of the film, Leave No Trace. Steph is a recurring guest on Connecting Vets where she has discussed topics such as suicide prevention and mental health, burn pits, and Department of Veterans Affairs reforms. Before joining the IAVA team, Stephanie served as National Programs Manager for American Veterans, where she kept AMVETS' national programs running on time and on budget. Stephanie is a graduate of Duquesne University in Pittsburgh, PA with a BA in International Relations and a MA in Public Policy and currently part of the 2018 Center for Strategic and International Studies Accelerator Series for rising leaders.

//THANK YOU

Thank you to all of our IAVA Members who participated in this survey. Thank you to Qualtrics for providing the platform to IAVA for survey fielding.

A special thank you to George Washington Masters in Public Policy program for their counsel on questions and language. Especially Shelley, Amanda, Sara, Max, and Matthew's work as part of their Capstone Project.

This project would not have been possible without the creative vision and talent of Eric Schoenborn. Thank you for all your work and sharing your talent to make this project a success.

And thank you to the contributors below, without whom this work would not be possible:

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IAVA relies on the generosity of our corporate and foundation partnerships and the support of individual contributors to amass the resources necessary to fulfill our mission. This Member Survey is the most comprehensive non governmental survey of post-9/11 veterans and is an important snapshots of the veteran community that no other organization has the ability to replicate. IAVA is the leading voice advocating on behalf of post-9/11 veterans because our community takes the time to share their point of view and they trust IAVA to execute on their behalf. Help us continue this vital work, by donating to support IAVA's mission today!

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Please contact IAVA's Communications Department
at (212)982-9699 or press@iava.org

Exhibit 5

Are You a Veteran?		
Yes	513	38%
No	847	62%
Total	1,360	100%

What was your branch of service?		
Air Force	103	20%
Army	209	41%
Coast Guard	11	2%
Marines	49	10%
National Guard	28	5%
Navy	113	22%
Total	513	100%

Are You the family member or caregiver of a veteran?		
Yes	289	34%
No	558	66%
Total	847	100%

Do you use cannabis to treat a mental or physical condition?		
Yes	115	22%
No	398	78%
Total	513	100%

Do you know a veteran who is using cannabis to treat a condition		
Yes	310	39%
No	492	61%
Total	802	100%

Do you live in a state that allows the use of medical cannabis?		
Yes	320	40%
No	482	60%
Total	802	100%

Would you want to have cannabis as a federally-legal treatment?		
Yes	654	82%
No	148	18%
Total	802	100%

Do you believe the federal gov should legalize medical cannabis?		
Yes	666	83%
No	136	17%
Total	802	100%

Do you support research into medical cannabis?		
Yes	741	92%
No	61	8%
Total	802	100%

AgeRange		
18-30	30	2%
31-45	139	10%
46-59	370	27%
60+	821	60%
Total	1,360	100%

Gender (self-ID)		
Female	608	45%
Male	752	55%
Total	1,360	100%

Political Leaning		
Conservative	514	38%
Liberal	451	33%
Non-Partisan	395	29%
Total	1,360	100%

Are You a Veteran?

	18-30		31-45		46-59		60+		Female		Male		Conservative		Liberal		Non-Partisan	
Yes	3	10%	39	28%	136	37%	335	41%	65	11%	448	60%	197	38%	151	33%	165	42%
No	27	90%	100	72%	234	63%	486	59%	543	89%	304	40%	317	62%	300	67%	230	58%
Total	30	100%	139	100%	370	100%	821	100%	608	100%	752	100%	514	100%	451	100%	395	100%

What was your branch of service?

	18-30		31-45		46-59		60+		Female		Male		Conservative		Liberal		Non-Partisan	
Air Force	0	0%	3	8%	29	21%	71	21%	23	35%	80	18%	35	18%	29	19%	39	24%
Army	2	67%	14	36%	50	37%	143	43%	23	35%	186	42%	86	44%	64	42%	59	36%
Coast Guard	0	0%	1	3%	4	3%	6	2%	1	2%	10	2%	4	2%	3	2%	4	2%
Marines	0	0%	2	5%	13	10%	34	10%	2	3%	47	10%	17	9%	11	7%	21	13%
National Guard	1	33%	4	10%	8	6%	15	4%	1	2%	27	6%	10	5%	9	6%	9	5%
Navy	0	0%	15	38%	32	24%	66	20%	15	23%	98	22%	45	23%	35	23%	33	20%
Total	3	100%	39	100%	136	100%	335	100%	65	100%	448	100%	197	100%	151	100%	165	100%

Are You the family member or caregiver of a veteran?

	18-30		31-45		46-59		60+		Female		Male		Conservative		Liberal		Non-Partisan	
Yes	8	30%	39	39%	83	35%	159	33%	216	40%	73	24%	113	36%	97	32%	79	34%
No	19	70%	61	61%	151	65%	327	67%	327	60%	231	76%	204	64%	203	68%	151	66%
Total	27	100%	100	100%	234	100%	486	100%	543	100%	304	100%	317	100%	300	100%	230	100%

Do you use cannabis to treat a mental or physical condition?

	18-30		31-45		46-59		60+		Female		Male		Conservative		Liberal		Non-Partisan	
Yes	2	67%	6	15%	28	21%	79	24%	9	14%	106	24%	51	26%	36	24%	28	17%
No	1	33%	33	85%	108	79%	256	76%	56	86%	342	76%	146	74%	115	76%	137	83%
Total	3	100%	39	100%	136	100%	335	100%	65	100%	448	100%	197	100%	151	100%	165	100%

Do you know a veteran who is using cannabis to treat a condition

	18-30		31-45		46-59		60+		Female		Male		Conservative		Liberal		Non-Partisan	
Yes	6	55%	32	41%	98	45%	174	35%	104	37%	206	40%	131	42%	103	42%	76	31%
No	5	45%	46	59%	121	55%	320	65%	177	63%	315	60%	179	58%	145	58%	168	69%
Total	11	100%	78	100%	219	100%	494	100%	281	100%	521	100%	310	100%	248	100%	244	100%

Do you live in a state that allows the use of medical cannabis?

	18-30		31-45		46-59		60+		Female		Male		Conservative		Liberal		Non-Partisan	
Yes	8	73%	35	45%	79	36%	198	40%	126	45%	194	37%	132	43%	110	44%	78	32%
No	3	27%	43	55%	140	64%	296	60%	155	55%	327	63%	178	57%	138	56%	166	68%
Total	11	100%	78	100%	219	100%	494	100%	281	100%	521	100%	310	100%	248	100%	244	100%

Would you want to have cannabis as a federally-legal treatment?

	18-30		31-45		46-59		60+		Female		Male		Conservative		Liberal		Non-Partisan	
Yes	10	91%	70	90%	185	84%	389	79%	232	83%	422	81%	269	87%	219	88%	166	68%
No	1	9%	8	10%	34	16%	105	21%	49	17%	99	19%	41	13%	29	12%	78	32%
Total	11	100%	78	100%	219	100%	494	100%	281	100%	521	100%	310	100%	248	100%	244	100%

Do you believe the federal gov should legalize medical cannabis?

	18-30		31-45		46-59		60+		Female		Male		Conservative		Liberal		Non-Partisan	
Yes	11	100%	75	96%	191	87%	389	79%	231	82%	435	83%	272	88%	224	90%	170	70%
No	0	0%	3	4%	28	13%	105	21%	50	18%	86	17%	38	12%	24	10%	74	30%
Total	11	100%	78	100%	219	100%	494	100%	281	100%	521	100%	310	100%	248	100%	244	100%

Do you support research into medical cannabis?

	18-30		31-45		46-59		60+		Female		Male		Conservative		Liberal		Non-Partisan	
Yes	11	100%	77	99%	204	93%	449	91%	264	94%	477	92%	293	95%	238	96%	210	86%
No	0	0%	1	1%	15	7%	45	9%	17	6%	44	8%	17	5%	10	4%	34	14%
Total	11	100%	78	100%	219	100%	494	100%	281	100%	521	100%	310	100%	248	100%	244	100%

Are You a Veteran?						
	Yes		No		Total	
AL	16	3%	15	2%	31	2%
AZ	4	1%	6	1%	10	1%
CA	1	0%	4	0%	5	0%
CO	1	0%	6	1%	7	1%
CT	12	2%	33	4%	45	3%
DE	17	3%	26	3%	43	3%
FL	13	3%	30	4%	43	3%
GA	16	3%	24	3%	40	3%
IA	16	3%	32	4%	48	4%
ID	5	1%	6	1%	11	1%
IL	4	1%	11	1%	15	1%
KS	7	1%	19	2%	26	2%
KY	0	0%	3	0%	3	0%
LA	10	2%	18	2%	28	2%
MD	9	2%	19	2%	28	2%
MI	3	1%	14	2%	17	1%
MO	16	3%	36	4%	52	4%
MS	15	3%	32	4%	47	3%
NC	16	3%	25	3%	41	3%
NJ	8	2%	7	1%	15	1%
NM	12	2%	28	3%	40	3%
NV	9	2%	13	2%	22	2%
NY	19	4%	37	4%	56	4%
OH	11	2%	22	3%	33	2%
OK	18	4%	25	3%	43	3%
OR	22	4%	62	7%	84	6%
PA	0	0%	6	1%	6	0%
RI	14	3%	39	5%	53	4%
SC	2	0%	0	0%	2	0%
SD	21	4%	27	3%	48	4%
TN	26	5%	34	4%	60	4%
TX	9	2%	10	1%	19	1%
UT	7	1%	9	1%	16	1%
VA	16	3%	18	2%	34	3%
VT	38	7%	45	5%	83	6%
WA	22	4%	22	3%	44	3%
WI	14	3%	19	2%	33	2%
WV	37	7%	37	4%	74	5%
WY	27	5%	28	3%	55	4%

What was your branch of service?

	Air Force		Army		Coast Guard		Marines		National Guard		Navy		Total	
AL	1	6%	11	69%	0	0%	2	13%	0	0%	2	13%	16	100%
AZ	0	0%	2	50%	0	0%	1	25%	1	25%	0	0%	4	100%
CA	1	100%	0	0%	0	0%	0	0%	0	0%	0	0%	1	100%
CO	1	100%	0	0%	0	0%	0	0%	0	0%	0	0%	1	100%
CT	1	8%	5	42%	0	0%	4	33%	0	0%	2	17%	12	100%
DE	3	18%	6	35%	0	0%	2	12%	1	6%	5	29%	17	100%
FL	1	8%	7	54%	1	8%	1	8%	0	0%	3	23%	13	100%
GA	2	13%	10	63%	0	0%	0	0%	0	0%	4	25%	16	100%
IA	1	6%	4	25%	2	13%	2	13%	0	0%	7	44%	16	100%
ID	1	20%	1	20%	0	0%	0	0%	0	0%	3	60%	5	100%
IL	1	25%	2	50%	0	0%	0	0%	0	0%	1	25%	4	100%
KS	2	29%	4	57%	0	0%	0	0%	0	0%	1	14%	7	100%
KY	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LA	4	40%	4	40%	1	10%	1	10%	0	0%	0	0%	10	100%
MD	0	0%	2	22%	1	11%	0	0%	1	11%	5	56%	9	100%
MI	1	33%	0	0%	0	0%	0	0%	0	0%	2	67%	3	100%
MO	1	6%	9	56%	0	0%	2	13%	0	0%	4	25%	16	100%
MS	4	27%	10	67%	0	0%	1	7%	0	0%	0	0%	15	100%
NC	4	25%	5	31%	0	0%	2	13%	1	6%	4	25%	16	100%
NJ	1	13%	2	25%	0	0%	2	25%	0	0%	3	38%	8	100%
NM	4	33%	4	33%	0	0%	0	0%	1	8%	3	25%	12	100%
NV	5	56%	4	44%	0	0%	0	0%	0	0%	0	0%	9	100%
NY	5	26%	4	21%	1	5%	2	11%	1	5%	6	32%	19	100%
OH	2	18%	4	36%	0	0%	1	9%	1	9%	3	27%	11	100%
OK	5	28%	7	39%	0	0%	1	6%	2	11%	3	17%	18	100%
OR	4	18%	5	23%	2	9%	4	18%	0	0%	7	32%	22	100%
PA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RI	2	14%	4	29%	1	7%	3	21%	3	21%	1	7%	14	100%
SC	0	0%	0	0%	0	0%	1	50%	0	0%	1	50%	2	100%
SD	5	24%	10	48%	0	0%	1	5%	2	10%	3	14%	21	100%
TN	3	12%	17	65%	0	0%	4	15%	0	0%	2	8%	26	100%
TX	5	56%	2	22%	0	0%	0	0%	1	11%	1	11%	9	100%
UT	3	43%	1	14%	1	14%	2	29%	0	0%	0	0%	7	100%
VA	1	6%	7	44%	0	0%	2	13%	0	0%	6	38%	16	100%
VT	6	16%	15	39%	1	3%	3	8%	3	8%	10	26%	38	100%
WA	3	14%	8	36%	0	0%	1	5%	3	14%	7	32%	22	100%
WI	6	43%	3	21%	0	0%	0	0%	2	14%	3	21%	14	100%
WV	8	22%	18	49%	0	0%	3	8%	2	5%	6	16%	37	100%
WY	6	22%	12	44%	0	0%	1	4%	3	11%	5	19%	27	100%

Do you use cannabis to treat a mental or physical condition?	Yes		No		Total	
AL	1	6%	15	94%	16	100%
AZ	2	50%	2	50%	4	100%
CA	1	100%	0	0%	1	100%
CO	0	0%	1	100%	1	100%
CT	2	17%	10	83%	12	100%
DE	4	24%	13	76%	17	100%
FL	2	15%	11	85%	13	100%
GA	4	25%	12	75%	16	100%
IA	3	19%	13	81%	16	100%
ID	0	0%	5	100%	5	100%
IL	2	50%	2	50%	4	100%
KS	4	57%	3	43%	7	100%
KY	--	--	--	--	--	--
LA	2	20%	8	80%	10	100%
MD	2	22%	7	78%	9	100%
MI	0	0%	3	100%	3	100%
MO	3	19%	13	81%	16	100%
MS	1	7%	14	93%	15	100%
NC	2	13%	14	88%	16	100%
NJ	1	13%	7	88%	8	100%
NM	4	33%	8	67%	12	100%
NV	4	44%	5	56%	9	100%
NY	2	11%	17	89%	19	100%
OH	5	45%	6	55%	11	100%
OK	2	11%	16	89%	18	100%
OR	8	36%	14	64%	22	100%
PA	--	--	--	--	--	--
RI	6	43%	8	57%	14	100%
SC	1	50%	1	50%	2	100%
SD	8	38%	13	62%	21	100%
TN	4	15%	22	85%	26	100%
TX	2	22%	7	78%	9	100%
UT	1	14%	6	86%	7	100%
VA	1	6%	15	94%	16	100%
VT	6	16%	32	84%	38	100%
WA	8	36%	14	64%	22	100%
WI	1	7%	13	93%	14	100%
WV	7	19%	30	81%	37	100%
WY	9	33%	18	67%	27	100%

Do you know a veteran who is using cannabis to treat a condition						
	Yes		No		Total	
AL	4	17%	19	83%	23	100%
AZ	4	67%	2	33%	6	100%
CA	1	50%	1	50%	2	100%
CO	2	67%	1	33%	3	100%
CT	6	29%	15	71%	21	100%
DE	7	27%	19	73%	26	100%
FL	10	40%	15	60%	25	100%
GA	8	35%	15	65%	23	100%
IA	11	42%	15	58%	26	100%
ID	4	44%	5	56%	9	100%
IL	4	80%	1	20%	5	100%
KS	10	67%	5	33%	15	100%
KY	--	--	--	--	--	--
LA	2	13%	13	87%	15	100%
MD	6	40%	9	60%	15	100%
MI	0	0%	6	100%	6	100%
MO	13	45%	16	55%	29	100%
MS	7	22%	25	78%	32	100%
NC	12	52%	11	48%	23	100%
NJ	4	40%	6	60%	10	100%
NM	13	54%	11	46%	24	100%
NV	5	50%	5	50%	10	100%
NY	8	26%	23	74%	31	100%
OH	8	53%	7	47%	15	100%
OK	5	20%	20	80%	25	100%
OR	22	49%	23	51%	45	100%
PA	1	100%	0	0%	1	100%
RI	20	65%	11	35%	31	100%
SC	1	50%	1	50%	2	100%
SD	14	47%	16	53%	30	100%
TN	16	39%	25	61%	41	100%
TX	3	25%	9	75%	12	100%
UT	5	50%	5	50%	10	100%
VA	8	40%	12	60%	20	100%
VT	18	34%	35	66%	53	100%
WA	10	33%	20	67%	30	100%
WI	10	50%	10	50%	20	100%
WV	14	25%	41	75%	55	100%
WY	14	42%	19	58%	33	100%

Do you live in a state that allows the use of medical cannabis?	Yes		No		Total	
AL	1	4%	22	96%	23	100%
AZ	5	83%	1	17%	6	100%
CA	2	100%	0	0%	2	100%
CO	2	67%	1	33%	3	100%
CT	13	62%	8	38%	21	100%
DE	15	58%	11	42%	26	100%
FL	20	80%	5	20%	25	100%
GA	4	17%	19	83%	23	100%
IA	2	8%	24	92%	26	100%
ID	0	0%	9	100%	9	100%
IL	4	80%	1	20%	5	100%
KS	0	0%	15	100%	15	100%
KY	--	--	--	--	--	--
LA	2	13%	13	87%	15	100%
MD	10	67%	5	33%	15	100%
MI	5	83%	1	17%	6	100%
MO	5	17%	24	83%	29	100%
MS	1	3%	31	97%	32	100%
NC	2	9%	21	91%	23	100%
NJ	8	80%	2	20%	10	100%
NM	22	92%	2	8%	24	100%
NV	10	100%	0	0%	10	100%
NY	17	55%	14	45%	31	100%
OH	4	27%	11	73%	15	100%
OK	3	12%	22	88%	25	100%
OR	44	98%	1	2%	45	100%
PA	0	0%	1	100%	1	100%
RI	26	84%	5	16%	31	100%
SC	1	50%	1	50%	2	100%
SD	1	3%	29	97%	30	100%
TN	2	5%	39	95%	41	100%
TX	1	8%	11	92%	12	100%
UT	0	0%	10	100%	10	100%
VA	1	5%	19	95%	20	100%
VT	38	72%	15	28%	53	100%
WA	29	97%	1	3%	30	100%
WI	0	0%	20	100%	20	100%
WV	18	33%	37	67%	55	100%
WY	2	6%	31	94%	33	100%

Would you want to have cannabis as a federally-legal treatment?						
	Yes		No		Total	
AL	16	70%	7	30%	23	100%
AZ	5	83%	1	17%	6	100%
CA	1	50%	1	50%	2	100%
CO	1	33%	2	67%	3	100%
CT	18	86%	3	14%	21	100%
DE	21	81%	5	19%	26	100%
FL	23	92%	2	8%	25	100%
GA	20	87%	3	13%	23	100%
IA	21	81%	5	19%	26	100%
ID	8	89%	1	11%	9	100%
IL	5	100%	0	0%	5	100%
KS	14	93%	1	7%	15	100%
KY	--	--	--	--	--	--
LA	10	67%	5	33%	15	100%
MD	12	80%	3	20%	15	100%
MI	5	83%	1	17%	6	100%
MO	23	79%	6	21%	29	100%
MS	21	66%	11	34%	32	100%
NC	19	83%	4	17%	23	100%
NJ	9	90%	1	10%	10	100%
NM	22	92%	2	8%	24	100%
NV	10	100%	0	0%	10	100%
NY	25	81%	6	19%	31	100%
OH	11	73%	4	27%	15	100%
OK	17	68%	8	32%	25	100%
OR	39	87%	6	13%	45	100%
PA	1	100%	0	0%	1	100%
RI	29	94%	2	6%	31	100%
SC	2	100%	0	0%	2	100%
SD	27	90%	3	10%	30	100%
TN	30	73%	11	27%	41	100%
TX	10	83%	2	17%	12	100%
UT	10	100%	0	0%	10	100%
VA	16	80%	4	20%	20	100%
VT	39	74%	14	26%	53	100%
WA	26	87%	4	13%	30	100%
WI	19	95%	1	5%	20	100%
WV	43	78%	12	22%	55	100%
WY	26	79%	7	21%	33	100%

Do you support research into medical cannabis?						
	Yes		No		Total	
AL	20	87%	3	13%	23	100%
AZ	6	100%	0	0%	6	100%
CA	2	100%	0	0%	2	100%
CO	3	100%	0	0%	3	100%
CT	21	100%	0	0%	21	100%
DE	23	88%	3	12%	26	100%
FL	25	100%	0	0%	25	100%
GA	23	100%	0	0%	23	100%
IA	23	88%	3	12%	26	100%
ID	9	100%	0	0%	9	100%
IL	5	100%	0	0%	5	100%
KS	15	100%	0	0%	15	100%
KY	--	--	--	--	--	--
LA	12	80%	3	20%	15	100%
MD	15	100%	0	0%	15	100%
MI	5	83%	1	17%	6	100%
MO	25	86%	4	14%	29	100%
MS	29	91%	3	9%	32	100%
NC	21	91%	2	9%	23	100%
NJ	9	90%	1	10%	10	100%
NM	23	96%	1	4%	24	100%
NV	10	100%	0	0%	10	100%
NY	28	90%	3	10%	31	100%
OH	15	100%	0	0%	15	100%
OK	21	84%	4	16%	25	100%
OR	41	91%	4	9%	45	100%
PA	1	100%	0	0%	1	100%
RI	30	97%	1	3%	31	100%
SC	2	100%	0	0%	2	100%
SD	29	97%	1	3%	30	100%
TN	37	90%	4	10%	41	100%
TX	11	92%	1	8%	12	100%
UT	10	100%	0	0%	10	100%
VA	17	85%	3	15%	20	100%
VT	48	91%	5	9%	53	100%
WA	27	90%	3	10%	30	100%
WI	20	100%	0	0%	20	100%
WV	49	89%	6	11%	55	100%
WY	31	94%	2	6%	33	100%

AgeRange										
	18-30		31-45		46-59		60+		Total	
AL	1	3%	2	6%	9	29%	19	61%	31	100%
AZ	1	10%	2	20%	2	20%	5	50%	10	100%
CA	0	0%	0	0%	1	20%	4	80%	5	100%
CO	0	0%	0	0%	5	71%	2	29%	7	100%
CT	0	0%	3	7%	13	29%	29	64%	45	100%
DE	0	0%	5	12%	6	14%	32	74%	43	100%
FL	2	5%	2	5%	11	26%	28	65%	43	100%
GA	1	3%	3	8%	7	18%	29	73%	40	100%
IA	1	2%	8	17%	12	25%	27	56%	48	100%
ID	0	0%	0	0%	4	36%	7	64%	11	100%
IL	0	0%	2	13%	3	20%	10	67%	15	100%
KS	0	0%	6	23%	8	31%	12	46%	26	100%
KY	0	0%	0	0%	0	0%	3	100%	3	100%
LA	2	7%	2	7%	6	21%	18	64%	28	100%
MD	0	0%	8	29%	5	18%	15	54%	28	100%
MI	1	6%	2	12%	5	29%	9	53%	17	100%
MO	0	0%	5	10%	14	27%	33	63%	52	100%
MS	0	0%	4	9%	12	26%	31	66%	47	100%
NC	3	7%	7	17%	11	27%	20	49%	41	100%
NJ	0	0%	1	7%	8	53%	6	40%	15	100%
NM	1	3%	6	15%	16	40%	17	43%	40	100%
NV	1	5%	0	0%	8	36%	13	59%	22	100%
NY	2	4%	5	9%	23	41%	26	46%	56	100%
OH	1	3%	3	9%	8	24%	21	64%	33	100%
OK	1	2%	3	7%	10	23%	29	67%	43	100%
OR	1	1%	5	6%	21	25%	57	68%	84	100%
PA	0	0%	2	33%	2	33%	2	33%	6	100%
RI	0	0%	4	8%	14	26%	35	66%	53	100%
SC	0	0%	0	0%	0	0%	2	100%	2	100%
SD	0	0%	4	8%	15	31%	29	60%	48	100%
TN	2	3%	7	12%	17	28%	34	57%	60	100%
TX	0	0%	3	16%	4	21%	12	63%	19	100%
UT	0	0%	5	31%	4	25%	7	44%	16	100%
VA	2	6%	7	21%	10	29%	15	44%	34	100%
VT	5	6%	8	10%	29	35%	41	49%	83	100%
WA	0	0%	5	11%	11	25%	28	64%	44	100%
WI	1	3%	7	21%	13	39%	12	36%	33	100%
WV	0	0%	2	3%	14	19%	58	78%	74	100%
WY	1	2%	1	2%	9	16%	44	80%	55	100%

Gender (self-ID)						
	Female		Male		Total	
AL	11	35%	20	65%	31	100%
AZ	5	50%	5	50%	10	100%
CA	3	60%	2	40%	5	100%
CO	7	100%	0	0%	7	100%
CT	19	42%	26	58%	45	100%
DE	17	40%	26	60%	43	100%
FL	25	58%	18	42%	43	100%
GA	20	50%	20	50%	40	100%
IA	22	46%	26	54%	48	100%
ID	7	64%	4	36%	11	100%
IL	6	40%	9	60%	15	100%
KS	13	50%	13	50%	26	100%
KY	1	33%	2	67%	3	100%
LA	11	39%	17	61%	28	100%
MD	14	50%	14	50%	28	100%
MI	8	47%	9	53%	17	100%
MO	27	52%	25	48%	52	100%
MS	25	53%	22	47%	47	100%
NC	17	41%	24	59%	41	100%
NJ	6	40%	9	60%	15	100%
NM	21	53%	19	48%	40	100%
NV	10	45%	12	55%	22	100%
NY	23	41%	33	59%	56	100%
OH	15	45%	18	55%	33	100%
OK	15	35%	28	65%	43	100%
OR	44	52%	40	48%	84	100%
PA	5	83%	1	17%	6	100%
RI	24	45%	29	55%	53	100%
SC	1	50%	1	50%	2	100%
SD	14	29%	34	71%	48	100%
TN	28	47%	32	53%	60	100%
TX	10	53%	9	47%	19	100%
UT	4	25%	12	75%	16	100%
VA	12	35%	22	65%	34	100%
VT	37	45%	46	55%	83	100%
WA	18	41%	26	59%	44	100%
WI	19	58%	14	42%	33	100%
WV	28	38%	46	62%	74	100%
WY	16	29%	39	71%	55	100%

Political Leaning								
	Conservative		Liberal		Non-Partisan		Total	
AL	8	26%	8	26%	15	48%	31	100%
AZ	5	50%	3	30%	2	20%	10	100%
CA	0	0%	4	80%	1	20%	5	100%
CO	1	14%	3	43%	3	43%	7	100%
CT	19	42%	19	42%	7	16%	45	100%
DE	15	35%	12	28%	16	37%	43	100%
FL	13	30%	15	35%	15	35%	43	100%
GA	17	43%	8	20%	15	38%	40	100%
IA	22	46%	16	33%	10	21%	48	100%
ID	6	55%	2	18%	3	27%	11	100%
IL	4	27%	9	60%	2	13%	15	100%
KS	14	54%	5	19%	7	27%	26	100%
KY	2	67%	0	0%	1	33%	3	100%
LA	7	25%	6	21%	15	54%	28	100%
MD	9	32%	13	46%	6	21%	28	100%
MI	6	35%	8	47%	3	18%	17	100%
MO	17	33%	12	23%	23	44%	52	100%
MS	13	28%	15	32%	19	40%	47	100%
NC	18	44%	12	29%	11	27%	41	100%
NJ	8	53%	4	27%	3	20%	15	100%
NM	13	33%	19	48%	8	20%	40	100%
NV	9	41%	9	41%	4	18%	22	100%
NY	25	45%	15	27%	16	29%	56	100%
OH	14	42%	13	39%	6	18%	33	100%
OK	15	35%	16	37%	12	28%	43	100%
OR	31	37%	38	45%	15	18%	84	100%
PA	3	50%	2	33%	1	17%	6	100%
RI	28	53%	12	23%	13	25%	53	100%
SC	0	0%	1	50%	1	50%	2	100%
SD	17	35%	14	29%	17	35%	48	100%
TN	22	37%	14	23%	24	40%	60	100%
TX	5	26%	4	21%	10	53%	19	100%
UT	6	38%	4	25%	6	38%	16	100%
VA	13	38%	11	32%	10	29%	34	100%
VT	37	45%	19	23%	27	33%	83	100%
WA	16	36%	18	41%	10	23%	44	100%
WI	13	39%	17	52%	3	9%	33	100%
WV	17	23%	34	46%	23	31%	74	100%
WY	26	47%	17	31%	12	22%	55	100%

Exhibit 6

CURRENT ONCOLOGY
A Canadian Cancer Research Journal

ORIGINAL ARTICLE

Rates of cannabis use in patients with cancer

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ABSTRACT

Background A comprehensive assessment of cannabis use by patients with cancer has not previously been reported. In this study, we aimed to characterize patient perspectives about cannabis and its use.

Methods An anonymous survey about cannabis use was offered to patients 18 years of age and older attending 2 comprehensive and 2 community cancer centres, comprising an entire provincial health care jurisdiction in Canada (ethics ID: HREBA-17011).

Results Of 3138 surveys distributed, 2040 surveys were returned (65%), with 1987 being sufficiently complete for analysis (response rate: 63%). Of the respondents, 812 (41%) were less than 60 years of age; 45% identified as male, and 55% as female; and 44% had completed college or higher education.

Of respondents overall, 43% reported any lifetime cannabis use. That finding was independent of age, sex, education level, and cancer histology. Cannabis was acquired through friends (80%), regulated medical dispensaries (10%), and other means (6%). Of patients with any use, 81% had used dried leaves.

Of the 356 patients who reported cannabis use within the 6 months preceding the survey (18% of respondents with sufficiently complete surveys), 36% were new users. Their reasons for use included cancer-related pain (46%), nausea (34%), other cancer symptoms (31%), and non-cancer-related reasons (56%).

Conclusions The survey demonstrated that prior cannabis use was widespread among patients with cancer (43%). One in eight respondents identified at least 1 cancer-related symptom for which they were using cannabis.

Key Words Cannabis, marijuana, symptoms

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INTRODUCTION

The frequency of cannabis use in cancer patient populations is not well-established. Uptake of its use or consensus about authorization practices in the medical community has been limited[1–4]. Anecdotally, cannabis is more commonly authorized for patients who have experience of previous use. It can be authorized for a variety of medical conditions[3]. Patients without authorization often acquire it by other means and use it either recreationally or for a variety of claimed medical benefits despite clinical trial data demonstrating efficacy or safety for smoked cannabis being limited[5,6].

In response to patient demand, a growing number of Web sites have been devoted to the subject of medical cannabis (see, for example, http://phoenixtears.ca and http://www.medicalcannabis.com). Patients can access that information, but in pre-legalization environments might be hesitant to disclose use to their practitioners. Data about the use of cannabis in the general population are available, but information about use by oncology patients or the beliefs of oncology patients about cannabis are less well established[6,7–10]. The Canadian experience has yet to be described.

In the present study, we examined cannabis use in a North American multicentre outpatient cancer-centre population for whom possession for medical use is an exemption under the law. The survey explored the motivations of cannabis users for cannabis use, their willingness to discuss that use with their physicians, and general opinions about cannabis. The primary endpoint of the study was to determine the proportion of an unselected population of patients with cancer who would have consumed cannabis within 6 months of visiting a cancer centre.

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Supplemental material available at www.current-oncology.com.

METHODS

Survey Design

An anonymous survey was designed to solicit from patients their demographics, diagnosis, reason for cancer centre attendance, personal use of cannabis, opinions about cannabis, and comfort level discussing cannabis with their oncologists (supplemental Appendix A). The survey content was externally reviewed by the health care jurisdiction's data integration, measurement, and reporting division to ensure that the questions were internally consistent. The survey cover letter and questions were then reviewed by 13 patient and family advisers through the involved centre's patient advocacy program. Feedback was incorporated into the final questionnaire wording.

Data Collection

Patients eligible to receive a survey were those who were 18 years of age or older, who had a scheduled appointment at 1 of the 4 cancer centres in the province of Alberta, and who were checking in at a registration desk before their appointment. Those 4 centres administer 100% of the radiotherapy and 85% of the adult chemotherapy courses in the jurisdiction. Between 15 May and 19 May 2017, 2936 of 4784 patients with scheduled visits to 1 of 2 tertiary cancer centres serving rural and urban patient populations (centres 1 and 2) were approached to complete the survey by clerical staff at the time of registration. Then, between 17 July and 21 July 2017, 202 of 489 patients with scheduled visits to 1 of the 2 community cancer centres serving predominately rural patients (centres 3 and 4) in the jurisdiction were approached to complete the same survey. Use by the patients of family members as proxies to complete the survey was discouraged, but not prohibited. Completed surveys were returned by patients into confidential sealed boxes distributed at strategic locations throughout the cancer centres and were collected daily. Patients making multiple visits during the survey period were asked to complete the survey only once. For the duration of the study, the study authors did not directly contact patients, but were available to answer questions about the survey at patient or staff member request.

After the survey period ended, site-wide databases were interrogated to determine the number of patient visits during the study period at each centre and baseline demographic information for patients who had attended at least once. The surveys not distributed were then manually counted. The resulting information was used to determine response rates in a manner consistent with the principles espoused by the American Association for Public Opinion Research standards[11].

Statistical Methods

All surveys were scanned into an electronic database for analysis. All text responses were manually verified, and 20% of the source data for multiple-choice responses was then randomly verified by independent reviewers for the accuracy of data entry. The overall response rate and response rates by treatment centre were calculated. Proportions were then calculated for survey responses based on the total number of surveys completed. In cases in which patients were asked to skip questions based on a previous response, the calculation was based on the actual number of respondents. Comparisons between group responses used the chi-square or Fisher exact test, as appropriate.

Logistic regression was used to determine the dependencies of lifetime cannabis use and cannabis use within the preceding 6 months by respondent factors. For the logistic regression analyses, surveys without responses to the questions about lifetime cannabis use or the time since last use were excluded as appropriate. For lifetime use, the independent variables included age, education level, sex, and cancer type as categorical ordinal variables. For use within the preceding 6 months, the independent variables included age groupings, education level (divided into high school or less, diploma or degree, and master's degree or higher), sex, and cancer type as categorical ordinal variables; current use of chemotherapy or immunotherapy or targeted therapy, current use of hormonal therapy, current use of radiotherapy, and current or recently planned surgery were included as dichotomous categorical variables.

For ordinal regression, all surveys with missing data ($n = 163$) were excluded. In the included surveys, data were ranked as 1 (strongly agree or agree), 2 (unsure or don't know), and 3 (disagree or strongly disagree). The independent variables examined were age groupings and highest achieved education level (high school or less, diploma or degree, and master's degree or higher) as categorical ordinal variables, and sex and any lifetime use of cannabis as dichotomous ordinal variables. On ordinal regression modelling, only surveys with complete data were included. Two surveys in which sex was designated as "other" were excluded. All data were analyzed using the R programming language (version 3.1.3: The R Foundation, Vienna, Austria).

Ethics Considerations

Before survey distribution, the project was reviewed and approved by the Health Research Ethics Board of Alberta responsible for the 4 institutions (HREBA–Cancer Committee ID: 17011).

Role of the Funding Source

The project was supported in part by funds from the University of Calgary Department of Oncology and in part by research grant funding from Alberta Health Services. The funders had no participation in study design, data interpretation, or manuscript preparation. The corresponding author had full access to all data and final responsibility for the decision to submit for publication.

RESULTS

Response Rate

Table I outlines the demographics for all patients visiting the cancer centres at the time of survey administration and all respondents to the survey. Of 3138 surveys distributed, 2040 were returned (return rate: 65%), and 1987 were more than 50% complete (response rate: 63%). Response rates for centres 1, 2, 3, and 4 were 57%, 54%, 100%, and 100% respectively ($p < 0.001$ favouring rural centres). In general, the cohort of respondents appeared to be a representative sample of the patients with a planned cancer centre appointment during the study interval. Very elderly patients (>80 years) and

patients with skin, gynecologic, and hematologic malignancies were either less likely to have been approached or to respond to the questionnaire ($p < 0.001$).

Lifetime Cannabis Use

Of 1928 respondents, 834 reported any lifetime cannabis use (43%), and 59 chose not to complete this question.

TABLE I Baseline characteristics of all patients with visits scheduled at the study centres and of patients who completed the cannabis questionnaire

Characteristic	Patient group [*n* (%)]		Exposure	*p* Value
	Visiting (*n*=5273)	Respondents (*n*=1987)		
Age group				
<30 Years	131 (2)	47 (2)	36	<0.001[a]
30–39 Years	286 (5)	102 (5)	36	
40–49 Years	556 (11)	217 (11)	39	
50–59 Years	1139 (22)	446 (22)	39	
60–69 Years	1591 (30)	639 (32)	40	
70–79 Years	1149 (22)	436 (22)	38	
≥80 Years	421 (8)	84 (4)	20	
Unknown	16			
Sex				
Men	2328 (44)	874 (45)	38	NS
Women	2945 (56)	1078 (55)	37	
Other[b]	0 (0)	2 (0)	—	
Unknown	33			
Primary cancer site				
Breast	1107 (21)	428 (22)	39	<0.001
Genitourinary	704 (13)	286 (15)	41	
Gynecologic	404 (8)	129 (7)	32	
Skin	99 (2)	28 (1)	28	
Lung	385 (7)	171 (18)	44	
Gastrointestinal	808 (15)	345 (17)	43	
Hematologic	962 (18)	290 (15)	30	
Other	804 (15)	240 (13)	30	
Unknown	70			
Completed education				
≤High school	—	1079 (55)	—	NA
Diploma or bachelor's	—	691 (35)	—	
≥Master's	—	182 (9)	—	
Unknown	5273	35		
Time from diagnosis				
<6 Months	1531 (29)	570 (29)	37	NS
≥6 Months	3630 (68)	1369 (71)	38	
Unknown	111	48		
On active treatment				
Yes	—	1199 (64)		NA
No	—	687 (36)		
Unknown	5273	101		

[a] Omitting the ≥80 group, the *p* value is nonsignificant.
[b] Patients were given the option of identifying their gender as "other" on the survey, but all patients are registered as "male" or "female" in the electronic health tracking record.
NS = nonsignificant; NA = not applicable.

Cannabis use within the preceding week, 6 months, or 5 years was reported by 241 (13%), 356 (18%), and 471 (24%) respondents respectively. On logistic regression, younger age showed a trend to be predictive for lifetime cannabis use [50–59 years vs. 70–79 years; odds ratio (OR): 1.06; 95% confidence interval (CI): 1.00 to 1.12; chi-square: 3.37; $p = 0.07$], but lifetime use was not associated with education level, sex, or type of cancer diagnosis.

Among respondents reporting any lifetime cannabis use, 119 (14%) reported holding an authorization, and 670 (80%) reported acquiring cannabis through friends or acquaintances. Ever-acquisition from a medical dispensary was reported by 79 respondents (9%), and 50 (6%) reported acquisition by other means.

Of lifetime users, 672 (81%) reported having used dry leaves; 402 (48%), oils or edibles; 234 (28%), hashish; and 52 (6%), some other form of cannabis.

Cannabis Use in the Preceding Six Months

Of the 356 respondents (18%) who reported cannabis use within the 6 months preceding survey completion, 239 (67%) indicated they were currently receiving treatment for cancer, including 192 (54%) receiving systemic therapy, 28 (8%) receiving hormonal therapy, 58 (16%) receiving radiotherapy, and 15 (4%) having recent or upcoming surgery. When considered independently on logistic regression, current systemic therapy use was predictive of cannabis use within the preceding 6 months (OR: 1.6; 95% CI: 1.3 to 2.0; chi-square: 15; $p < 0.001$). Age, sex, education level, type of malignancy, use of hormonal therapy, use of radiotherapy, and use of surgery were not associated with the likelihood of cannabis use in the preceding 6 months.

Of respondents reporting cannabis use within the preceding 6 months, 75 (21%), 74 (21%), 80 (22%), and 65 (18%) reported spending less than $100, $100–$200, $200–$500, and more than $500 respectively during that period. The question about expenditure for cannabis was not answered by 62 (17%) of the respondents who had indicated use during that period.

As Figure 1 shows, when the 6-months-preceding users were asked about when they had started using cannabis, 128 (36%) reported starting within that period, with 101 (28%) indicating having started more than 6 months but less than 5 years earlier, 116 (33%) indicating having started more than 5 years earlier, and 11 (3%) choosing not to answer the question.

Table II shows the reasons given for cannabis use within the preceding 6 months. Notably, 70% of the 6-months-preceding respondents reported a cancer-related reason for use. Of the 241 respondents who reported having used cannabis within the preceding week, 171 (71%) reported use for at least 1 cancer-related reason.

Thoughts About Cannabis Use

Table III shows respondent opinions about cannabis use. In 1823 surveys, no variables were missing, and those surveys were included in the ordinal regression (descriptions for surveys with missing variables are available in supplemental Table 1). Table IV shows the ordinal regression outcomes for all questions asked. Notably, younger respondents and respondents who had previously used cannabis were less likely to agree with the statements "cannabis is harmful to the body," "cannabis interferes with other medications," and "cannabis should be used only under guidance of a doctor." Respondents with prior cannabis use were more likely to believe that cannabis should be legalized, that it helped to treat nausea, and that it helped to cure cancer.

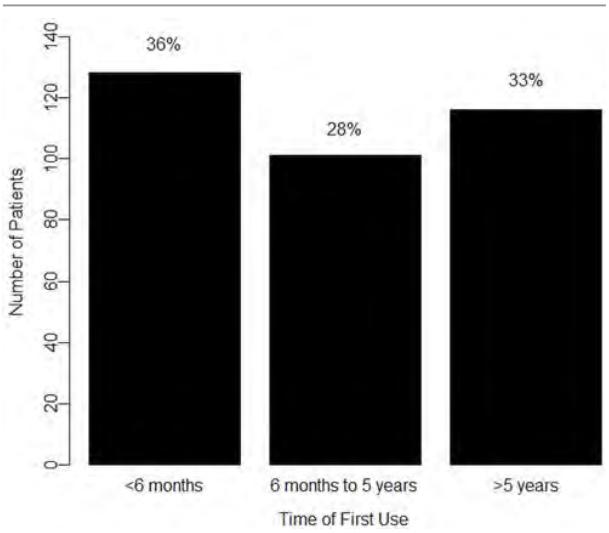

FIGURE 1 Time from first use of cannabis in respondents with any cannabis use in the past six months.

TABLE II Reasons for use[a] given by 356 respondents reporting cannabis use within the preceding 6 months

Reason	Active users [*n* (%)]
Any cancer symptom (combined)	250 (70)
Cancer-related pain	165 (46)
Cancer-related nausea	122 (34)
Other cancer symptoms	110 (31)
Any non-cancer reason (combined)	199 (56)
Non-cancer symptoms or illness	76 (21)
Other non-cancer reasons	157 (44)

[a] Respondents were allowed to select more than one reason for having used cannabis.

Comfort Level Discussing Cannabis with Oncologists

When asked about their comfort level in telling oncologists about current cannabis use, only 96 respondents (5%) indicated that they would not feel comfortable telling their oncologists about their prior or current cannabis use. Another 548 respondents (27%) were unsure or did not complete the question. Of the 1094 respondents who had never used cannabis, 193 (18%) indicated that they had contemplated using cannabis as part of their cancer treatment. Of those 193, 168 (87%) felt comfortable discussing the issue with oncologists unprompted, 15 (8%) would feel comfortable discussing it if the oncologists brought it up, and only 1 (1%) felt uncomfortable discussing cannabis with oncologists [9 (5%) were unsure or didn't respond].

TABLE III Opinions about cannabis use from 1987 respondents

Statement	Opinion [*n* (%)]
Cannabis is harmful to the body	
Strongly agree or agree	743 (37)
Unsure or no response	703 (35)
Disagree or strongly disagree	541 (27)
Cannabis helps cure cancer	
Strongly agree or agree	326 (16)
Unsure or no response	945 (48)
Disagree or strongly disagree	716 (36)
Cannabis interferes with other medications	
Strongly agree or agree	297 (15)
Unsure or no response	1307 (66)
Disagree or strongly disagree	383 (19)
Cannabis helps treat cancer symptoms	
Strongly agree or agree	1087 (55)
Unsure or no response	812 (41)
Disagree or strongly disagree	88 (4)
Cannabis should be used only under guidance of a doctor	
Strongly agree or agree	1162 (58)
Unsure or no response	418 (21)
Disagree or strongly disagree	407 (20)
Cannabis should be legalized for recreational use	
Strongly agree or agree	651 (33)
Unsure or no response	504 (25)
Disagree or strongly disagree	832 (42)

DISCUSSION

Overall, 18% of respondents reported cannabis use within the 6 months before being surveyed, and 13% of all respondents reported use for cancer-related symptoms. The present work represents the first comprehensive and contemporary study describing the prevalence of cannabis use among Canadian patients with cancer. The study was performed at a provincial level and included thousands of responses.

Some limitations of the study are that patients might have been approached to complete the survey more than once if they attended a cancer centre multiple times during the study interval. Hence, multiple (up to a maximum of 5) responses could have been collected from the same individual. The instructions to the clerical staff—and the introductory statement circulated with the survey—were designed to avoid multiple survey completions, but to ensure confidentiality for patients who chose to participate, no patient tracking or personal identifiers were used. Furthermore, the survey was conducted in centres 1 and 2 two months before it was conducted in centres 3 and 4, potentially leading to an unknown confounder affecting the data collected.

TABLE IV Ordinal regression[a] of strong agreement or agreement with survey statements

Statement and comparator	OR	95% CI
Cannabis is harmful to the body		
Age group (years): 50–59 vs. 70–79	0.7	0.6 to 0.8[b]
Education: ≤high school vs. diploma/degree	0.6	0.5 to 0.8[b]
Sex: men vs. women	NA	
Lifetime use: yes vs. no	0.3	0.2 to 0.3[b]
Cannabis helps cure cancer		
Age group (years): 50–59 vs. 70–79	1.3	1.1 to 1.5[c]
Education: ≤high school vs. diploma/degree	2.8	2.1 to 3.6[b]
Sex: men vs. women	NA	
Lifetime use: yes vs. no	1.4	1.2 to 1.7[b]
Cannabis interferes with other medications		
Age group (years): 50–59 vs. 70–79	0.7	0.6 to 0.8[b]
Education: ≤high school vs. diploma/degree	0.6	0.4 to 0.7[b]
Sex: men vs. women	NA	
Lifetime use: yes vs. no	0.3	0.2 to 0.4[b]
Cannabis helps treat cancer symptoms		
Age group (years): 50–59 vs. 70–79	1.4	1.2 to 1.7[b]
Education: ≤high school vs. diploma/degree	NA	
Sex: men vs. women	NA	
Lifetime use: yes vs. no	4.6	3.7 to 5.8[b]
Cannabis should be used only under guidance of a doctor		
Age group (years): 50–59 vs. 70–79	0.7	0.6 to 0.8[b]
Education: ≤high school vs. diploma/degree	NA	
Sex: men vs. women	NA	
Lifetime use: yes vs. no	0.3	0.2 to 0.4[b]
Cannabis should be legalized for recreational use		
Age group (years): 50–59 vs. 70–79	1.3	1.1 to 1.5[b]
Education: ≤high school vs. diploma/degree	NA	
Sex: men vs. women	1.4	1.1 to 1.6[b]
Lifetime use: yes vs. no	4.1	3.4 to 4.9[b]

[a] The odds ratio is the likelihood that, compared with the second cohort, the first cohort will "agree" or "strongly agree" with the statement as opposed to taking an "unsure/don't know" or "disagree/strongly disagree" position. For example, compared with patients 70–79 years of age, those 50–59 years of age are 0.7 times as likely to either agree or strongly agree with the statement "Cannabis is harmful to the body".

[b] $p < 0.001$.

[c] $p < 0.01$.

OR = odds ratio; CI = confidence interval; NA = not applicable.

By design, the survey was anonymous, which limited our ability to compare the characteristics of respondents with nonrespondents. It is reassuring that the demographics of the patients with a scheduled appointment were similar to those of the respondents to the survey (one exception being the ≥80 age category). Also, patients with skin, gynecologic, and hematologic malignancies appeared less likely to participate. That observation could be related

to clinic flow in those tumour groups. Another limitation is that, by surveying patients in an outpatient cancer centre setting, we could not capture patients with early disease treated primarily with surgical modalities, patients with access difficulties, and patients with more advanced disease who have transitioned to care in the community. Finally, the survey was not able to identify whether any of the 119 lifetime users who had ever held authorizations or prescriptions for cannabis were reporting prior or current use of pharmaceutical cannabinoids such as nabilone.

Notwithstanding the foregoing limitations, the study showed a trend on logistic regression toward patients with any lifetime cannabis use being younger ($p = 0.07$). Upon further characterization, younger patients were less likely to believe that cannabis was harmful, that it interferes with other medications, or that cannabis should be used only under a doctor's supervision. Although the study did not assess the self-reported efficacy of cannabis, a large proportion of the respondents who had used cannabis within the preceding 6 months (70%) reported at least 1 cancer-related symptom as a reason for their use. Another large proportion of respondents (55%) agreed or strongly agreed with the statement "cannabis helps treat symptoms related to cancer like nausea and pain."

Other studies have reviewed attitudes toward cannabis in general. One prominent contribution was a survey of American Society of Clinical Oncology members by Doblin and Kleiman in 1991 (before 5-HT_3 receptor therapy for nausea), which showed that 44% of Society members had recommended illegal cannabis use to their patients, and 54% felt that cannabis should be available by prescription[4]. In a more recent study by Ware *et al.*[12], a questionnaire administered to 209 non-cancer patients found that cannabis users tended to be younger and more likely to use tobacco concurrently. In the Ware *et al.* cohort, 35% of patients had previously used cannabis, and of those, 15% used it specifically for pain relief. Those data are corroborated by data from the California Behavior Risk Factor Surveillance System, which showed that 5% of telephone respondents reported medical marijuana use and that respondents who used tended to be younger and to have conditions such as chronic pain[7]. A survey of a mixed cohort of patients from the United Kingdom reported on the opinions of 2969 respondents about cannabis use between 1998 and 2002[9]. The investigators found that 25% of patients with chronic pain had used medicinal cannabis. Younger age was again associated with use. In the Netherlands, Gorter *et al.*[3] found that, of patients who received prescriptions for cannabis for a variety of reasons, 64.1% (44% using for >5 months) reported a good or excellent effect on their symptoms.

In a comparable study from Israel in 2011, 279 of 17,000 patients with cancer (1.6%) had received a permit for cannabis use. Of those 279, 69 were surveyed (25% response rate)[13]. Respondents reported improvements in pain, appetite, well-being, and nausea with cannabis use. In our survey, 6% of respondents overall held an authorization for cannabis. Although respondents were not directly asked if cannabis had helped with the foregoing symptoms, more than half the current users endorsed cannabis use for such symptoms. Notably, in both jurisdictions, medical use was allowed with authorization, but recreational use was illegal.

Finally, in Washington State, where cannabis use is fully legalized, Pergam *et al.*[6] administered a survey about cannabis use to patients visiting a Seattle cancer centre. Of the respondents to that survey, 66% had used cannabis previously, and 21% and 24% had used cannabis within the preceding week and year respectively. Those rates are higher than the rates of 13% and 18% for 1 week and 6 months respectively found in the present study. That difference might be explained by the finding in the Washington State survey that legalization influenced decision-making with respect to current use. The authors noted use for cancer-related symptoms in 75% of respondents, which is similar to the 70% found in the present study.

When considering route of administration, our study found that 81% of lifetime users had used dried leaves, and 41% had used oils or edibles. Those rates are lower than the rates in a multinational Internet-based survey of medicinal cannabis users conducted by Hazekamp *et al.*[10], who found that 95% and 69% had tried inhaled and oral administration respectively. Interestingly, when planning future clinical trials, patients might prefer oral administration of cannabis, as was shown by Luckett *et al.*[14] in a 2016 study.

CONCLUSIONS

This multicentre study provides the most comprehensive insight to date into cannabis use in the cancer-patient population. Of patients with cancer who responded to the survey, 1 in 5 had used cannabis within the preceding 6 months, and 1 in 8 were using cannabis for at least 1 cancer-related symptom.

ACKNOWLEDGMENTS

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CONFLICT OF INTEREST DISCLOSURES

We have read and understood *Current Oncology*'s policy on disclosing conflicts of interest, and we declare that we have none.

AUTHOR AFFILIATIONS

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Exhibit 7

Original Article

Cannabis Use Among Patients at a Comprehensive Cancer Center in a State With Legalized Medicinal and Recreational Use

Steven A. Pergam, MD, MPH [1,2,3,4]; Maresa C. Woodfield, BS[1]; Christine M. Lee, PhD[5,6]; Guang-Shing Cheng, MD[2,3]; Kelsey K. Baker, MS[2]; Sara R. Marquis, MPH[1]; and Jesse R. Fann, MD, MPH[2,5]

BACKGROUND: Cannabis is purported to alleviate symptoms related to cancer treatment, although the patterns of use among cancer patients are not well known. This study was designed to determine the prevalence and methods of use among cancer patients, the perceived benefits, and the sources of information in a state with legalized cannabis. **METHODS:** A cross-sectional, anonymous survey of adult cancer patients was performed at a National Cancer Institute–designated cancer center in Washington State. Random urine samples for tetrahydrocannabinol provided survey validation. **RESULTS:** Nine hundred twenty-six of 2737 eligible patients (34%) completed the survey, and the median age was 58 years (interquartile range [IQR], 46-66 years). Most had a strong interest in learning about cannabis during treatment (6 on a 1-10 scale; IQR, 3-10) and wanted information from cancer providers (677 of 911 [74%]). Previous use was common (607 of 926 [66%]); 24% (222 of 926) used cannabis in the last year, and 21% (192 of 926) used cannabis in the last month. Random urine samples found similar percentages of users who reported weekly use (27 of 193 [14%] vs 164 of 926 [18%]). Active users inhaled (153 of 220 [70%]) or consumed edibles (154 of 220 [70%]); 89 (40%) used both modalities. Cannabis was used primarily for physical (165 of 219 [75%]) and neuropsychiatric symptoms (139 of 219 [63%]). Legalization significantly increased the likelihood of use in more than half of the respondents. **CONCLUSIONS:** This study of cancer patients in a state with legalized cannabis found high rates of active use across broad subgroups, and legalization was reported to be important in patients' decision to use. Cancer patients desire but are not receiving information about cannabis use during their treatment from oncology providers. ***Cancer* 2017;123:4488-97**. © 2017 The Authors. *Cancer* published by Wiley Periodicals, Inc. on behalf of *American Cancer Society*. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

KEYWORDS: cancer, cannabis, marijuana, pain, supportive care.

INTRODUCTION

Cannabis is the most frequently used illicit drug in the United States.[1-3] In the 2014-2015 National Survey on Drug Use and Health, 8.3% of those who were 12 years old or older had used cannabis in the past month.[2] Of adult active users, 9.8% reported use for medical reasons.[4] A number of states have passed regulations that allow medicinal and/or recreational cannabis use, and this has increased local access and availability.[4] In Washington State, cannabis was legalized for medicinal use in 1998 and for recreational use in November 2012; cannabis became commercially available in Washington in July 2014.

Cannabis has been purported to provide benefits for cancer patients, most frequently by alleviating anorexia, nausea, and pain.[5] Positive impacts on mood and insomnia have been suggested as additional benefits.[6] Research evaluating cannabis as therapy is limited,[7,8] and because of federal regulations, most studies have examined synthetic tetrahydrocannabinol (THC) analogues.[9-11] THC may help to relieve pain[12] and spasticity among targeted populations,[13] but data evaluating other therapeutic aspects of cannabis are insufficient.[5,7,14,15] With insufficient data demonstrating the benefits for cancer patients, small studies and clinical observations have also raised concerns about the safety of cannabis

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use in immunosuppressed populations.[16-19] Currently, most available data on the medical uses of cannabis for cancer-related symptom management come from nonscientific observations assembled from Web sites, lay press, and community interactions rather than rigorous scientific research.[7]

Increasing interest and shifting political attitudes on cannabis, coupled with a lack of knowledge of the risks and benefits in cancer care, indicate a need to understand current use patterns and to develop accurate and informative education for both cancer patients and their providers. The primary aim of this study was to better understand the extent and patterns of cannabis use among cancer patients in a state with legalized medical and recreational cannabis. We administered an anonymous survey to a representative cohort of ambulatory patients at a large National Cancer Institute–designated comprehensive cancer center in the Pacific Northwest specifically to determine the prevalence of cannabis use within a range of cancer patients. Furthermore, among active users, we assessed the methods of use, the context of their current use with medical treatment, the current reasons for use, the perceived impact of the legalization of recreational cannabis on current use, and patients' sources of information about cannabis use in cancer. Random urine samples tested for THC were used as a method of validation for survey prevalence data.

MATERIALS AND METHODS

Setting

We conducted a cross-sectional survey of cancer patients at the Seattle Cancer Care Alliance over a 6-week period between 2015 and 2016. The Seattle Cancer Care Alliance is the ambulatory center for a cancer consortium that includes the Fred Hutchinson Cancer Research Center, the University of Washington, and Seattle Children's Hospital; it serves patients from Alaska, Idaho, Montana, Oregon, Washington, and Wyoming as well as those referred to the center for hematopoietic cell transplantation and other research protocols. The facility includes clinical laboratories, clinics, radiology and procedure suites, and an infusion center; providers see approximately 75,000 outpatients yearly.

Participants

Patients presenting to the Seattle Cancer Care Alliance during the study period were eligible for the survey. To ensure a broad selection, surveys were offered in 3 clinical areas: radiology/special procedures, general oncology, and infusion units. Patients were eligible for the study and were given the opportunity to participate if they 1) were 18 years old or older, 2) were English-speaking, and 3) had not previously completed the survey at a prior appointment.

Survey Development

A 44-item questionnaire was developed to address cannabis use among cancer patients. These survey items were constructed to address key research questions on cannabis beliefs and health perceptions. An initial draft was informed by a literature review, consultations with clinical staff and patients, and study investigator experience. Independent clinical staff then assessed and modified the initial draft through one-on-one discussions and an e-mail review with investigators. Health care providers, nutritionists, specialists in patient education, and the local public health department provided feedback on the survey's content and format. A draft was then presented to a caregiver and patient committee, and this allowed feedback on the survey's methods and validity; after additional modifications, this committee approved the final survey. The final survey had an introductory page describing the study goals, the anonymous nature of responses, and the estimated time for completion. The survey covered demographic and clinical information as well as issues concerning cannabis use (see online supporting information).

Study Procedures

Eligible patients were approached on arrival by trained front-desk staff. Interested patients were given the paper survey and a prelabeled/self-sealing privacy envelope. Completed surveys were returned directly to front-desk staff in sealed envelopes and were picked up by the research team weekly or were sent by patients through campus/standard mail to the research team. Staff documented refusals during the first period of the survey distribution (radiology/procedures). In the other 2 areas, the denominator of eligible patients was determined from the total number of appointments/arrivals during the period of the survey distribution. An opt-out check box was also available; opt-outs and surveys that were returned unanswered were considered refusals. All anonymized survey responses were entered into Research Electronic Data Capture (RedCap, Nashville, Tennessee)[20] and were double-entered for accuracy.

Urine samples

In the first survey period, random leftover clinical urine samples ($\geq$1 mL) from the center's laboratory were processed for THC. All urine samples were stored anonymously onsite in refrigerators and were then processed in bulk with the enzyme multiplied immunoassay technique;

samples with detected THC concentrations ≥ 50 ng/mL were considered positive. Samples with detectable levels < 50 ng/mL were sent for confirmatory testing using gas chromatography–mass spectrometry (Mayo Clinical Reference Laboratory), which assessed them for Δ-9-tetrahydrocannabinol carboxylic acid. Those with samples insufficient for retesting or below the limit of detection (<3 ng/mL) were considered negative.

The survey, the methods for distribution, and all other study-related procedures were approved by the institutional review board of the Fred Hutchinson Cancer Research Center.

Measures

Sociodemographic variables included age, sex, education level, and residential distance from the cancer center, whereas the cancer status included various indicators of the current diagnosis and treatment status. Cannabis use was assessed with multiple variables, including any lifetime use, details of the frequency and recency of use, methods of use (including inhalation, edibles, or both), reasons for stopping, and the impact of legalization on use. In addition, we assessed where patients acquired information on cannabis and where they preferred to get this information. Respondents were characterized as self-identified active users (those patients who self-reported cannabis use within the last year), prior users (those patients who reported cannabis at any point in their life but not within the past year), and never users (those patients who reported no history of cannabis use). Those who used cannabis 1 or more times a day were considered heavy users, those who used cannabis less than once a day but 1 or more times a week were considered moderate users, and those who used cannabis less than once per week were considered light users. Nine self-reported reasons for using cannabis were assessed with a check-all-that-apply question and, for analyses, were stratified into physical symptoms (for pain, for nausea/upset stomach, and to improve appetite), neuropsychiatric symptoms (for depression/to improve mood, to help cope with illness, to help deal with stress, and to sleep), recreational use/enjoyment, and treatment of cancer.

Statistical Methods

Survey responses and data comparisons are summarized as frequencies and percentages for categorical variables and as medians and interquartile ranges (IQRs) for continuous variables. Statistical comparisons were performed with the chi-square test or Fisher's exact test (categorical variables), a 2-sample *t* test (continuous variable vs 2-category variable), or a 1-way analysis of variance (continuous variable vs 3-category variable). Because some questions allowed multiple responses, the sum was larger than the total sample of respondents; therefore, percentages represent the percentages of responses per the number of participants. To compare Likert scales, values were combined into low (1-3), medium (4-7), and high categories (8-10). Analyses were performed with SAS 9.4 (SAS, Cary, North Carolina). A significance level of .05 (2-sided) was used for all analyses.

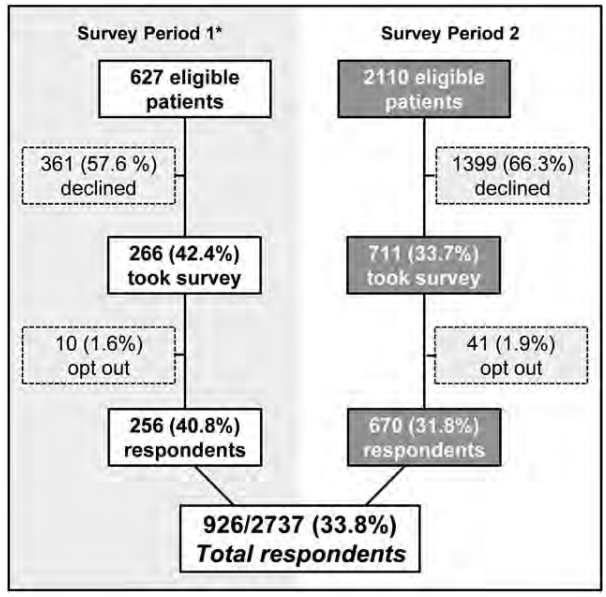


Figure 1. Schema of the survey respondents. Survey period 1 includes patients given the survey in the radiology/procedure suite waiting room (September 21 to October 9, 2015). During this period, surveyors recorded all refusals. Survey period 2 includes patients given the survey in the general oncology (January 11-25, 2016) and infusion waiting rooms (January 4-20, 2016). During this period, refusals were estimated on the basis of the number of unique patients seen in this area during the survey time period. *Anonymous leftover urine samples were collected during survey period 1. *Declined* indicates patients who declined to take the survey at the front desk, whereas *opt out* indicates patients who took the survey but returned the survey unanswered or after they had checked the opt-out box on the first page of the survey.

RESULTS

Demographics of the Survey Respondents

Out of a maximum of 2737 possible participants, 926 (34%) completed the survey (Fig. 1). Of those completing the survey, the median age was 58 years (IQR, 46-66 years), and the majority were men (Table 1). More than half reported having at least a college degree, and most lived locally (median from the center, 25 miles; IQR, 10-60 miles); the reported distances were consistent with the

TABLE 1. Respondent Demographics (n = 926)

Variable	Value
General	
Age, median (IQR), y	58 (46-66)
Age by decade, No. (%)	
<30 y	55 (6)
30-39 y	82 (10)
40-49 y	123 (14)
50-59 y	202 (24)
60-69 y	254 (30)
≥70 y	141 (16)
Sex, No. (%)	
Male	443 (52)
Female	417 (48)
Education, No. (%)	
Elementary school	5 (1)
High school/GED	102 (11)
Some college	252 (28)
College graduate	325 (36)
Graduate degree	209 (23)
Distance from center, median (IQR), miles	25 (10-60)
Distance from center, No. (%)	
≤25 miles	402 (52)
26-100 miles	264 (34)
101-250 miles	43 (6)
>250 miles	61 (8)
Cancer diagnosis	
Cancer group, No. (%)[a]	
Solid tumor	577 (66)
Hematologic	349 (34)
Type of cancer, No. (%)[a]	
Hematologic	298 (34)
Gastrointestinal	156 (18)
Breast	102 (12)
Lung or head/neck	108 (12)
Sarcoma/bone and joint	35 (4)
Skin	32 (4)
Gynecologic	24 (3)
Prostate	26 (3)
Brain	15 (2)
Genitourinary	18 (2)
Other	88 (10)
Cancer treatment status	
Treatment status, No. (%)	
Newly diagnosed	40 (5)
Currently undergoing treatment	580 (66)
Finished therapy	185 (21)
Not currently receiving treatment	79 (9)
First visit, No. (%)	
Yes	47 (5)
No	847 (95)
Currently receiving medication for cancer, No. (%)[b]	
Yes	586 (66)
No	250 (28)
Currently on radiation therapy, No. (%)[b]	
Yes	63 (7)
No	780 (88)
Currently receiving bone marrow transplant, No. (%)[b]	
Yes	161 (18)
No	693 (78)
Type of bone marrow transplant, No. (%)[c]	
Autologous	59 (41)
Allogeneic	69 (48)
Both	17 (12)

Abbreviations: GED, general educational development; IQR, interquartile range. Not all respondents completed demographic data, so percentages given as total per question. Percentages may not always equal 100% due to rounding.
[a] Patients could choose more than one option, as some had multiple cancers.
[b] Does not equal 100%, as <10% of respondents reported that they did not know if they were on active therapy.
[c] Among patients reporting that they had received a bone marrow transplant.

center's national catchment area (Supporting Fig. 1 [see online supporting information]). The largest group of respondents had an underlying solid tumor malignancy, and the majority were receiving active cancer treatment at the time of the survey's completion (Table 1). When we compared the 2 study periods, differences in sex, the type of cancer, and the treatment status were noted (Supporting Table 1 [see online supporting information]).

Current and Past Cannabis Use

Sixty-six percent of the respondents (607 of 926) had used cannabis at some point in their life, and 24% (222 of 926) considered themselves active cannabis users (Supporting Fig. 2 [see online supporting information]). Active users were younger, had less education, and were less likely to be hematopoietic cell transplant recipients in comparison with prior and never users (Table 2); the underlying type of cancer did not affect use. There were no differences in cannabis use among respondents in the 2 study periods (Supporting Table 1 [see online supporting information]).

Most active users had used cannabis before their cancer diagnosis (147 [67%]). Of those who quit, most did so before their diagnosis (266 of 326 [82%]), and they were older (median, 59 years; IQR, 50-66 years) than those who quit after their diagnosis (median, 48 years; IQR, 34-58 years; $P < .0001$). Most who quit after their diagnosis (32 of 57 [56%]) were undergoing active treatment for a solid tumor malignancy; a small number quit on the basis of a recommendation from their cancer or primary care physician (8 of 51 [16%] and 2 of 51 [4%], respectively). The majority of the active users had told their cancer team about their use (138 of 221 [62%]).

Frequency and Methods of Cannabis Use

Of the 222 active cannabis users, 164 (74%) reported using cannabis at least once a week (moderate use), and 124 (56%) used cannabis at least daily (heavy use); 68 (31%) used cannabis multiple times a day. Among the 193 leftover urine samples selected from the ambulatory laboratory for THC testing, 27 (14%) were positive (23 by the enzyme multiplied immunoassay technique and 4 by gas chromatography–mass spectrometry), and this was consistent with the number of survey respondents who reported at least moderate (weekly) use (164 of 926 [18%]).

A similar number of active users smoked (153 of 220 [70%]) or used edibles (154 [70%]), although dual use was also common (89 [40%]; Fig. 2). Pipes were the most common method of inhalation, and they were followed by vaporizers and rolled cigarettes; the most

TABLE 2. Demographic Comparisons Among Cancer Patients by Cannabis Use Status[a]

Variable	Active Users, No. (%)	Prior Users, No. (%)	Never Users, No. (%)	*P*[b]	*P* for Active Users vs All Others
Age group (decades)				<.0001	<.0001
<30 y	21 (10)	18 (5)	14 (5)		
30 to <40 y	22 (10)	36 (10)	23 (8)		
40 to <50 y	37 (17)	51 (14)	34 (12)		
50 to <60 y	52 (25)	96 (27)	54 (19)		
60 to <70 y	68 (32)	117 (33)	69 (24)		
≥70 y	12 (6)	38 (11)	91 (32)		
Sex				.02	.04
Male	123 (57)	189 (53)	128 (45)		
Female	92 (43)	167 (47)	157 (55)		
Legalization and use (scale, 1-10)				<.0001	<.0001
1-3 (no change)	65 (30)	177 (47)	213 (69)		
4-7	37 (17)	106 (28)	52 (17)		
8-10 (much more likely)	117 (53)	97 (26)	45 (15)		
Education				<.01	<.01
Elementary school	3 (1)	0 (0)	2 (1)		
High school/GED	37 (17)	36 (10)	29 (10)		
Some college	64 (29)	100 (27)	85 (28)		
College graduate	80 (37)	133 (36)	110 (37)		
Graduate degree	35 (16)	100 (27)	74 (25)		
Type of cancer[c,d]				N/A	N/A
Gastrointestinal	45 (21)	55 (15)	55 (18)		
Hematologic	66 (31)	124 (35)	107 (36)		
Gynecologic	7 (3)	15 (4)	2 (1)		
Lung or head/neck	29 (13)	40 (11)	37 (12)		
Breast	24 (11)	42 (12)	36 (12)		
Genitourinary	5 (2)	9 (3)	4 (1)		
Prostate	9 (4)	11 (3)	6 (2)		
Brain	4 (2)	9 (3)	2 (1)		
Skin	10 (5)	13 (4)	9 (3)		
Sarcoma/bone and joint	10 (5)	11 (3)	14 (5)		
Hematologic disease (nonmalignant)	11 (5)	21 (6)	21 (7)		
Other	9 (4)	14 (4)	11 (4)		
Cancer group				.43	.20
Solid tumor	150 (69)	231 (65)	192 (64)		
Hematologic	66 (31)	124 (35)	107 (36)		
BMT status				<.01	<.01
Transplant patient	24 (11)	84 (23)	52 (17)		
Nontransplant patient	184 (84)	269 (73)	236 (79)		
Unknown	11 (5)	14 (4)	12 (4)		
Any current information source				<.0001	<.0001
Yes	178 (87)	194 (59)	87 (32)		
No	26 (13)	136 (41)	184 (68)		

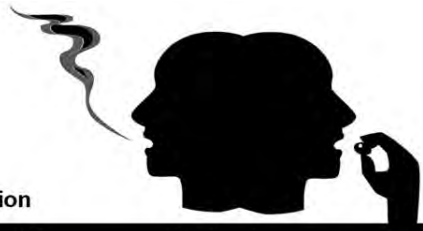
Abbreviations: BMT, bone marrow transplant; GED, General Educational Development; N/A, not available.
[a] Not all percentages equal 100% due to rounding.
[b] *P* values for categorical variables were calculated with the chi-square test of independence.
[c] *P* values for the type of cancer could not be calculated because some patients had multiple cancers.
[d] Total percentage may be greater than 100%, because respondents could select more than one option.

frequent forms of edibles were store-bought candy/other edibles, butters/oils, and homemade baked goods.

Reasons for Marijuana Use Among Active Users

Active users reported using cannabis most frequently for pain, which was followed by nausea/upset stomach and stress (Fig. 3). Seventy-six of 219 patients (35%) reported using cannabis for enjoyment/recreational use, but only 16 of these patients (7.3%) used cannabis for this reason exclusively. Use for neuropsychiatric reasons (139 of 219 [63%]) was nearly as common as use for physical symptoms (165 of 219 [75%]; Fig. 3). More than one-quarter of active users (58 of 219 [26%]) believed that cannabis was helping to treat their cancer, and 10 (5%) indicated that this was their only reason for use. Regardless of symptoms, 106 of 206 (51%) felt that cannabis was a major benefit (score on a Likert scale, 8-10), and 80 (39%) felt that it was a moderate benefit (score, 4-7).

In comparison with prior and never users, active users reported that they were more likely to use cannabis



Methods of Inhalation

Method n=153*	n(%)
Pipe	95 (62)
Vaporizer	77 (50)
Joint	47 (31)
Water pipe/Bong	44 (29)
Other	5 (3)

Methods n=220*	n(%)
Both inhalation & ingestion	89 (40)
Ingestion only	65 (30)
Inhale/Smoke only	64 (29)
Topical	6 (3)
Other	2 (1)

Methods of Ingestion

Method n=154*	n(%)
Purchased candy/edibles	72 (47)
Butters/oils	64 (42)
Homemade baked goods	52 (34)
Purchased baked goods	40 (26)
Purchased beverages	21 (14)

Figure 2. Patterns of cannabis use among active users. *Total percentages may be greater than 100%, because respondents could select more than one option.

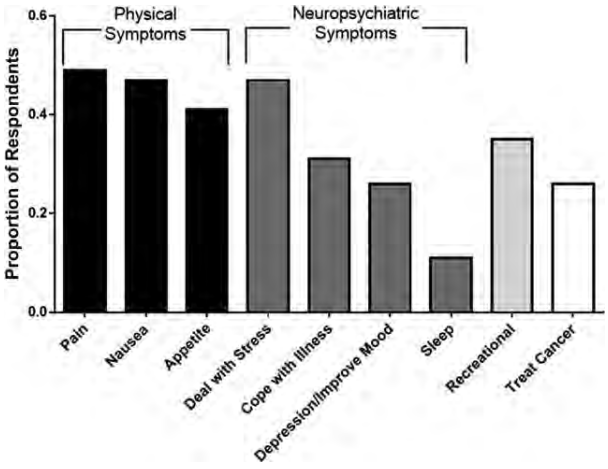


Figure 3. Reasons for cannabis use among the survey respondents. The reasons for use were not mutually exclusive responses. Overall, the respondents used cannabis for physical symptoms (165 of 219 [75%]), for neuropsychiatric symptoms (139 of 219 [63%]), recreationally (76 of 219 [35%]), and to treat cancer (58 of 219 [26%]).

because of its legalization ($P < .001$; scale, 1 [no change] to 10 [much more likely]): the median value was 8 for active users (IQR, 1-10), 4 for prior users (IQR, 1-8), and 1 for never users (IQR, 1-6). Among active and prior users, women were more likely to use because of legalization in comparison with men ($P = .002$; Supporting Table 1 [see online supporting information]).

Knowledge and Sources of Information

The majority of the respondents wanted to learn more about cannabis and cancer (6 on a 1-10 scale; IQR, 3-10) but the level of interest varied with age ($P < .01$; Fig. 4A). Although nearly all respondents preferred to get information from their cancer team, (677/911 [74%]) less than 15% received information from their cancer physician or nurse (Fig. 4B). Most received information from friends/family, newspaper/magazine articles, Web sites/blogs, or another cancer patient; more than one-third reported that they had not received any information. Only 73 of the 926 patients completing the survey (8%) did not want to receive more information.

DISCUSSION

This survey-based study of cancer patients at a large comprehensive cancer center within a state with medically and recreationally legalized cannabis found that nearly a quarter of patients reported active use. More than half of active users reported that legalization significantly increased their likelihood of using, and cannabis use was spread across demographic subsets, including age, sex, and cancer diagnosis subsets. Respondents reported using a diverse mix of cannabis products, which were evenly divided between inhaled and edible modalities. Cannabis was used commonly for the relief of physical symptoms, but use for neuropsychiatric symptoms was nearly as frequent. Even among never users, the respondents indicated substantial interest in learning more about the role of cannabis in cancer care. Despite nearly all respondents wanting more information/education directly from their hematology/oncology providers, most reported that they were more likely to get information from sources outside the health care system.

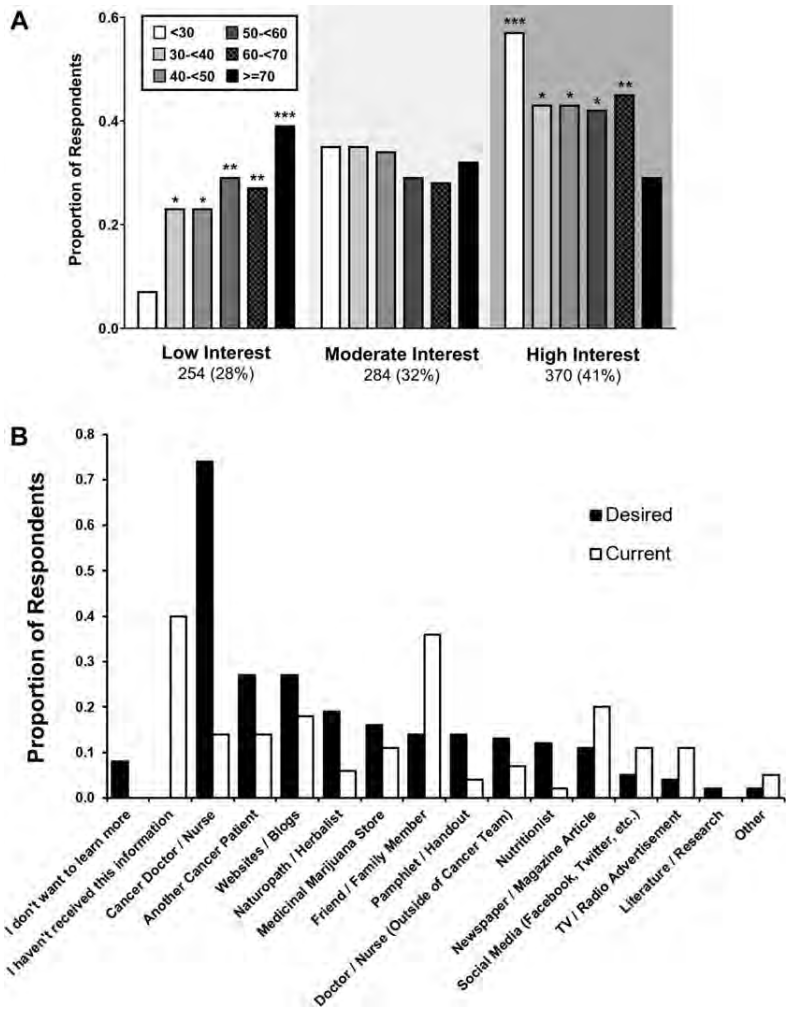


Figure 4. Cancer respondents' interest in education and sources of information about cannabis use during cancer therapy. (A) Interest in learning about cannabis during cancer therapy stratified by age (*$P \leq .05$, **$P < .01$, and ***$P < .001$). In the low-interest group, comparisons were made between ages < 30 years and other age strata. In the high-interest group, comparisons were made between ages ≥ 70 years and other age strata. No statistical differences were found in the moderate-interest group. (B) Desired and current sources of information about cannabis during cancer therapy. The responses were not mutually exclusive.

Self-reported cannabis use among respondents in our study was 24% within the last year and 21% within the last month. These levels are more than double those reported in national prevalence studies, where rates vary between 1.8% and 8.3% over 1 month and between 2.8% and 12.9% over 1 year.[2-4,21-25] The younger demographic drives rates in most large studies, in which nearly 20% of 18- to 25-year-olds are reported to use cannabis.[2] In contrast, those under the age of 30 years made up only 6% of our total respondents but had rates of active use of nearly 40%.

Studies specifically targeting older adults (≥50 years), which are more consistent with our cohort's median age, have described cannabis use rates of 1.8% per month and 2.8% to 4.8% per year.[23,26] Older adults at our cancer center were much more likely to use cannabis, with rates anywhere from 4 to 14 times those reported for the general population. The frequency of THC detection in anonymized leftover urine samples appeared to corroborate survey data for patients who reported a weekly use.

Comparing our results with the results for other cancer populations is difficult because of the limited number of studies. An Australian study evaluating cannabis use among patients with advanced cancer and/or a poor appetite at cancer and palliative care clinics found that 26 of 204 patients (13%) had previously used medical cannabis.[27] A study from Israel, where medical cannabis is legal, estimated that only 1.7% of 17,000 cancer patients had acquired a permit for medical marijuana.[28] Among

patients receiving medical cannabis, only 7% of those in California reportedly used it for cancer-related complications,[29] and only 2.6% of those in the Netherlands reported combined medical cannabis and oncolytics.[30] Although reports indicate that less than 20% of patients use cannabis for primarily medicinal purposes,[31] with the rest presumably using cannabis recreationally, only 7% of the respondents in our study used cannabis only for recreational purposes.

Cannabis use in other immunosuppressed populations and in those with other chronic conditions also appears to be higher overall than usage rates reported for the general public.[32-34] However, comparisons with our data may be less relevant because most studies are not conducted in locales with available recreational cannabis and/or focus on diseases that are more frequently reported in younger patient populations (eg, inflammatory bowel disease) and/or may be associated with increased substance use (eg, human immunodeficiency virus).[35]

Respondents in our cohort used cannabis for a wide variety of physical and neuropsychiatric symptoms that have a limited evidence base.[7,36,37] Most frequently, patients used cannabis to treat pain. Although there is evidence for the pain-relieving properties of cannabis, most data come from small studies that have evaluated its use for chronic neuropathic pain.[37-40] Other more recent studies have suggested that cannabis may help to limit opioid use in some patients with chronic pain.[12,41] However, because pain can be a persistent symptom in cancer patients, intermittent use among respondents may indicate limits to the benefits of cannabis use for pain control. Future studies evaluating cannabis in cancer-related pain control are needed to assess its role as a potential adjunct to currently approved pain-control strategies.

Data supporting cannabis use for nausea and appetite improvement are even less clear, with some studies suggesting possible benefits[15,42] and others suggesting none.[11,14] Despite weak evidence, nearly 50% of oncologists would still recommend cannabis for such symptoms.[43] In addition, a significant number of respondents believed that cannabis helped to treat their cancer, although no trials have addressed this question.

Neuropsychiatric problems such as depression, anxiety, and insomnia are common during cancer treatment, and evidence-based treatments are available to address these problems.[44] Despite little scientific data supporting cannabis use for mental health–related symptoms during cancer treatment,[45] our findings reveal that a large proportion of patients use cannabis for these issues. Cannabis use may be associated with self-medication of serious psychiatric disorders and/or avoidance of potentially beneficial evidence-based approaches to these problems. Research is needed to examine the potential role of cannabis as an alternative or adjunct for treating depression, anxiety,[46] and insomnia[47,48] in addition to other common cancer-related comorbidities. In future studies, it may be important to compare cannabis with alcohol and other illicit substances that may also be used by patients to mitigate some of these same symptoms

There is a need to better understand methods of cannabis use to maximize benefit and limit risk because patients are already using a wide variety of products. Prior studies using synthetic THC analogues[9-11] have not incorporated the whole cannabis plant and, therefore, cannot evaluate other substances, such as terpenes and flavonoids, that may enhance or provide additional therapeutic properties.[49] At the same time, the numerous potential risks of cannabis in this population, including drug-drug interactions,[17,50] infections,[16,51-54] sinopulmonary side effects,[18,54-56] neuropsychiatric sequelae,[19,57] and unintended overdoses/poisonings,[58-61] argue for rigorous safety studies. Currently, however, the US government continues to classify cannabis as a schedule I drug, and this restricts federal funding for safety studies and those assessing its therapeutic use in this population.[62]

Our study is not without limitations typically seen in survey studies. Most importantly, only 1 in 3 patients responded to the survey, so it is possible that a sampling bias may have led to either overrepresentation or underrepresentation of current use patterns among cancer patients. For example, it is possible that patients who were already interested in cannabis may have been more likely to respond to our survey, and this could have inflated the number of active users. Conversely, because cannabis remains an illicit drug, social desirability may have led respondents to underreport use. As with many survey instruments, it is also possible that because questions were asked about both recent and past use, a recall bias may have also affected responses. Furthermore, it is possible that patients taking dronabinol or other cannabinoids may have considered themselves cannabis users, and such agents may have affected urinary testing. Our data may not reflect rates of use among cancer patients in other states that have different medical/recreational cannabis laws. Finally, our survey was limited to English-speaking patients and potentially missed segments of the population whose cannabis usage patterns may vary because of cultural differences. Despite these limitations, the moderate response rate, large sample size, and corroboration between random urinary

testing and survey results suggest that this study provides a good estimate of current use practices at our center.

It is expected that many of the estimated 1.7 million patients in the United States diagnosed with cancer yearly will be exposed to increased local availability, permissiveness, and nonscientific reports suggesting benefits of cannabis. Because it is estimated that cannabis use will continue to expand nationally,[24] the development of a framework for understanding the utility of cannabis among patients who are diagnosed with cancer has become important for both patients and providers. Despite the limited evidence for a medical role for cannabis in oncology, our data suggest that cannabis may be currently used frequently in this setting. Patients are interested in receiving information about how cannabis might benefit them and prefer that this information come directly from their cancer providers. There is a need for clinical trials evaluating the role of cannabis in symptom management and for the development of formalized education for patients and health care professionals about the risks and benefits of use in this population.

FUNDING SUPPORT

Study data were collected and managed using REDCap electronic data capture tools[20] hosted at the Institute of Translational Health Sciences. REDCap (Research Electronic Data Capture) is a secure, web-based application designed to support data capture for research studies, providing: 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for importing data from external sources. REDCap at ITHS is supported by the National Center For Advancing Translational Sciences of the National Institutes of Health under Award Number UL1 TR002319. Maresa C. Woodfield was supported in part by a research scholarship from the Mary Gates Endowment for Students at the University of Washington. The contents of this article are solely the responsibility of the authors and do not necessarily represent the official views of the National Institutes of Health, Fred Hutchinson Cancer Research Center, Seattle Cancer Care Alliance, or the University of Washington.

CONFLICT OF INTEREST DISCLOSURES

Steven A. Pergam has received research support from and has been a consultant for Merck Sharp & Dohme Corp. and Optimer/Cubist Pharmaceuticals outside the submitted work. Guang-Shing Cheng has served as a consultant for Gilead Sciences. Jesse R. Fann is a consultant for Quartet Health.

AUTHOR CONTRIBUTIONS

Steven A. Pergam: Full access to all data in the study; responsibility for the integrity of the data and the accuracy of all analyses; study concept and design; acquisition, analysis, or interpretation of the data; drafting of the manuscript; critical revision of the manuscript for important intellectual content; statistical analysis; and study supervision. **Maresa C. Woodfield:** Full access to all data in the study; study concept and design; acquisition, analysis, or interpretation of the data; drafting of the manuscript; critical revision of the manuscript for important intellectual content; and statistical analysis. **Christine M. Lee:** Full access to all data in the study; study concept and design; acquisition, analysis, or interpretation of the data; drafting of the manuscript; critical revision of the manuscript for important intellectual content; and statistical analysis. **Guang-Shing Cheng:** Full access to all data in the study; acquisition, analysis, or interpretation of the data; drafting of the manuscript; critical revision of the manuscript for important intellectual content; and statistical analysis. **Kelsey K. Baker:** Full access to all data in the study; acquisition, analysis, or interpretation of the data; drafting of the manuscript; critical revision of the manuscript for important intellectual content; and statistical analysis. **Sara R. Marquis:** Full access to all data in the study; acquisition, analysis, or interpretation of the data; drafting of the manuscript; critical revision of the manuscript for important intellectual content; and statistical analysis. **Jesse R. Fann:** Full access to all data in the study; study concept and design; acquisition, analysis, or interpretation of the data; drafting of the manuscript; critical revision of the manuscript for important intellectual content; statistical analysis; and study supervision.

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Exhibit 8

DEPARTMENT OF JUSTICE

Drug Enforcement Administration

21 CFR Chapter II

[Docket No. DEA–427]

Denial of Petition To Initiate Proceedings To Reschedule Marijuana

AGENCY: Drug Enforcement Administration, Department of Justice.

ACTION: Denial of petition to initiate proceedings to reschedule marijuana.

SUMMARY: By letter dated July 19, 2016 the Drug Enforcement Administration (DEA) denied a petition to initiate rulemaking proceedings to reschedule marijuana. Because the DEA believes that this matter is of particular interest to members of the public, the agency is publishing below the letter sent to the petitioner which denied the petition, along with the supporting documentation that was attached to the letter.

DATES: August 12, 2016.

FOR FURTHER INFORMATION CONTACT: Michael J. Lewis, Office of Diversion Control, Drug Enforcement Administration; Mailing Address: 8701 Morrissette Drive, Springfield, Virginia 22152; Telephone: (202) 598–6812

SUPPLEMENTARY INFORMATION:

July 19, 2016

Dear Mr. Krumm:

On December 17, 2009, you petitioned the Drug Enforcement Administration (DEA) to initiate rulemaking proceedings under the rescheduling provisions of the Controlled Substances Act (CSA). Specifically, you petitioned DEA to have marijuana removed from schedule I of the CSA and rescheduled in any schedule other than schedule I of the CSA.

You requested that DEA remove marijuana from schedule I based on your assertion that:

1. Marijuana has accepted medical use in the United States;
2. Studies have shown that smoked marijuana has proven safety and efficacy;
3. Marijuana is safe for use under medical supervision; and
4. Marijuana does not have the abuse potential for placement in schedule I

In accordance with the CSA scheduling provisions, after gathering the necessary data, DEA requested a scientific and medical evaluation and scheduling recommendation from the Department of Health and Human Services (HHS). HHS concluded that marijuana has a high potential for abuse, has no accepted medical use in the United States, and lacks an acceptable level of safety for use even under medical supervision. Therefore, HHS recommended that marijuana remain in schedule I. The scientific and medical evaluation and scheduling recommendation that HHS submitted to DEA is attached hereto.

Based on the HHS evaluation and all other relevant data, DEA has concluded that there is no substantial evidence that marijuana should be removed from schedule I. A document prepared by DEA addressing these materials in detail also is attached hereto. In short, marijuana continues to meet the criteria for schedule I control under the CSA because:

(1) *Marijuana has a high potential for abuse.* The HHS evaluation and the additional data gathered by DEA show that marijuana has a high potential for abuse.

(2) *Marijuana has no currently accepted medical use in treatment in the United States.* Based on the established five-part test for making such determination, marijuana has no ''currently accepted medical use'' because: As detailed in the HHS evaluation, the drug's chemistry is not known and reproducible; there are no adequate safety studies; there are no adequate and well-controlled studies proving efficacy; the drug is not accepted by qualified experts; and the scientific evidence is not widely available.

(3) *Marijuana lacks accepted safety for use under medical supervision.* At present, there are no U.S. Food and Drug Administration (FDA)-approved marijuana products, nor is marijuana under a New Drug Application (NDA) evaluation at the FDA for any indication. The HHS evaluation states that marijuana does not have a currently accepted medical use in treatment in the United States or a currently accepted medical use with severe restrictions. At this time, the known risks of marijuana use have not been shown to be outweighed by specific benefits in well-controlled clinical trials that scientifically evaluate safety and efficacy.

The statutory mandate of 21 U.S.C. 812(b) is dispositive. Congress established only one schedule, schedule I, for drugs of abuse with ''no currently accepted medical use in treatment in the United States'' and ''lack of accepted safety for use under medical supervision.'' 21 U.S.C. 812(b).

Although the HHS evaluation and all other relevant data lead to the conclusion that marijuana must remain in schedule I, it should also be noted that, in view of United States obligations under international drug control treaties, marijuana cannot be placed in a schedule less restrictive than schedule II. This is explained in detail in the accompanying document titled ''Preliminary Note Regarding Treaty Considerations.''

Accordingly, and as set forth in detail in the accompanying HHS and DEA documents, there is no statutory basis under the CSA for DEA to grant your petition to initiate rulemaking proceedings to reschedule marijuana. Your petition is, therefore, hereby denied.

Sincerely,

Chuck Rosenberg,

Acting Administrator

Attachments:

Preliminary Note Regarding Treaty Considerations

Cover Letter from HHS to DEA Summarizing the Scientific and Medical Evaluation and Scheduling Recommendation for Marijuana.

U.S. Department of Health and Human Services (HHS)—Basis for the Recommendation for Maintaining Marijuana in Schedule I of the Controlled Substances Act

U.S. Department of Justice—Drug Enforcement Administration (DEA), Schedule of Controlled Substances: Maintaining Marijuana in Schedule I of the Controlled Substances Act, Background, Data, and Analysis: Eight Factors Determinative of Control and Findings Pursuant to 21 U.S.C. 812(b)

Dated: July 19, 2016.

Chuck Rosenberg,

Acting Administrator.

Preliminary Note Regarding Treaty Considerations

As the Controlled Substances Act (CSA) recognizes, the United States is a party to the Single Convention on Narcotic Drugs, 1961 (referred to here as the Single Convention or the treaty). 21 U.S.C. 801(7). Parties to the Single Convention are obligated to maintain various control provisions related to the drugs that are covered by the treaty. Many of the provisions of the CSA were enacted by Congress for the specific purpose of ensuring U.S. compliance with the treaty. Among these is a scheduling provision, 21 U.S.C. 811(d)(1). Section 811(d)(1) provides that, where a drug is subject to control under the Single Convention, the DEA Administrator (by delegation from the Attorney General) must ''issue an order controlling such drug under the schedule he deems most appropriate to carry out such [treaty] obligations, without regard to the findings required by [21 U.S.C. 811(a) or 812(b)] and without regard to the procedures prescribed by [21 U.S.C. 811(a) and (b)].''

Marijuana is a drug listed in the Single Convention. The Single Convention uses the term ''cannabis'' to refer to marijuana.[1] Thus, the DEA Administrator is obligated under section 811(d) to control marijuana in the

[1] Under the Single Convention, '''cannabis plant' means any plant of the genus Cannabis.'' Article 1(c). The Single Convention defines ''cannabis'' to include ''the flowering or fruiting tops of the cannabis plant (excluding the seeds and leaves when not accompanied by the tops) from which the resin has not been extracted, by whatever name they may be designated.'' Article 1(b). This definition of ''cannabis'' under the Single Convention is slightly less inclusive than the CSA definition of ''marihuana,'' which includes all parts of the cannabis plant except for the mature stalks, sterilized seeds, oil from the seeds, and certain derivatives thereof. *See* 21 U.S.C. 802(16). Cannabis and cannabis resin are included in the list of drugs in Schedule I and Schedule IV of the Single Convention. In contrast to the CSA, the drugs listed in Schedule IV of the Single Convention are also listed in Schedule I of the Single Convention and are subject to the same controls as Schedule I drugs as well as additional controls. Article 2, par. 5

schedule that he deems most appropriate to carry out the U.S. obligations under the Single Convention. It has been established in prior marijuana rescheduling proceedings that placement of marijuana in either schedule I or schedule II of the CSA is ''necessary as well as sufficient to satisfy our international obligations'' under the Single Convention. *NORML* v. *DEA,* 559 F.2d 735, 751 (D.C. Cir. 1977). As the United States Court of Appeals for the D.C. Circuit has stated, ''several requirements imposed by the Single Convention would not be met if cannabis and cannabis resin were placed in CSA schedule III, IV, or V.'' [2] *Id.* Therefore, in accordance with section 811(d)(1), DEA must place marijuana in either schedule I or schedule II.

Because schedules I and II are the only possible schedules in which marijuana may be placed, for purposes of evaluating this scheduling petition, it is essential to understand the differences between the criteria for placement of a substance in schedule I and those for placement in schedule II. These criteria are set forth in 21 U.S.C. 812(b)(1) and (b)(2), respectively. As indicated therein, substances in both schedule I and schedule II share the characteristic of ''a high potential for abuse.'' Where the distinction lies is that schedule I drugs have ''no currently accepted medical use in treatment in the United States'' and ''a lack of accepted safety for use of the drug . . . under medical supervision,'' while schedule II drugs do have ''a currently accepted medical use in treatment in the United States.'' [3]

Accordingly, in view of section 811(d)(1), this scheduling petition turns on whether marijuana has a currently accepted medical use in treatment in the United States. If it does not, DEA must, pursuant to section 811(d), deny the petition and keep marijuana in schedule I.

As indicated, where section 811(d)(1) applies to a drug that is the subject of a rescheduling petition, the DEA Administrator must issue an order controlling the drug under the schedule he deems most appropriate to carry out United States obligations under the Single Convention, without regard to the findings required by sections 811(a) or 812(b) and without regard to the procedures prescribed by sections 811(a) and (b). Thus, since the only determinative issue in evaluating the present scheduling petition is whether marijuana has a currently accepted medical use in treatment in the United States, DEA need not consider the findings of sections 811(a) or 812(b) that have no bearing on that determination, and DEA likewise need not follow the procedures prescribed by sections 811(a) and (b) with respect to such irrelevant findings. Specifically, DEA need not evaluate the relative abuse potential of marijuana or the relative extent to which abuse of marijuana may lead to physical or psychological dependence.

As explained below, the medical and scientific evaluation and scheduling recommendation issued by the Secretary of Health and Human Services concludes that marijuana has no currently accepted medical use in treatment in the United States, and the DEA Administrator likewise so concludes. For the reasons just indicated, no further analysis beyond this consideration is required. Nonetheless, because of the widespread public interest in understanding all the facts relating to the harms associated with marijuana, DEA is publishing here the entire medical and scientific analysis and scheduling evaluation issued by the Secretary, as well as DEA's additional analysis.

Department of Health and Human Services, Office of the Secretary Assistant Secretary for Health, Office of Public Health and Science Washington DC 20201.

June 25, 2015.

The Honorable Chuck Rosenberg
Acting Administrator, Drug Enforcement Administration, U.S. Department of Justice, 8701 Morrissette Drive, Springfield, VA 22152

Dear Mr. Rosenberg:

Pursuant to the Controlled Substances Act (CSA, 21 U.S.C. 811(b), (c), and (f)), the Department of Health and Human Services (HHS) is recommending that marijuana continue to be maintained in Schedule I of the CSA.

The Food and Drug Administration (FDA) has considered the abuse potential and dependence-producing characteristics of marijuana.

Marijuana meets the three criteria for placing a substance in Schedule I of the CSA under 21 U.S.C. 812(b)(1). As discussed in the enclosed analyses, marijuana has a high potential for abuse, no currently accepted medical use in treatment in the United States, and a lack of accepted safety for use under medical supervision. Accordingly, HHS recommends that marijuana be maintained in Schedule I of the CSA. Enclosed are two documents prepared by FDA's Controlled Substance Staff (in response to petitions filed in 2009 by Mr. Bryan Krumm and in 2011 by Governors Lincoln D. Chafee and Christine O. Gregoire) that form the basis for the recommendation. Pursuant to the requests in the petitions, FDA broadly evaluated marijuana, and did not focus its evaluation on particular strains of marijuana or components or derivatives of marijuana.

FDA's Center for Drug Evaluation and Research's current review of the available evidence and the published clinical studies on marijuana demonstrated that since our 2006 scientific and medical evaluation and scheduling recommendation responding to a previous DEA petition, research with marijuana has progressed. However, the available evidence is not sufficient to determine that marijuana has an accepted medical use. Therefore, more research is needed into marijuana's effects, including potential medical uses for marijuana and its derivatives. Based on the current review, we identified several methodological challenges in the marijuana studies published in the literature. We recommend they be addressed in future clinical studies with marijuana to ensure that valid scientific data are generated in studies evaluating marijuana's safety and efficacy for therapeutic use. For example, we recommend that studies need to focus on consistent administration and reproducible dosing of marijuana, potentially through the use of administration methods other than smoking. A summary of our review of the published literature on the clinical uses of marijuana, including recommendations for future studies, is attached to this document.

FDA and the National Institutes of Health's National Institute on Drug Abuse (NIDA) also believe that work continues to be needed to ensure support by the federal government for the efficient conduct of clinical research using marijuana. Concerns have been raised about whether the existing federal regulatory system is flexible enough to respond to increased interest in research into the potential therapeutic uses of marijuana and marijuana-derived drugs. HHS welcomes an opportunity to continue to explore these concerns with DEA.

Should you have any questions regarding theses recommendations, please contact Corinne P. Moody, Science Policy Analyst, Controlled Substances Staff, Center for Drug Evaluation and Research, FDA, at (301) 796–3152.

Sincerely yours,

Karen B. DeSalvo, MD, MPH, MSc
Acting Assistant Secretary for Health

Enclosure:

Basis for the Recommendation for Maintaining Marijuana in Schedule I of the Controlled Substances Act

[2] The Court further stated: ''For example, [article 31 paragraph 4 of the Single Convention] requires import and export permits that would not be obtained if the substances were placed in CSA schedules III through V. In addition, the quota and [recordkeeping] requirements of Articles 19 through 21 of the Single Convention would be satisfied only by placing the substances in CSA schedule I or II.'' *Id.* n. 71 (internal citations omitted).

[3] As DEA has stated in evaluating prior marijuana rescheduling petitions, ''Congress established only one schedule, schedule I, for drugs of abuse with 'no currently accepted medical use in treatment in the United States' and 'lack of accepted safety for use . . . under medical supervision.' 21 U.S.C. 812(b).'' 76 FR 40552 (2011); 66 FR 20038 (2001).

Basis for the Recommendation for Maintaining Marijuana in Schedule I of the Controlled Substances Act

On December 17, 2009, Mr. Bryan Krumm submitted a petition to the Drug Enforcement Administration (DEA) requesting that proceedings be initiated to repeal the rules and regulations that place marijuana [4] in Schedule I of the Controlled Substances Act (CSA). The petitioner contends that marijuana has an accepted medical use in the United States, has proven safety and efficacy, is safe for use under medical supervision, and does not have the abuse potential for placement in Schedule I. The petitioner requests that marijuana be rescheduled to any schedule other than Schedule I of the CSA. In May 2011, the DEA Administrator requested that the U.S. Department of Health and Human Services (HHS) provide a sdentific and medical evaluation of the available information and a scheduling recommendation for marijuana, in accordance with the provisions of 21 U.S.C. 811(b).

In accordance with 21 U.S.C. 811(b), the DEA has gathered information related to the control of marijuana *(Cannabis sativa)* [5] under the CSA. Pursuant to 21 U.S.C. 811(b), the Secretary of HHS is required to consider in a scientific and medical evaluation eight factors determinative of control under the CSA. Following consideration of the eight factors, if it is appropriate, the Secretary must make three findings to recommend scheduling a substance in the CSA or transferring a substance from one schedule to another. The findings relate to a substance's abuse potential, legitimate medical use, and safety or dependence liability. Administrative responsibilities for evaluating a substance for control under the CSA are performed by the Food and Drug Administration (FDA), with the concurrence of the National Institute on Drug Abuse (NIDA), as described in the Memorandum of Understanding (MOU) of March 8, 1985 (50 FR 9518–20).

In this document, FDA recommends continued control of marijuana in Schedule I of the CSA. Pursuant to 21 U.S.C. 811(c), the eight factors pertaining to the scheduling of marijuana are considered below.

1. Its Actual or Relative Potential for Abuse

Under the first factor the Secretary must consider marijuana's actual or relative potential for abuse. The CSA does not define the term ''abuse.'' However, the CSA's legislative history suggests the following in determining whether a particular drug or substance has a potential for abuse: [6]

a. There is evidence that individuals are taking the drug or drugs containing such a substance in amounts sufficient to create a hazard to their health or to the safety of other individuals or to the community.

b. There is a significant diversion of the drug or drugs containing such a substance from legitimate drug channels.

c. Individuals are taking the drug or drugs containing such a substance on their own initiative rather than on the basis of medical advice from a practitioner licensed by law to administer such drugs in the course of his professional practice.

d. The drug or drugs containing such a substance are new drugs so related in their action to a drug or drugs already listed as having a potential for abuse to make it likely that the drug will have the same potentiality for abuse as such drugs, thus making it reasonable to assume that there may be significant diversions from legitimate channels, significant use contrary to or without medical advice, or that it has a substantial capability of creating hazards to the health of the user or to the safety of the community.

In the development of this scientific and medical evaluation for the purpose of scheduling, the Secretary analyzed considerable data related to the substance's abuse potential. The data include a discussion of the prevalence and frequency of use, the amount of the substance available for illicit use, the ease of obtaining or manufacturing the substance, the reputation or status of the substance ''on the street,'' and evidence relevant to at-risk populations. Importantly, the petitioners define marijuana as including all *Cannabis* cultivated strains. Different marijuana samples derived from various cultivated strains may have very differernt chemical consituents, thus the analysis is based on what is known about the range of these constituents across all cultivated strains.

Determining the abuse potential of a substance is complex with many dimensions, and no single test or assessment provides a complete characterization. Thus, no single measure of abuse potential is ideal. Scientifically, a comprehensive evaluation of the relative abuse potential of a substance can include consideration of the following elements: Receptor binding affinity, preclinical pharmacology, reinforcing effects, discriminative stimulus effects, dependence producing potential, pharmacokinetics, route of administration, toxicity, data on actual abuse, clinical abuse potential studies, and public health risks. Importantly, abuse can exist independently from tolerance or physical dependence because individuals may abuse drugs in doses or patterns that don not induce these phenomena. Additionally evidence of clandestine population and illicit trafficking of a substance can shed light on both the demand for a substance as well as the ease of obtaining a substance. Animal and human laboratory data and epidemiological data are all used in determining a substance's abuse potential. Moreover, epidemiological data can indicate actual abuse.

The petitioner compares the effects of marijuana to currently controlled Schedule II substances and make repeated claims about their comparative effects. Comparisons between marijuana and the diverse array of Schedule II substances is difficult, because of the pharmacologically dissimilar actions of substances of Schedule II of the CSA. For example, Schedule II substances include stimulant-like drugs (*e.g.,* cocaine, methylphenidate, and amphetamine), opioids (*e.g.,* oxycodone, fentanyl), sedatives (*e.g.,* pentobarbital, amobarbital), dissociative anesthetics (*e.g.,* PCP), and naturally occurring plant components (*e.g.,* coca leaves and poppy straw). The mechanism(s) of action of the above Schedule II substances are wholly different from on another, and they are different from tetrahydrocannabinol (THC) and marijuana as well. For example, Schedule II stimulants typically function by increasing monoaminergic tone via an increase in dopamine and norepinephrine (Schmitt et al., 2013). In contrast, opioid analgesics function via mu-opioid receptor agonist effects.

[4] Note that ''marihuana'' is the spelling originally used in the Controlled Substances Act (CSA). This document uses the spelling that is more common in current usage, ''marijuana.''

[5] The CSA defines marihuana (marijuana) as the following:

All parts of the plant Cannabis sativa L., whether growing or not; the seeds thereof; the resin extracted from any part of such plant; and every compound, manufacture, salt, derivative, mixture, or preparation of such plant, its seeds or resin. Such term does not include the mature stalks of such plant, fiber produced from such stalks, oil or cake made from the seeds of such plant, any other compound, manufacture, salt, derivative, mixture, or preparation of such mature stalks (except the resin extracted therefrom), fiber, oil, or cake, or the sterilized seed of such plant which is incapable of germination (21 U.S.C. 802(16)).

[6] Comprehensive Drug Abuse Prevention and Control Act of 1970, H.R. Rep. No. 91–1444, 91st Cong., Sess. 1 (1970) reprinted in U.S.C.C.A.N. 4566, 4603.

These differing mechanism(s) of action result in vastly different behavioral and adverse effect profiles, making comparisons across the range of pharmacologically diverse C–II substances inappropriate.

In addition, many substances scheduled under the CSA are reviewed and evaluated within the context of commercial drug development, using data submitted in the form of a new drug application (NDA). A new analgesic drug might be compared to a currently scheduled analgesic drug as part of the assessment of its relative abuse potential. However, because the petitioners have not identified a specific indication for the use of marijuana, identifying an appropriate comparator based on indication cannot be done.

a. There is evidence that individuals are taking the substance in amounts sufficient to create a hazard to their health or to the safety of other individuals or to the community.

Evidence shows that some individuals are taking marijuana in amounts sufficient to create a hazard to their health and to the safety of other individuals and the community. A large number of individuals use marijuana. HHS provides data on the extent of marijuana abuse through NIDA and the Substance Abuse and Mental Health Services Administration (SAMHSA). According to the most recent data from SAMHSA's 2012 National Survey on Drug Use and Health (NSDUH), which estimates the number of individuals who have use a substance within a month prior to the study (described as ''current use''), marijuana is the most commonly used illicit drug among American aged 12 years and older, with an estimated 18.9 million Americans having used marijuana within the month prior to the 2012 NSDUH. Compared to 2004, when an estimated 14.6 million individuals reported using marijuana within the month prior to the study, the estimated rates in 2012 show an increase of approximately 4.3 million individuals. The 2013 Monitoring the Future (MTF) survey of 8th, 10th, and 12th grade students also indicates that marijuana is the most widely used illicit substance in this age group. Specifically, current month use was at 7.0 percent of 8th graders, 18.0 percent of 10th, graders and 22.7 percent of 12th graders. Additionally, the 2011 Treatment Episode Data Set (TEDS) reported that primary marijuana abuse accounted for 18.1 percent of non-private substance-abuse treatment facility admissions, with 24.3 percent of those admitted reporting daily use. However, of these admissions for primary marijuana abuse, the criminal justice system referred 51.6 percent to treatment. SAMHSA's Drug Abuse Warning Network (DAWN) was a national probability survey of U.S. hospitals with emergency departments (EDs) and was designed to obtain information on ED visits in which marijuana was mentioned, accounting for 36.4 percent of illicit drug related ED visits. There are some limitations related to DAWN data on ED visits, which are discussed in detail in Factor 4, ''Its History and Current Pattern of Abuse;'' Factor 5, ''The Scope, Duration, and Significance of Abuse;'' and Factor 6, ''What, if an, Risk There is to the Public Health.'' These factors contain detailed discussions of these data.

A number of risks can occur with both acute and chronic use of marijuana. Detailed discussions of the risks are addressed in Factor 2, ''Scientific Evidence of its Pharmacological Effect, if Known,'' and Factor 6, ''What, if any, Risk There is to the Public Health.''

b. There is significant diversion of the substance from legitimate drug channels.

There is a lack of evidence of significant diversion of marijuana from legitimate drug channels, but this is likely due to the fact that marijuana is more widely available from illicit sources rather than through legitimate channels. Marijuana is not an FDA-approved drug product, as an NDA or biologics license application (BLA) has not been approved for marketing in the United States. Numerous states and the District of Columbia have state-level medical marijuana laws that allow for marijuana use within that state. These state-level drug channels do not have sufficient collection of data related to medical treatment, including efficacy and safety.

Marijuana is used by researchers for nonclinical research as well as clinical research under investigational new drug (IND) applications; this represents the only legitimate drug channel in the United States. However, marijuana used for research reporesents a very small contribution of the total amount of marijuana available in the United States, and thus provides limited information about diversion. In addition, the lack of significant diversion of investigation supplies is likely because of the widespread availability of illicit marijuana of equal or greater amounts of delta^{9}-THC. The data originating from the DEA on seizure statistics demonstrate the magnitude of the availability for illicit marijuana. DEA's System to Retrieve Information from Drug Evidence (STRIDE) provides information on total domestic drug seizures, STRIDE reports a total domestic seizure of 573,195 kg of marijuana in 2011, the most recent year with complete data that is currently publically available (DEA Domestic Drug Seizures, n.d.).

c. Individuals are taking the substance on their own initiative rather than on the basis of medical advice from a practitioner licensed by law to administer such substances.

Because the FDA has not approved an NDA or BLA for a marijuana drug product for any therapeutic indication, the only way an individual can take marijuana on the basis of medical advice through legitimate channels at the federal level is by participating in research under an IND application. That said, numerous states and the District of Columbia have passed state-level medical marijuana laws allowing for individuals to use marijuana under certain cicrumstances. However, data are not yet available to determine the number of individuals using marijuana under these state-level medical marijuana laws. Regardless, according to the 2012 NSDUH data, 18.9 million American adults currently use marijuana (SAMHSA, 2013). Based on the large number of individuals reporting current use of marijuana and the lack of an FDA-approved drug product in the United States, one can assume that it is likely that the majority of individuals using marijuana do so on their own initiative rather than on the basis of medical advice from a licensed practitioner.

d. The substance is so related in its action to a substance already listed as having a potential for abuse to make it likely that it will have the same potential for abuse as such substance, thus making it reasonable to assume that there may be significant diversions from legitimate channels, significant use contrary to or without medical advice, or that it has a substantial capability of creating hazards to the health of the user or to the safety of the community.

FDA has approved two drug products containing cannabinoid compounds that are structurally related to the active components in marijuana. These two marketed products are controlled under the CSA. Once a specific drug product containing cannabinoids becomes approved, that specific drug product may be moved from Schedule I to a different Schedule (II–V) under the CSA. Firstly, Marinol—generically known as dronabinol—is a Schedule III drug product containing synthetic delta^{9}-THC. Marinol, which is formulated in sesame oil in soft gelatin capsules, was first placed in Schedule II under the CSA following its approval by the FDA. Marinol was later rescheduled

to Schedule III under the CSA because of low numbers of reports of abuse relative to marijuana. Dronabinol is listed in Schedule I under the CSA. FDA approved Marinol in 1985 for the treatment of nausea and vomiting associated with cancer chemotherapy in patients who failed to respond adequately to conventional anti-emetic treatments. In 1992, FDA approved Marional for anorexia associated with weight loss in patients with acquired immunodeficiency syndrome (AIDS). Secondly, in 1985, FDA approved Cesamet, a drug product containing the Schedule II substance nabilone, for the treatment of nausea and vomiting associated with cancer chemotherapy. Besides the two cannabinoid-containing drug products FDA approved for marketing, other naturally occurring cannabinoids and their derivatives (from *Cannabis*) and their synthetic equivalents with similar chemical structure and pharmacological activity are included in the CSA as Schedule I substances.

2. Scientific Evidence of Its Pharmacological Effects, if Known

Under the second factor, the Secretary must consider the scientific evidence of marijuana's pharmacological effects. Abundant scientific data are available on the neurochemistry, toxicology, and pharmacology of marijuana. This section includes a scientific evaluation of marijuana's neurochemistry; pharmacology; and human and animal behavioral, central nervous system, cognitive, cardiovascular, autonomic, endocrinological, and immunological system effects. The overview presented below relies upon the most current research literature on cannabinoids.

Neurochemistry and Pharmacology of Marijuana

Marijuana is a plant that contains numerous natural constituents, such as cannabinoids, that have a variety of pharmacological actions. The petition defines marijuana as including all Cannabis cultivated strains. Different marijuana samples derived from various cultivated strains may have very different chemical constituents including delta^9-THC and other cannabinoids (Appendino et al., 2011). As a consequence, marijuana products from different strains will have different biological and pharmacological profiles.

According to ElSohly and Slade (2005) and Appendino et al. (2011), marijuana contains approximately 525 identified natural constituents, including approximately 100 compounds classified as cannabinoids. Cannabinoids primarily exist in Cannabis, and published data suggests that most major cannabinoid compounds occurring naturally have been identified chemically. New and minor cannabinoids and other new compounds are continuously being characterized (Pollastro et al., 2011). So far, only two cannabinoids (cannabigerol and its corresponding acid) have been obtained from a non-Cannabis source. A South African *Helichrysum* (*H. umbraculigerum*) accumulates these compounds (Appendino et al., 2011). The chemistry of marijuana is described in more detail in Factor 3, ''The State of Current Scientific Knowledge Regarding the Drug or Other Substance.''

The site of cannabinoid action is at the cannabinoid receptors. Cloning of cannabinoid receptors, first from rat brain tissue (Matsuda et al., 1990) and then from human brain tissue (Gerard et al., 1991), has verified the site of action. Two cannabinoid receptors, CB_1 and CB_2, were characterized (Battista et al., 2012; Piomelli, 2005). Evidence of a third cannabinoid receptor exists, but it has not been identified (Battista et al., 2012).

The cannabinoid receptors, CB_1 and CB_2, belong to the family of G-protein-coupled receptors, and present a typical seven transmembrane-spanning domain structure. Cannabinoid receptors link to an inhibitory G-protein (G_i), such that adenylate cyclase activity is inhibited when a ligand binds to the receptor. This, in tum, prevents the conversion of ATP to the second messenger, cyclic AMP (cAMP). Examples of inhibitory coupled receptors include opioid, muscarinic cholinergic, alpha$_2$-adrenoreceptors, dopamine (D_2), and serotonin (5-HT_1).

Cannabinoid receptor activation inhibits N- and P/Q-type calcium channels and activates inwardly rectifying potassium channels (Mackie et al., 1995; Twitchell et al., 1997). N-type calcium channel inhibition decreases neurotransmitter release from several tissues. Thus, calcium channel inhibition may be the mechanism by which cannabinoids inhibit acetylcholine, norepinephrine, and glutamate release from specific areas of the brain. These effects may represent a potential cellular mechanism underlying cannabinoids' antinociceptive and psychoactive effects (Ameri, 1999).

CB_1 receptors are found primarily in the central nervous system, but are also present in peripheral tissues. CB_1 receptors are located mainly in the basal ganglia, hippocarnpus, and cerebellum of the brain (Howlett et al., 2004). The localization of these receptors may explain cannabinoid interference with movement coordination and effects on memory and cognition. Additionally, CB_1 receptors are found in the immune system and numerous other peripheral tissues (Petrocellis and Di Marzo, 2009). However, the concentration of CB_1 receptors is considerably lower in peripheral tissues than in the central nervous system (Herkenharn et al., 1990 and 1992).

CB_2 receptors are found primarily in the immune system, but are also present in the central nervous system and other peripheral tissues. In the immune system, CB_2 receptors are found predominantly in B lymphocytes and natural killer cells (Bouaboula et al., 1993). CB_2 receptors may mediate cannabinoids' immunological effects (Galiegue et al., 1995). Additionally, CB_2 receptors have been localized in the brain, primarily in the cerebellum and hippocampus (Gong et al., 2006). The distribution of CB_2 receptors throughout the body is less extensive than the distribution of CB_1 receptors (Petrocellis and Di Marzo, 2009). However, both CB_1 and CB_2 receptors are present in numerous tissues of the body.

Cannabinoid receptors have endogenous ligands. In 1992 and 1995, two endogenous cannabinoid receptor agonists, anandamide and arachidonyl glycerol (2-AG), respectively, were identified (Di Marzo, 2006). Anandamide is a low efficacy agonist (Breivogel and Childers, 2000) and 2-AG is a high efficacy agonist (Gonsiorek et al., 2000). Cannabinoid endogenous ligands are present in central as well as peripheral tissues. A combination of uptake and hydrolysis terminate the action of the endogenous ligands. The endogenous cannabinoid system is a locally active signaling system that, to help restore homeostasis, is activated ''on demand'' in response to changes to the local homeostasis (Petrocellis and Di Marzo, 2009). The endogenous cannabinoid system, including the endogenous cannabinoids and the cannabinoid receptors, demonstrate substantial plasticity in response to several physiological and pathological stimuli (Petrocellis and Di Marzo, 2009). This plasticity is particularly evident in the central nervous system.

Delta^9-THC and cannabidiol (CBD) are two abundant cannabinoids present in marijuana. Marijuana's major psychoactive cannabinoid is delta^9-THC (Wachtel et al., 2002). In 1964, Gaoni and Mechoularn first described delta^9-THC's structure and function. In 1963, Mechoularn and Shvo first described CBD's structure. The pharmacological actions of CBD have not been fully studied in humans.

Delta9-THC and CBD have varying affinity and effects at the cannabinoid receptors. Delta9-THC displays similar affinity for CB_1 and CB_2 receptors, but behaves as a weak agonist for CB_2 receptors. The identification of synthetic cannabinoid ligands that selectively bind to CB_2 receptors but do not have the typical delta9-THC-like psychoactive properties suggests that the activation of CB_1-receptors mediates cannabinoids' psychotropic effects (Hanus et al., 1999). CBD has low affinity for both CB_1 and CB_2 receptors (Mechoulam et al., 2007). According to Mechoulam et al. (2007), CBD has antagonistic effects at CB_1 receptors and some inverse agonistic properties at CB_2 receptors. When cannabinoids are given subacutely to rats, CB_1 receptors down-regulate and the binding of the second messenger system coupled to CB_1 receptors, GTPgarnmaS, decreases (Breivogel et al., 2001).

Animal Behavioral Effects

Self-Administration

Self-administration is a method that assesses the ability of a drug to produce rewarding effects. The presence of rewarding effects increases the likelihood of behavioral responses to obtain additional drug. Animal self-administration of a drug is often useful in predicting rewarding effects in humans, and is indicative of abuse liability. A good correlation is often observed between those drugs that rhesus monkeys self-administer and those drugs that humans abuse (Balster and Bigelow, 2003). Initially, researchers could not establish self-administration of cannabinoids, including delta9-THC, in animal models. However, self-administration of delta9-THC can now be established in a variety of animal models under specific training paradigms (Justinova et al., 2003, 2004, 2005).

Squirrel monkeys, with and without prior exposure to other drugs of abuse, self-administer delta9-THC under specific conditions. For instance, Tanda et al. (2000) observed that when squirrel monkeys are initially trained to self-administer intravenous cocaine, they will continue to bar-press delta9-THC at the same rate as they would with cocaine. The doses were notably comparable to those doses used by humans who smoke marijuana. SR141716, a CB_1 cannabinoid receptor agonist-antagonist, can block this rewarding effect. Other studies show that naïve squirrel monkeys can be successfully trained to self-administer delta9-THC intravenously (Justinova et al., 2003). The maximal responding rate is 4 µg/kg per injection, which is 2–3 times greater than observed in previous studies using cocaine-experienced monkeys. Naltrexone, a mu-opioid antagonist, partially antagonizes these rewarding effects of delta9-THC (Justinova et al., 2004).

Additionally, data demonstrate that under specific conditions, rodents self-administer cannabinoids. Rats will self-administer delta9-THC when applied intracerebroventricularly (i.c.v.), but only at the lowest doses tested (0.01–0.02 µg/infusion) (Braida et al., 2004). SR141716 and the opioid antagonist naloxone can antagonize this effect. However, most studies involve rodents self-administrating the synthetic cannabinoid WIN 55212, a CB_1 receptor agonist with a non-cannabinoid structure (Deiana et al., 2007; Fattore et al., 2007; Martellotta et al., 1998; Mendizabal et al., 2006).

Aversive effects, rather than reinforcing effects, occur in rats that received high doses of WIN 55212 (Chaperon et al., 1998) or delta9-THC (Sanudo-Pena et al., 1997), indicating a possible critical dose-dependent effect. In both studies, SR141716 reversed these aversive effects.

Conditioned Place Preference

Conditioned place preference (CPP) is a less rigorous method than self-administration for determining whether or not a drug has rewarding properties. In this behavioral test, animals spend time in two distinct environments: One where they previously received a drug and one where they received a placebo. If the drug is reinforcing, animals will choose to spend more time in the environment paired with the drug, rather than with the placebo, when presented with both options s.imultaneously.

Animals show CPP to delta9-THC, but only at the lowest doses tested (0.075–1.0 mg/kg, intraperitoneal (i.p.)) (Braida et al., 2004). SR141716 and naloxone antagonize this effect (Braida et al., 2004). As a partial agonist, SR141716 can induce CPP at doses of 0.25, 0.5, 2 and 3 mg/kg (Cheer et al., 2000). In knockout mice, those without µ-opioid receptors do not develop CPP to delta9-THC (Ghozland et al., 2002).

Drug Discrimination Studies

Drug discrimination is a method where animals indicate whether a test drug produces physical or psychic perceptions similar to those produced by a known drug of abuse. In this test, an animal learns to press one bar when it receives the known drug of abuse and another bar when it receives placebo. To determine whether the test drug is like the known drug of abuse, a challenge session with the test drug demonstrates which of the two bars the animal presses more often.

In addition to humans (Lile et al., 2009; Lile et al., 2011), it has been noted that animals, including monkeys (McMahon, 2009), mice (McMahon et al., 2008), and rats (Gold et al., 1992), are able to discriminate cannabinoids from other drugs or placebo. Moreover, the major active metabolite of delta9-THC, 11-hydroxy-delta9-THC, also generalizes (following oral administration) to the stimulus cues elicited by delta9-THC (Browne and Weissman, 1981). Twenty-two other cannabinoids found in marijuana also fully substitute for delta9-THC. However, CBD does not substitute for delta9-THC in rats (Vann et al., 2008).

Discriminative stimulus effects of delta9-THC are pharmacologically specific for marijuana containing cannabinoids (Balster and Prescott, 1992; Browne and Weissman, 1981; Wiley et al., 1993, 1995). The discriminative stimulus effects of the cannabinoid group appear to provide unique effects because stimulants, hallucinogens, opioids, benzodiazepines, barbiturates, NMDA antagonists, and antipsychotics do not fully substitute for delta9-THC.

Central Nervous System Effects

Human Physiological and Psychological Effects

Psychoactive Effects

Below is a list of the common subjective responses to cannabinoids (Adams and Martin, 1996; Gonzalez, 2007; Hollister 1986, 1988; Institute of Medicine, 1982). According to Maldonado (2002), these responses to marijuana are pleasurable to many humans and are often associated with drug-seeking and drug-taking. High levels of positive psychoactive effects are associated with increased marijuana use, abuse, and dependence (Scherrer et al., 2009; Zeiger et al., 2010).

(1) Disinhibition, relaxation, increased sociability, and talkativeness.

(2) Increased merriment and appetite, and even exhilaration at high doses.

(3) Enhanced sensory perception, which can generate an increased appreciation of music, art, and touch.

(4) Heightened imagination, which can lead to a subjective sense of increased creativity.

(5) Initial dizziness, nausea, tachycardia, facial flushing, dry mouth, and tremor.

(6) Disorganized thinking, inability to converse logically, time distortions, and short-term memory impairment.

(7) Ataxia and impaired judgment, which can impede driving ability or lead to an increase in risk-tasking behavior.

(8) Illusions, delusions, and hallucinations that intensify with higher doses.

(9) Emotional lability, incongruity of affect, dysphoria, agitation, paranoia, confusion, drowsiness, and panic attacks, which are more common in inexperienced or high-dosed users.

As with many psychoactive drugs, a person's medical, psychiatric, and drug-taking history can influence the individual's response to marijuana. Dose preferences to marijuana occur in that marijuana users prefer higher concentrations of the principal psychoactive substance (1.95 percent delta^9-THC) over lower concentrations (0.63 percent delta^9-THC) (Chait and Burke, 1994). Nonetheless, frequent marijuana users (≤100 times of use) were able to identify a drug effect from low-dose delta^9-THC better than occasional users (<10 times of use) while also experiencing fewer sedative effects from marijuana (Kirk and de Wit, 1999).

The petitioners contend that many of marijuana's naturally occurring cannabinoids mitigate the psychoactive effects of delta^9-THC, and therefore that marijuana lacks sufficient abuse potential to warrant Schedule I placement, because Marinol, which is in Schedule III, contains only delta^9-THC. This theory has not been demonstrated in controlled studies. Moreover, the concept of abuse potential encompasses all properties of a substance, including its chemistry, pharmacology, and pharmacokinetics, as well as usage patterns and diversion history. The abuse potential of a substance is associated with the repeated or sporadic use of a substance in nonmedical situations for the psychoactive effects the substance produces. These psychoactive effects include euphoria, perceptual and other cognitive distortions, hallucinations, and mood changes. However, as stated above, the abuse potential not only includes the psychoactive effects, but also includes other aspects related to a substance.

DEA's final published rule entitled ''Rescheduling of the Food and Drug Administration Approved Product Containing Synthetic Dronabinol [(–)-delta^9-(trans)-Tetrahydrocannabinol] in Sesame Oil and Encapsulated in Soft Gelatin Capsules From Schedule II to Schedule III'' (64 FR 35928, July 2, 1999) rescheduled Marinol from Schedule II to Schedule III. The HHS assessment of the abuse potential and subsequent scheduling recommendation compared Marinol to marijuana on different aspects related to abuse potential. Major differences in formulation, availability, and usage between marijuana and the drug product, Marinol, contribute to their differing abuse potentials.

Hollister and Gillespie (1973) estimated that delta^9-THC by smoking is 2.6 to 3 times more potent than delta^9-THC ingested orally. The intense psychoactive drug effect achieved, rapidly by smoking is generally considered to produce the effect desired by the abuser. This effect explains why abusers often prefer to administer certain drugs by inhalation, intravenously, or intranasally rather than orally. Such is the case with cocaine, opium, heroin, phencyclidine, methamphetamine, and delta^9-THC from marijuana (0.1–9.5 percent delta^9-THC range) or hashish (10–30 percent delta^9-THC range) (Wesson and Washburn, 1990). Thus, the delayed onset and longer duration of action for Marinol may be contributing factors limiting the abuse or appeal of Marinol as a drug of abuse relative to marijuana.

The formulation of Marinol is a factor that contributes to differential scheduling of Marinol and marijuana. For example, extraction and purification of dronabinol from the encapsulated sesame oil mixture of Marinol is highly complex and difficult. Additionally, the presence of sesame oil mixture in the formulation may preclude the smoking of Marinol-laced cigarettes.

Additionally, there is a dramatic difference between actual abuse and illicit trafficking of Marinol and marijuana. Despite Marinol's availability in the United States, there have been no significant reports of abuse, diversion, or public health problems due to Marinol. By comparison, 18.9 million American adults report currently using marijuana (SAMHSA, 2013).

In addition, FDA's approval of an NDA for Marinol allowed for Marinol to be rescheduled to Schedule II, and subsequently to Schedule III of the CSA. In conclusion, marijuana and Marinol differ on a wide variety of factors that contribute to each substance's abuse potential. These differences are major reasons distinguishing the higher abuse potential for marijuana and the different scheduling determinations of marijuana and Marinol.

In terms of the petitioners' claim that different cannabinoids present in marijuana mitigate the psychoactive effects of delta^9-THC, only three of the cannabinoids present in marijuana were simultaneously administered with delta^9-THC to examine how the combinations of these cannabinoids such as CBD, cannabichromene (CBC) and cannabinol (CBN) influence delta^9-THC's psychoactive effects. Dalton et al. (1976) observed that smoked administration of placebo marijuana cigarettes containing injections of 0.15 mg/kg CBD combined with 0.025mg/kg of delta^9-THC, in a 7:1 ratio of CBD to delta^9-THC, significantly decreased ratings of acute subjective effects and ''high'' when compared to smoking delta^9-THC alone. In contrast, Ilan et al. (2005) calculated the naturally occurring concentrations of CBC and CBD in a batch of marijuana cigarettes with either 1.8 percent or 3.6 percent delta^9-THC concentration by weight. For each strength of delta^9-THC in marijuana cigarettes, the concentrations of CBC and CBD were classified in groups of either low or high. The study varied the amount of CBC and CBD within each strength of delta^9-THC marijuana cigarettes, with administrations consisting of either low CBC (between 0.1–0.2 percent CBC concentration by weight) and low CBD (between 0.1–0.4 percent CBD concentration by weight), high CBC (≤ 0.5 percent CBC concentration by weight) and low CBD, or low CBC and high CBD (≤1.0 percent CBD concentration by weight). Overall, all combinations scored significantly greater than placebo on ratings of subjective effects, and there was no significant difference between any combinations.

The oral administration of a combination of either 15, 30, or 60 mg CBD with 30 mg delta^9-THC dissolved in liquid (in a ratio of at least 1:2 CBD to delta^9-THC) reduced the subjective effects produced by delta^9-THC alone (Karniol et al., 1974). Additionally, orally administering a liquid mixture combining 1 mg/kg CBD with 0.5 mg/kg of delta^9-THC (ratio of 2:1 CBD to delta^9-THC) decreased scores of anxiety and marijuana drug effect on the Addiction Research Center Inventory (ARCI) compared to delta^9-THC alone (Zuardi et al., 1982). Lastly, oral administration of either 12.5, 25, or 50 mg CBN combined with 25 mg delta^9-THC dissolved in liquid (ratio of at least 1:2 CBN to delta^9-THC) significantly increased subjective ratings of ''drugged,'' ''drowsy,'' ''dizzy,'' and ''drunk,'' compared to delta^9-THC alone (Karniol et al., 1975).

Even though some studies suggest that CBD may decrease some of delta^9-THC's psychoactive effects, the ratios of CBD to delta^9-THC administered in these studies are not present in marijuana used by most people. For example, in one study, researchers used smoked

marijuana with ratios of CBD to delta9-THC naturally present in marijuana plant material and they found out that varying the amount of CBD actually had no effect on delta9-THC's psychoactive effects (Ilan et al., 2005). Because most marijuana currently available on the street has high amounts of delta9-THC with low amounts of CBD and other cannabinoids, most individuals use marijuana with low levels of CBD present (Mehmedic et al., 2010). Thus, any possible mitigation of delta9-THC's psychoactive effects by CBD will not occur for most marijuana users. In contrast, one study indicated that another cannabinoid present in marijuana, CBN, may enhance delta9-THC's psychoactive effects (Karniol et al., 1975).

Behavioral Impairment

Marijuana induces various psychoactive effects that can lead to behavioral impairment. Marijuana's acute effects can significantly interfere with a person's ability to learn in the classroom or to operate motor vehicles. Acute administration of smoked marijuana impairs performance on learning, associative processes, and psychomotor behavioral tests (Block et al., 1992). Ramaekers et al. (2006a) showed that acute administration of 250 µg/kg and 500 µg/kg of delta9-THC in smoked marijuana dose-dependently impairs cognition and motor control, including motor impulsivity and tracking impairments (Ramaekers et al., 2006b). Similarly, administration of 290 µg/kg delta9-THC in a smoked marijuana cigarette resulted in impaired perceptual motor speed and accuracy: Two skills which are critical to driving ability (Kurzthaler et al., 1999). Lastly, administration of 3.95 percent delta9-THC in a smoked marijuana cigarette not only increased disequilibrium measures, but also increased the latency in a task of simulated vehicle braking at a rate comparable to an increase in stopping distance of five feet at 60 mph (Liguori et al., 1998). However, acute administration of marijuana containing 2.1 percent delta9-THC does not produce ''hangover effects'' (Chait, 1990).

In addition to measuring the acute effects immediately following marijuana administration, researchers have conducted studies to determine how long behavioral impairments last after abstinence. Some of marijuana's acute effects may not fully resolve until at least one day after the acute psychoactive effects have subsided. Heishman et al. (1990) showed that impairment on memory tasks persists for 24 hours after smoking marijuana cigarettes containing 2.57 percent delta9-THC. However, Fant et al. (1998) showed that the morning after exposure to 1.8 percent or 3.6 percent smoked delta9-THC, subjects had minimal residual alterations in subjective or performance measures.

A number of factors may influence marijuana's behavioral effects including the duration of use (chronic or short term), frequency of use (daily, weekly, or occasionally), and amount of use (heavy or moderate). Researchers also have examined how long behavioral impairments last following chronic marijuana use. These studies used self-reported histories of past duration, frequency, and amount of past marijuana use, and administered a variety of performance and cognitive measures at different time points following marijuana abstinence. In chronic marijuana users, behavioral impairments may persist for up to 28 days of abstinence. Solowij et al. (2002) demonstrated that after 17 hours of abstinence, 51 adult heavy chronic marijuana users performed worse on memory and attention tasks than 33 non-using controls or 51 heavy, short-term users. Another study noted that heavy, frequent marijuana users, abstinent for at least 24 hours, performed significantly worse than the controls on verbal memory and psychomotor speed tests (Messinis et al., 2006). Additionally, after at least 1 week of abstinence, young adult frequent marijuana users, aged 18–28, showed deficits in psychomotor speed, sustained attention, and cognitive inhibition (Lisdahl and Price, 2012). Adult heavy, chronic marijuana users showed deficits on memory tests after 7 days of supervised abstinence (Pope et al., 2002). However, when these same individuals were again tested after 28 days of abstinence, they did not show significant memory deficits. The authors concluded, ''cannabis-associated cognitive deficits are reversible and related to recent cannabis exposure, rather than irreversible and related to cumulative lifetime use.'' [7] However, other researchers reported neuropsychological deficits in memory, executive functioning, psychomotor speed and manual dexterity in heavy marijuana users abstinent for 28 days (Bolla et al., 2002). Furthermore, a follow-up study of heavy marijuana users noted decision-making deficits after 25 days of supervised abstinence. (Bolla et al., 2005). However, moderate marijuana users did not show decision-making deficits after 25 days of abstinence, suggesting the amount of marijuana use may impact the duration of residual impairment.

The effects of chronic marijuana use do not seem to persist after more than 1 to 3 months of abstinence. After 3 months of abstinence, any deficits observed in IQ, immediate memory, delayed memory, and information-processing speeds following heavy marijuana use compared to pre-drug use scores were no longer apparent (Fried et al., 2005). Marijuana did not appear to have lasting effects on performance of a comprehensive neuropsychological battery when 54 monozygotic male twins (one of whom used marijuana, one of whom did not) were compared 1–20 years after cessation of marijuana use (Lyons et al., 2004). Similarly, following abstinence for a year or more, both light and heavy adult marijuana users did not show deficits on scores of verbal memory compared to non-using controls (Tait et al., 2011). According to a recent meta-analysis looking at non-acute and long-lasting effects of marijuana use on neurocognitive performance, any deficits seen within the first month following abstinence are generally not present after about 1 month of abstinence (Schreiner and Dunn, 2012).

Another aspect that may be a critical factor in the intensity and persistence of impairment resulting from chronic marijuana use is the age of first use. Individuals with a diagnosis of marijuana misuse or dependence who were seeking treatment for substance use, who initiated marijuana use before the age of 15 years, showed deficits in performance on tasks assessing sustained attention, impulse control, and general executive functioning compared to non-using controls. These deficits were not seen in individuals who initiated marijuana use after the age of 15 years (Fontes et al., 2011). Similarly, heavy, chronic marijuana users who began using marijuana before the age of 16 years had greater decrements in executive functioning tasks than heavy, chronic marijuana users who started using after the age of 16 years and non-using controls (Gruber et al., 2012). Additionally, in a prospective longitudinal birth cohort study of 1,037 individuals, marijuana dependence or chronic marijuana use was associated with a decrease in IQ and general neuropsychological performance compared to pre-marijuana exposure levels in adolescent onset users (Meier et al., 2012). The decline in adolescent-onset user's IQ persisted even after reduction or abstinence of marijuana use for at least 1 year. In contrast, the adult-onset chronic marijuana users showed no significant

[7] In this quotation the term *Cannabis* is used interchangeably for *marijuana.*

changes in IQ compared to pre-exposure levels whether they were current users or abstinent for at least 1 year (Meier et al., 2012).

In addition to the age of onset of use, some evidence suggests that the amount of marijuana used may relate to the intensity of impairments. In the above study by Gruber et al. (2012), where early-onset users had greater deficits than late-onset users, the early-onset users reported using marijuana twice as often and using three times as much marijuana per week than the late-onset users. Meier et al. (2012) showed that the deficits in IQ seen in adolescent-onset users increased with the amount of marijuana used. Moreover, when comparing scores for measures of IQ, immediate memory, delayed memory, and information-processing speeds to pre-drug-use levels, the current, heavy, chronic marijuana users showed deficits in all three measures while current, occasional marijuana users did not (Fried et al., 2005).

Behavioral Effects of Prenatal Exposure

Studies with children at different stages of development are used to examine the impact of prenatal marijuana exposure on performance in a series of cognitive tasks. However, many pregnant women who reported marijuana use were more likely to also report use of alcohol, tobacco, and cocaine (Goldschmidt et al., 2008). Thus, with potential exposure to multiple drugs, it is difficult to determine the specific impact of prenatal marijuana exposure.

Most studies assessing the behavioral effects of prenatal marijuana exposure included women who, in addition to using marijuana, also reported using alcohol and tobacco. However, some evidence suggests an association between heavy prenatal marijuana exposure and deficits in some cognitive domains. In both 4-year-old and 6-year-old children, heavy prenatal marijuana use is negatively associated with performance on tasks assessing memory, verbal reasoning, and quantitative reasoning (Fried and Watkinson, 1987; Goldschmidt et al., 2008). Additionally, heavy prenatal marijuana use is associated with deficits in measures of sustained attention in children at the ages of 6 years and 13–16 years (Fried et al., 1992; Fried, 2002). In 9- to 12-year-old children, prenatal marijuana exposure is negatively associated with executive functioning tasks that require impulse control, visual analysis, and hypothesis (Fried et al., 1998).

Association of Marijuana Use With Psychosis

This analysis evaluates only the evidence for a direct link between prior marijuana use and the subsequent development of psychosis. Thus, this discussion does not consider issues such as whether marijuana's transient effects are similar to psychotic symptoms in healthy individuals or exacerbate psychotic symptoms in individuals already diagnosed with schizophrenia.

Extensive research has been conducted to investigate whether exposure to marijuana is associated with the development of schizophrenia or other psychoses. Although many studies are small and inferential, other studies in the literature use hundreds to thousands of subjects. At present, the available data do not suggest a causative link between marijuana use and the development of psychosis (Minozzi et al., 2010). Numerous large, longitudinal studies show that subjects who used marijuana do not have a greater incidence of psychotic diagnoses compared to those who do not use marijuana (Fergusson et al., 2005; Kuepper et al., 2011; Van Os et al., 2002).

When analyzing the available evidence of the connection between psychosis and marijuana, it is critical to determine whether the subjects in the studies are patients who are already diagnosed with psychosis or individuals who demonstrate a limited number of symptoms associated with psychosis without qualifying for a diagnosis of the disorder. For example, instead of using a diagnosis of psychosis, some researchers relied on non-standard methods of representing symptoms of psychosis including ''schizophrenic cluster'' (Maremmani et al., 2004), ''subclinical psychotic symptoms'' (Van Gastel et al., 2012), ''pre-psychotic clinical high risk'' (Van der Meer et al., 2012), and symptoms related to ''psychosis vulnerability'' (Griffith-Lendering et al., 2012). These groupings do not conform to the criteria in the Diagnostic and Statistical Manual (DSM–5) or the International Classification of Diseases (ICD–10) for a diagnosis of psychosis. Thus, these groupings are not appropriate for use in evaluating marijuana's impact on the development of actual psychosis. Accordingly, this analysis includes only those studies that use subjects diagnosed with a psychotic disorder.

In the largest study evaluating the link between psychosis and drug use, 274 of the approximately 45,500 Swedish conscripts in the study population (<0.01 percent) received a diagnosis of schizophrenia within the 14-year period following military induction from 1969 to 1983 (Andreasson et al., 1987). Of the conscripts diagnosed with psychosis, 7.7 percent (21 of the 274 conscripts with psychosis) had used marijuana more than 50 times at induction, while 72 percent (197 of the 274 conscripts with psychosis) had never used marijuana. Although high marijuana use increased the relative risk for schizophrenia to 6.0, the authors note that substantial marijuana use history ''accounts for only a minority of all cases'' of psychosis (Andreasson et al., 1987). Instead, the best predictor for whether a conscript would develop psychosis was a non-psychotic psychiatric diagnosis upon induction. The authors concluded that marijuana use increased the risk for psychosis only among individuals predisposed to develop the disorder. In addition, a 35-year follow up to this study reported very similar results (Manrique-Garcia et al., 2012). In this follow up study, 354 conscripts developed schizophrenia; of these 354 conscripts, 32 used marijuana more than 50 times at induction (9 percent, an odds ratio of 6.3), while 255 had never used marijuana (72 percent).

Additionally, the conclusion that the impact of marijuana may manifest only in individuals likely to develop psychotic disorders has been shown in many other types of studies. For example, although evidence shows that marijuana use may precede the presentation of symptoms in individuals later diagnosed with psychosis (Schimmelmann et al., 2011), most reports conclude that prodromal symptoms of schizophrenia appear prior to marijuana use (Schiffman et al., 2005). Similarly, a review of the gene-environment interaction model for marijuana and psychosis concluded that some evidence supports marijuana use as a factor that may influence the development of psychosis, but only in those individuals with psychotic liability (Pelayo-Teran et al., 2012).

A similar conclusion was drawn when the prevalence of schizophrenia was modeled against marijuana use across eight birth cohorts in Australia in individuals born between the years 1940 to 1979 (Degenhardt et al., 2003). Although marijuana use increased over time in adults born during the four-decade period, there was not a corresponding increase in diagnoses for psychosis in these individuals. The authors conclude that marijuana may precipitate schizophrenic disorders only in those individuals who are vulnerable to developing psychosis. Thus, marijuana *per se* does not appear to

induce schizophrenia in the majority of individuals who have tried or continue to use marijuana. However, in individuals with a genetic vulnerability for psychosis, marijuana use may influence the development of psychosis.

Cardiovascular and Autonomic Effects

Single smoked or oral doses of delta^9-THC produce tachycardia and may increase blood pressure (Capriotti et al., 1988; Benowitz and Jones, 1975). Some evidence associates the tachycardia produced by delta^9-THC with excitation of the sympathetic and depression of the parasympathetic nervous systems (Malinowska et al., 2012). During chronic marijuana ingestion, a tolerance to tachycardia develops (Malinowska et al., 2012).

However, prolonged delta^9-THC ingestion produces bradycardia and hypotension (Benowitz and Jones, 1975). Plant-derived cannabinoids and endocannabinoids elicit hypotension and bradycardia via activation of peripherally-located CB_1 receptors (Wagner et al., 1998). Specifically, the mechanism of this effect is through presynaptic CB1 receptor-mediated inhibition of norepinephrine release from peripheral sympathetic nerve terminals, with possible additional direct vasodilation via activation of vascular cannabinoid receptors (Pacher et al., 2006). In humans, tolerance can develop to orthostatic hypotension (Jones, 2002; Sidney, 2002) possibly related to plasma volume expansion, but tolerance does not develop to the supine hypotensive effects (Benowitz and Jones, 1975). Additionally, electrocardiographic changes are minimal, even after large cumulative doses of delta^9-THC are administered. (Benowitz and Jones, 1975).

Marijuana smoking by individuals, particularly those with some degree of coronary artery or cerebrovascular disease, poses risks such as increased cardiac work, catecholamines and carboxyhemoglobin, myocardial infarction, and postural hypotension (Benowitz and Jones, 1981; Hollister, 1988; Mittleman et al., 2001; Malinowska et al., 2012).

Respiratory Effects

After acute exposure to marijuana, transient bronchodilation is the most typical respiratory effect (Gong et al., 1984). A recent 20-year longitudinal study with over 5,000 individuals collected information on the amount of marijuana use and pulmonary function data at years 0, 2, 5, 10, and 20 (Pletcher et al., 2012). Among the more than 5,000 individuals who participated in the study, almost 800 of them reported current marijuana use but not tobacco use at the time of assessment. Pletcher et al. (2012) found that the occasional use of marijuana is not associated with decreased pulmonary function. However, some preliminary evidence suggests that heavy marijuana use may be associated with negative pulmonary effects (Pletcher et al., 2012). Long-term use of marijuana can lead to chronic cough and increased sputum, as well as an increased frequency of chronic bronchitis and pharyngitis. In addition, pulmonary function tests reveal that large-airway obstruction can occur with chronic marijuana smoking, as can cellular inflammatory histopathological abnormalities in bronchial epithelium (Adams and Martin 1996; Hollister 1986).

Evidence regarding marijuana smoking leading to cancer is inconsistent, as some studies suggest a positive correlation while others do not (Lee and Hancox, 2011; Tashkin, 2005). Several lung cancer cases have been reported in young marijuana users with no tobacco smoking history or other significant risk factors (Fung et al., 1999). Marijuana use may dose-dependently interact with mutagenic sensitivity, cigarette smoking, and alcohol use to increase the risk of head and neck cancer (Zhang et al., 1999). However, in a large study with 1,650 subjects, a positive association was not found between marijuana and lung cancer (Tashkin et al., 2006). This finding remained true, regardless of the extent of marijuana use, when controlling for tobacco use and other potential confounding variables. Overall, new evidence suggests that the effects of marijuana smoking on respiratory function and carcinogenicity differ from those of tobacco smoking (Lee and Hancox, 2011).

Endocrine System

Experimental marijuana administration to humans does not consistently alter many endocrine parameters. In an early study, male subjects who experimentally received smoked marijuana showed a significant depression in luteinizing hormone and a significant increase in cortisol (Cone et al., 1986). However, two later studies showed no changes in hormones. Male subjects experimentally exposed to smoked delta^9-THC (18 mg/marijuana cigarette) or oral delta^9-THC (10 mg three times per day for 3 days and on the morning of the fourth day) showed no changes in plasma adrenocorticotropic hormone (ACTH), cortisol, prolactin, luteinizing hormone, or testosterone levels (Dax et al., 1989). Similarly, a study with 93 men and 56 women showed that chronic marijuana use did not significantly alter concentrations of testosterone, luteinizing hormone, follicle stimulating hormone, prolactin, or cortisol (Block et al., 1991). Additionally, chronic marijuana use did not affect serum levels of thyrotropin, thyroxine, and triiodothyronine (Bonnet, 2013). However, in a double-blind, placebo-controlled, randomized clinical trial of HIV-positive men, smoking marijuana dose-dependently increased plasma levels of ghrelin and leptin, and decreased plasma levels of peptide YY (Riggs et al., 2012).

The effects of marijuana on female reproductive system functionality differ between humans and animals. In monkeys, delta^9-THC administration suppressed ovulation (Asch et al., 1981) and reduced progesterone levels (Almirez et al., 1983). However, in women, smoked marijuana did not alter hormone levels or the menstrual cycle (Mendelson and Mello, 1984). Brown and Dobs (2002) suggest that the development of tolerance in humans may be the cause of the discrepancies between animal and human hormonal response to cannabinoids.

The presence of *in vitro* delta^9-THC reduces binding of the corticosteroid, dexamethasone, in hippocampal tissue from adrenalectomized rats, suggesting an interaction with the glucocorticoid receptor (Eldridge et al., 1991). Although acute delta^9-THC presence releases corticosterone, tolerance develops in rats with chronic administration (Eldridge et al., 1991).

Some studies support a possible association between frequent, long-term marijuana use and increased risk of testicular germ cell tumors (Trabert et al., 2011). On the other hand, recent data suggest that cannabinoid agonists may have therapeutic value in the treatment of prostate cancer, a type of carcinoma in which growth is stimulated by androgens. Research with prostate cancer cells shows that the mixed CB_1/CB_2 agonist, WIN–55212–2, induces apoptosis in prostate cancer cells, as well as decreases the expression of androgen receptors and prostate-specific antigens (Sarfaraz et al., 2005).

Immune System

Cannabinoids affect the immune system in many different ways. Synthetic, natural, and endogenous cannabinoids often cause different effects in a dose-dependent biphasic manner (Croxford and Yamamura, 2005; Tanasescu and Constantinescu, 2010).

Studies in humans and animals give conflicting results about cannabinoid

effects on immune functioning in subjects with compromised immune systems. Abrams et al. (2003) investigated marijuana's effect on immunological functioning in 62 AIDS patients taking protease inhibitors. Subjects received one of the following three times a day: A smoked marijuana cigarette containing 3.95 percent delta^{9}-THC, an oral tablet containing delta^{9}-THC (2.5 mg oral dronabinol), or an oral placebo. The results showed no changes in CD4+ and CD8+ cell counts, HIV RNA levels, or protease inhibitor levels between groups. Thus, the use of cannabinoids showed no short-term adverse virologic effects in individuals with compromised immune systems. However, these human data contrast with data generated in immunodeficient mice, which demonstrated that exposure to delta^{9}-THC *in vivo* suppresses immune function, increases HIV co-receptor expression, and acts as a cofactor to enhance HIV replication (Roth et al., 2005).

3. The State of Current Scientific Knowledge Regarding the Drug or Other Substance

Under the third factor, the Secretary must consider the state of current scientific knowledge regarding marijuana. Thus, this section discusses the chemistry, human pharmacokinetics, and medical uses of marijuana.

Chemistry

Marijuana is one of the common names of *Cannabis sativa* L. in the family Cannabaceae. *Cannabis* is one of the oldest cultivated crops, providing a source of fiber, food, oil, and drug. Botanists still debate whether *Cannabis* should be considered as a single (The Plant List, 2010) or three species, *i.e.,* C. *sativa,* C. *indica,* and C. *ruderalis* (Hillig, 2005). Specifically, marijuana is developed as sativa and indica cultivated varieties (strains) or various hybrids.

The petition defines marijuana as including all *Cannabis* cultivated strains. Different marijuana samples derived from various cultivated strains may have very different chemical constituents including delta^{9} -THC and other cannabinoids (Appendino et al., 2011). As a consequence, marijuana products from different strains will have different safety, biological, pharmacological, and toxicological profiles. Thus, all *Cannabis* strains cannot be considered together because of the varying chemical constituents between strains.

Marijuana contains numerous naturally occurring constituents including cannabinoids. Overall, various *Cannabis* strains contain more than 525 identified natural constituents. Among those constituents, the most important ones are the 21 (or 22) carbon terpenoids found in the plant, as well as their carboxylic acids, analogues, and transformation products, known as cannabinoids (Agurell et al., 1984, 1986; Mechoulam, 1973; Appendino et al., 2011). Thus far, more than 100 compounds classified as cannabinoids have been characterized (ElSohly and Slade, 2005; Radwan, ElSohly et al., 2009; Appendino et al. 2011).

Cannabinoids primarily exist in *Cannabis,* and published data suggest that most major cannabinoid compounds occurring naturally have been chemically identified. New and minor cannabinoids and other new compounds are continuously being characterized (Pollastro et al., 2011). So far, only two cannabinoids (cannabigerol and its corresponding acid) have been obtained from a *non-Cannabis* source. A South African *Helichrysum (H umbraculigerum)* accumulates these compounds (Appendino et al. 2011).

Among the cannabinoids found in marijuana, delta^{9}-THC (alternate name delta^{1}-THC) and delta-8-tetrahydrocannibinol (delta^{8}-THC, alternate name delta^{6}-THC) produce marijuana's characteristic psychoactive effects. Because delta^{9}-THC is more abundant than delta^{8}-THC, marijuana's psychoactivity is largely attributed to the former. Only a few varieties of marijuana analyzed contain delta^{8}-THC at significant amounts (Hively et al., 1966). Delta^{9}-THC is an optically active resinous substance, insoluble in water, and extremely lipid soluble. Chemically, delta^{9}-THC is (6aR-trans)-6a,7,8,10a-tetrahydro-6,6,9-trimethyl-3-pentyl-6H-dibenzo-[b,d]pyran-l-ol, or (–)-delta^{9}-(trans)-tetrahydrocannabinol. The (–)-trans isomer of delta^{9}-THC is pharmacologically 6–100 times more potent than the (+)-trans isomer (Dewey et al., 1984).

Other cannabinoids present in marijuana include CBD, CBC, and CBN. CBD, a major cannabinoid of marijuana, is insoluble in water and lipid-soluble. Chemically, CBD is 2-[(1R,6R)-3-methyl-6-prop-1-en-2-ylcyclohex-2-en-1-yl]-5-pentylbenzene-1,3-diol. CBD does not have cannabinol-like psychoactivity (Adams and Martin, 1996; Agurell et al., 1984, 1986; Hollister, 1986). CBC is another major cannabinoid in marijuana. Chemically, CBC is 2-methyl-2-(4-methylpent-3-enyl)-7-pentyl-5-chromenol. CBN, a major metabolite of delta^{9}-THC, is also a minor naturally-occurring cannabinoid with weak psychoactivity. Chemically, CBN is 6,6,9-trimethyl-3-pentyl-benzo[c]chromen-1-ol.

Different marijuana samples derived from various cultivated strains may differ in chemical constituents including delta^{9}-THC and other cannabinoids (Appendino et al. 2011). As a consequence, marijuana products from different strains may have different safety, biological, pharmacological, and toxicological profiles. In addition to differences between cultivated strains, the concentration of delta^{9}-THC and other cannabinoids in marijuana may vary with growing conditions and processing after harvest. In addition to genetic differences among *Cannabis* species, the plant parts collected—for example, flowers, leaves, and stems—can influence marijuana's potency, quality, and purity (Adams and Martin, 1996; Agurell et al., 1984; Mechoulam, 1973). All these variations produce marijuana with potencies, as indicated by cannabinoid content, on average from as low as 1–2 percent to as high as 17 percent.

Overall, these variations in the concentrations of cannabinoids and other chemical constituents in marijuana complicate the interpretation of clinical data using marijuana. The lack of consistent concentrations of delta^{9}-THC and other substances in marijuana from diverse sources makes interpreting the effect of different marijuana constituents difficult. In addition to different cannabinoid concentrations having different pharmacological and toxicological ·profiles, the non-cannabinoid components in marijuana, such as other terpenoids and flavonoids, might also contribute to the overall pharmacological and toxicological profiles of various marijuana strains and products derived from those strains.

The term marijuana is often used to refer to a mixture of the dried flowering tops and leaves from *Cannabis.* Marijuana in this limiting definition is one of three major derivatives sold as separate illicit products, which also include hashish and hash oil. According to the DEA, *Cannabis saliva* is the primary species of *Cannabis* currently marketed illegally in the United States.

Marijuana can vary in cannabinoid content and potency (Agurell et al., 1984, 1986; Mechoulam 1973, Cascini et al., 2012). In the usual mixture of leaves and stems distributed as marijuana, the concentration of delta^{9}-THC averages over 12 percent by weight. However, specially grown and selected marijuana can contain 15 percent or greater delta^{9}-THC (Appendino et al. 2011). Thus, a 1-gram marijuana cigarette might contain

delta9-THC in a range from as little as 3 milligrams to as much as 150 milligrams or more. Additionally, a recent systematic review and meta-analysis found that marijuana's delta9-THC content has increased significantly from 1979–2009 (Cascini et al., 2012). In addition to smoking marijuana, individuals ingest marijuana through food made with butter or oil infused with marijuana and its extracts. These marijuana butters are generally made by adding marijuana to butter and heating it. The resultant butter is then used to cook a variety of foods. There are no published studies measuring the concentrations of cannabinoids in these marijuana food products.

Hashish consists of the dried and compressed cannabinoid-rich resinous material of *Cannabis* and comes in a variety of forms (*e.g.* balls and cakes). Individuals may break off pieces, place it into a pipe and smoke it. DEA reports that cannabinoid content in hashish averages six percent (DEA, 2005). With the development and cultivation of more high potency *Cannabis* strains, the average cannabinoid content in hashish will likely increase.

Hash oil is produced by solvent extraction of the cannabinoids from plant material. The extract's color and odor vary, depending on the solvent type used. Hash oil is a viscous brown- or amber-colored liquid containing approximately 50 percent cannabinoids. One or two drops of the liquid placed on a cigarette purportedly produce the equivalent of a single· marijuana cigarette (DEA, 2005).

In conclusion, marijuana has hundreds of cultivars containing variable concentrations of delta9-THC, cannabinoids, and other compounds. Thus, marijuana is not a single chemical with a consistent and reproducible chemical profile or predictable and consistent clinical effects. A guidance for industry, entitled *Botanical Drug Products,*[8] provides information on the approval of botanical drug products. To investigate marijuana for medical use in a manner acceptable as support for marketing approval under an NDA, clinical studies under an IND of consistent batches of a particular marijuana product for particular disease indications should be conducted. In addition, information and data regarding the marijuana product's chemistry, manufacturing and control, pharmacology, and animal toxicology data, among others must be provided and meet the requirements for new drug approval (See 21 CFR 314.50).

Human Pharmacokinetics

Marijuana can be taken in a variety of formulations by multiple routes of administration. Individuals smoke marijuana as a cigarette, weighing between 0.5 and 1.0 gram, or in a pipe. Additionally, individuals take marijuana orally in foods or as an extract in ethanol or other solvents. More recently, access to vaporizers provides another means for abusers to inhale marijuana,

The absorption, metabolism, and pharmacokinetic profile of delta9-THC, cannabinoids, and drug products containing delta9-THC vary with route of administratfon and formulation (Adams and Martin, 1996; Agurell et al., 1984, 1986).

Pharmacokinetics of Smoked Administration of Cannabinoids

Characterization of the pharmacokinetics of delta9-THC and other cannabinoids from smoked marijuana is difficult because a subject's smoking behavior during an experiment varies (Agurell et al., 1986; Heming et al., 1986; Huestis et al., 1992a). Each puff delivers a discrete dose of delta9-THC. An experienced marijuana smoker can titrate and regulate the dose to obtain the desired acute psychological effects and minimize undesired effects. For example, under naturalistic conditions, users hold marijuana smoke in their lungs for an extended period of time which causes prolonged absorption and increases psychoactive effects. The effect of experience in the psychological response may explain why delta9-THC venous blood levels correlate poorly with intensity of effects and intoxication level (Agurell et al. 1986; Barnett et al. 1985; Huestis et al., 1992a). Puff and inhalation volumes should be recorded in studies as the concentration (dose) of cannabinoids administered can vary at different stages of smoking.

Smoked marijuana results in absorption of delta9-THC in the form of an aerosol within seconds. Psychoactive effects occur immediately following absorption, with mental and behavioral effects measurable for up to 6 hours (Grotenhermen, 2003; Hollister 1986, 1988). Delta9-THC is delivered to the brain rapidly and efficiently as expected of a very lipid soluble drug.

The bioavailability of the delta9 -THC, from marijuana in a cigarette or pipe, can range from 1 to 24 percent with the fraction absorbed rarely exceeding 10 to 20 percent (Agurell et al.,1986; Hollister, 1988). The relatively low and variable bioavailability results from significant loss of delta9-THC in side-stream smoke, variation in individual smoking behaviors, cannabinoid pyrolysis, incomplete absorption of inhaled smoke, and metabolism in the lungs. An individual's experience and technique with smoking marijuana also determines the dose absorbed (Heming et al., 1986; Johansson et al., 1989). After smoking, delta9-THC venous levels decline precipitously within minutes, and continue to go down to about 5 to 10 percent of the peak level within an hour (Agurell et al., 1986, Huestis et al.,1992a, 1992b).

Pharmacokinetics for Oral Administration of Cannabinoids

After oral administration of delta9-THC or marijuana, the onset of effects starts within 30 to 90 minutes, reaches its peak after 2 to 3 hours and then remains for 4 to 12 hours (Grotenhermen, 2003; Adams and Martin, 1996; Agurell et al., 1984, 1986). Due to the delay in onset of effects, users have difficulty in titrating oral delta9-THC doses compared to smoking marijuana. Oral bioavailability of delta9-THC, whether pure or in marijuana, is low and extremely variable, ranging between 5 and 20 percent (Agurell et al., 1984, 1986). Following oral administration of radioactive-labeled delta9-THC, delta9-THC plasma levels are low relative to plasma levels after smoking or intravenous administration. Inter- and intra-subject variability occurs even with repeated dosing under controlled conditions. The low and variable oral bioavailability of delta9-THC is a consequence of its first-pass hepatic elimination from blood and erratic absorption from stomach and bowel.

Cannabinoid Metabolism and Excretion

Cannabinoid metabolism is complex. Delta9-THC is metabolized via microsomal hydroxylation to both active and inactive metabolites (Lemberger et al., 1970, 1972a, 1972b; Agurell et al., 1986; Hollister, 1988). The primary active metabolite of delta9-THC following oral ingestion is 11-hydroxy-delta9-THC. This metabolite is approximately equipotent to delta9-THC in producing marijuana-like subjective effects (Agurell et al., 1986, Lemberger and Rubin, 1975). After oral administration, metabolite levels may exceed that of delta9-THC and thus contribute greatly to the pharmacological effects of oral delta9-THC or marijuana.

Plasma clearance of delta9-THC approximates hepatic blood flow at about 950 ml/min or greater. The rapid disappearance of delta9-THC from blood

[8] This guidance is available on the Internet at *http://www.fda.gov/Drugs/default.htm* under Guidance (Drugs).

is largely due to redistribution to other tissues in the body, rather than to metabolism (Agurell et al., 1984, 1986). Metabolism in most tissues is relatively slow or absent. Slow release of delta[9]-THC and other cannabinoids from tissues and subsequent metabolism results in a long elimination half-life. The terminal half-life of delta[9]-THC ranges from approximately 20 hours to as long as 10 to13 days, though reported estimates vary as expected with any slowly cleared substance and the use of assays with variable sensitivities (Hunt and Jones, 1980). Lemberger et al. (1970) determined the half-life of delta[9]-THC to range from 23 to 28 hours in heavy marijuana users to 60 to 70 hours in naive users. In addition to 11-hydroxy-delta[9]-THC, some inactive carboxy metabolites have terminal half-lives of 50 hours to 6 days or more. The latter substances serve as long-term markers in urine tests for earlier marijuana use.

The majority of the absorbed delta[9]-THC dose is eliminated in feces, and about 33 percent in urine. Delta[9]-THC enters enterohepatic circulation and undergoes hydroxylation and oxidation to 11-nor-9-carboxy-delta[9]-THC. The glucuronide is excreted as the major urine metabolite along with about 18 non-conjugated metabolites. Frequent and infrequent marijuana users metabolize delta[9]-THC similarly (Agurell et al., 1986).

Status of Research Into the Medical Uses for Marijuana

State-level public initiatives, including laws and referenda in support of the medical use of marijuana, have generated interest in the medical community and the need for high quality clinical investigation as well as comprehensive safety and effectiveness data. In order to address the need for high quality clinical investigations, the state of California established the Center for Medicinal Cannabis Research (CMCR, *www.cmcr.ucsd.edu*) in 2000 ''in response to scientific evidence for therapeutic possibilities of cannabis [9] and local legislative initiatives in favor of compassionate use'' (Grant, 2005). State legislation establishing the CMCR called for high quality medical research that would ''enhance understanding of the efficacy and adverse effects of marijuana as a pharmacological agent,'' but stressed the project ''should not be construed as encouraging or sanctioning the social or recreational use of marijuana.'' The CMCR funded many of the published studies on marijuana's potential use for treating multiple sclerosis, neuropathic pain, appetite suppression and cachexia. However, aside from the data produced by CMCR, no state-level medical marijuana laws have produced scientific data on marijuana's safety and effectiveness.

FDA approves medical use of a drug following a submission and review of an NDA or BLA. The FDA has not approved any drug product containing marijuana for marketing. Even so, results of small clinical exploratory studies have been published in the current medical literature. Many studies describe human research with marijuana in the United States under FDA-regulated IND applications.

However, FDA approval of an NDA is not the only means through which a drug can have a currently accepted medical use in treatment in the United States. In general, a drug may have a ''currently accepted medical use'' in treatment in the United States if the drug meets a five-part test. Established case law (Alliance for Cannabis Therapeutics v. DEA, 15 F.3d 1131, 1135 (D.C. Cir. 1994)) upheld the Administrator of DEA's application of the five-part test to determine whether a drug has a ''currently accepted medical use.'' The following describes the five elements that characterize ''currently accepted medical use'' for a drug: [10]

i. the drug's chemistry must be known and reproducible

''The substance's chemistry must be scientifically established to permit it to be reproduced into dosages which can be standardized. The listing of the substance in a current edition of one of the official compendia, as defined by section 201 G) of the Food, Drug and Cosmetic Act, 21 U.S.C. 321G), is sufficient to meet this requirement.''

ii. there must be adequate safety studies

''There must be adequate pharmacological and toxicological studies, done by all methods reasonably applicable, on the basis of which it could fairly and responsibly be concluded, by experts qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, that the substance is safe for treating a specific, recognized disorder.''

iii. there must be adequate and well-controlled studies proving efficacy

''There must be adequate, well-controlled, well-designed, well-conducted, and well-documented studies, including clinical investigations, by experts qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, on the basis of which it could be fairly and responsibly concluded by such experts that the substance will have the intended effect in treating a specific, recognized disorder.''

iv. the drug must be accepted by qualified experts

''The drug has a New Drug Application (NDA) approved by the Food and Drug Administration, pursuant to the Food, Drug and Cosmetic Act, 21 U.S.C. 355. Or, a consensus of the national community of experts, qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, accepts the safety and effectiveness of the substance for use in treating a specific, recognized disorder. A material conflict of opinion among experts precludes a finding of consensus.'' and

v. the scientific evidence must be widely available

''In the absence of NDA approval, information concerning the chemistry, pharmacology, toxicology, and effectiveness of the substance must be reported, published, or otherwise widely available, in sufficient detail to permit experts, qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, to fairly and responsibly conclude the substance is safe and effective for use in treating a specific, recognized disorder.''

Marijuana does not meet any of the five elements necessary for a drug to have a ''currently accepted medical use.''

Firstly, the chemistry of marijuana, as defined in the petition, is not reproducible in terms of creating a standardized dose. The petition defines marijuana as including all *Cannabis* cultivated strains. Different marijuana samples derived from various cultivated strains may have very different chemical constituents including delta9–THC and other cannabinoids (Appendino et al., 2011). As a consequence, marijuana products from different strains will have different safety, biological, pharmacological, and toxicological profiles. Thus, when considering all *Cannabis* strains together, because of the varying chemical constituents, reproducing consistent standardized doses is not possible. Additionally, smoking marijuana currently has not been shown to allow delivery of consistent and reproducible doses. However, if a specific *Cannabis* strain is grown and processed under strictly controlled conditions, the plant chemistry may be kept consistent enough to produce reproducible and standardized doses.

[9] In this quotation the term cannabis is interchangeable with marijuana.

[10] 57 FR I 0499, 10504–06 (March 26, 1992).

As to the second and third criteria; there are neither adequate safety studies nor adequate and well-controlled studies proving marijuana's efficacy. To support the petitioners' assertion that marijuana has accepted medical use, the petitioners cite the American Medical Association's (AMA) 2009 report entitled ''Use of Cannabis for Medicinal Purposes.'' The petitioners claim the AMA report is evidence the AMA accepts marijuana's safety and efficacy. However, the 2009 AMA report clarifies that the report ''should not be viewed as an endorsement of state-based medical cannabis programs, the legalization of marijuana, or that scientific evidence on the therapeutic use of cannabis meets the same and current standards for a prescription drug product.'' [11]

Currently, no published studies conducted with marijuana meet the criteria of an adequate and well-controlled efficacy study. The criteria for an adequate and well-controlled study for purposes of determining the safety and efficacy of a human drug are defined under the Code of Federal Regulations (CFR) in 21 CFR 314.126. In order to assess this element, FDA conducted a review of clinical studies published and available in the public domain before February, 2013. Studies were identified through a search of PubMed [12] for articles published from inception to February 2013, for randomized controlled trials using marijuana to assess marijuana's efficacy in any therapeutic indication. Additionally, the review included studies identified through a search of bibliographic references in relevant systematic reviews and identified studies presenting original research in any language. Selected studies needed to be placebo-controlled and double-blinded. Additionally, studies needed to encompass administered marijuana plant material. There was no requirement for any specific route of administration, nor any age limits on study subjects. Studies were excluded that used placebo marijuana supplemented by the addition of specific amounts of THC or other cannabinoids. Additionally, studies administering marijuana plant extracts were excluded.

The PubMed search yielded a total of 566 abstracts of scientific articles. Of these abstracts, a full-text review was conducted with 85 papers to assess eligibility. Of the studies identified through the search of the references and the 566 abstracts from the PubMed search, only 11 studies met all the criteria for selection (Abrams et al., 2007; Corey-Bloom et al., 2012; Crawford and Merritt, 1979; Ellis et al., 2009; Haney et al., 2005; Haney et al., 2007; Merritt et al., 1980; Tashkin et al., 1974; Ware et al., 2010; Wilsey et al., 2008; Wilsey et al., 2013). These 11 studies were published between 197 4 and 2013. Ten of these studies were conducted in the United States and one study was conducted in Canada. The identified studies examine the effects of smoked and vaporized marijuana for the indications of chronic neuropathic pain, spasticity related to Multiple Sclerosis (MS), appetite stimulation in human immunodeficiency virus (HIV) patients, glaucoma, and asthma. All studies used adult subjects.

The 11 identified studies were individually evaluated to determine if they successfully meet accepted scientific standards. Specifically, they were evaluated on study design including subject selection criteria, sample size, blinding techniques, dosing paradigms, outcome measures, and the statistical analysis of the results. The analysis relied on published studies, thus information available about protocols, procedures, and results were limited to documents published and widely available in the public domain. The review found that all 11 studies that examined effects of inhaled marijuana do not currently prove efficacy of marijuana in any therapeutic indication based on a number of limitations in their study design; however, they may be considered proof of concept studies. Proof of concept studies provide preliminary evidence on a proposed hypothesis involving a drug's effect. For drugs under development, the effect often relates to a short-term clinical outcome being investigated. Proof of concept studies often serve as the link between preclinical studies and dose ranging clinical studies. Thus, proof of concept studies generally are not sufficient to prove efficacy of a drug because they provide only preliminary information about the effects of a drug.

In addition to the lack of published adequate and well-controlled efficacy studies proving efficacy, the criteria for adequate safety studies has also not been met. Importantly, in its discussion of the five-part test used to determine whether a drug has a ''currently accepted medical use,'' DEA said, ''No drug can be considered safe in the abstract. Safety has meaning only when judged against the intended use of the drug, its known effectiveness, its known and potential risks, the severity of the illness to be treated, and the availability of alternative remedies'' (57 FR 10504). When determining whether a drug product is safe and effective for any indication, FDA performs an extensive risk-benefit analysis to determine whether the risks posed by the drug product's side effects are outweighed by the drug product's potential benefits for a particular indication. Thus, contrary to the petitioner's assertion that marijuana has accepted safety, in the absence of an accepted therapeutic indication which can be weighed against marijuana's risks, marijuana does not satisfy the element for having adequate safety studies such that experts may conclude that it is safe for treating a specific, recognized disorder.

The fourth of the five elements for determining ''currently accepted medical use'' requires that the national community of experts, qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, accepts the safety and effectiveness of the substance for use in treating a specific, recognized disorder. A material conflict of opinion among experts precludes a finding of consensus. Medical practitioners who are not experts in evaluating drugs are not qualified to determine whether a drug is generally recognized as safe and effective or meets NDA requirements (57 FR 10499–10505).

There is no evidence that there is a consensus among qualified experts that marijuana is safe and effective for use in treating a specific, recognized disorder. As discussed above, there are not adequate scientific studies that show marijuana is safe and effective in treating a specific, recognized disorder. In addition, there is no evidence that a consensus of qualified experts have accepted the safety and effectiveness of marijuana for use in treating a specific, recognized disorder. Although medical practitioners are not qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, we also note that the AMA's report, entitled ''Use of Cannabis for Medicinal Purposes,'' does not accept that marijuana currently has accepted medical use. Furthermore, based on the above definition of a ''qualified expert'', who is an individual qualified by scientific training and experience to evaluate the safety and effectiveness of a drug, state-level medical marijuana laws do not provide evidence of a consensus among qualified experts that marijuana is safe and effective for use in treating a specific, recognized disorder.

[11] In this quotation the term cannabis is used interchangeably for marijuana.

[12] The following search strategy was used, ''(cannabis OR marijuana) AND (therapeutic use OR therapy) AND (RCT OR randomized controlled trial OR ''systematic review'' OR clinical trial OR clinical trials) NOT (''marijuana abuse''[Mesh] OR addictive behavior OR substance related disorders).''

As to the fifth part of the test, which requires that information concerning the chemistry, pharmacology, toxicology, and effectiveness of marijuana to be reported in sufficient detail, the scientific evidence regarding all of these aspects is not available in sufficient detail to allow adequate scientific scrutiny. Specifically, the scientific evidence regarding marijuana's chemistry in terms of a specific *Cannabis* strain that could produce standardized and reproducible doses is not currently available.

Alternately, a drug can be considered to have a ''currently accepted medical use with severe restrictions'' (21 U.S.C. 812(b)(2)(B)), as allowed under the stipulations for a Schedule II drug. Yet, as stated above, currently marijuana does not have any accepted medical use, even under conditions where its use is severely restricted.

In conclusion, to date, research on marijuana's medical use has not progressed to the point where marijuana is considered to have a ''currently accepted medical use'' or a ''currently accepted medical use with severe restrictions.''

4. Its History and Current Pattern of Abuse

Under the fourth factor, the Secretary must consider the history and current pattern of marijuana abuse. A variety of sources provide data necessary to assess abuse patterns and trends of marijuana. The data indicators of marijuana use include the NSDUH, MTF, DAWN, and TEDS. The following briefly describes each data source, and summarizes the data from each source.

National Survey on Drug Use and Health (NSDUH) [13]

According to 2012 NSDUH [14] data, the most recent year with complete data, the use of illicit drugs, including marijuana, is increasing. The 2012 NSDUH estimates that 23.9 million individuals over 12 years of age (9.2 percent of the U.S. population) currently use illicit drugs, which is an increase of 4.8 million individuals from 2004 when 19.1 million individuals (7.9 percent of the U.S. population) were current illicit drug users. NSDUH reports marijuana as the most commonly used illicit drug, with 18.9 million individuals (7.3 percent of the U.S. population) currently using marijuana in 2012. This represents an increase of 4.3 million individuals from 2004, when 14.6 million individuals (6.1 percent of the U.S. population) were current marijuana users.

The majority of individuals who try marijuana at least once in their lifetime do not currently use marijuana. The 2012 NSDUH estimates that 111.2 million individuals (42.8 percent of the U.S. population) have used marijuana at least once in their lifetime. Based on this estimate and the estimate for the number of individuals currently using marijuana, approximately 16.9 percent of those who have tried marijuana at least once in their lifetime currently use marijuana; conversely, 83.1 percent do not currently use marijuana. In terms of the frequency of marijuana use, an estimated 40.3 percent of individuals who used marijuana in the past month used marijuana on 20 or more days within the past month. This amount corresponds to an estimated 7.6 million individuals who used marijuana on a daily or almost daily basis.

Some characteristics of marijuana users are related to age, gender, and criminal justice system involvement. In observing use among different age cohorts, the majority of individuals who currently use marijuana are shown to be between the ages of 18–25, with 18.7 percent of this age group currently using marijuana. In the 26 and older age group, 5.3 percent of individuals currently use marijuana. Additionally, in individuals aged 12 years and older, males reported more current marijuana use than females.

NSDUH includes a series of questions aimed at assessing the prevalence of dependence and abuse of different substances in the past 12 months.[15] In 2012, marijuana was the most common illicit drug reported by individuals with past year dependence or abuse. An estimated 4.3 million individuals meet the NSDUH criteria for marijuana dependence or abuse in 2012. The estimated rates and number of individuals with marijuana dependence or abuse has remained similar from 2002 to 2012. In addition to data on dependence and abuse, NSDUH includes questions aimed at assessing treatment for a substance use problem.[16] In 2012, an estimated 957,000 persons received treatment for marijuana use during their most recent treatment in the year prior to the survey.

Monitoring the Future (MTF) [17]

According to MTF,[18] rates of marijuana and illicit drug use declined for all three grades from 2005 through 2007. However, starting around 2008, rates of annual use of illicit drugs and marijuana increased through 2013 for all three grades. Marijuana remained the most widely used illicit drug during all time periods. The prevalence of annual and past month marijuana use in 10th and 12th graders in 2013 is greater than in 2005. Table 1 lists the lifetime, annual, and monthly prevalence rates of various drugs for 8th, 10th, and 12th graders in 2013.

[13] NSDUH provides national estimates of the prevalence and incidence of illicit drug, alcohol and tobacco use in the United States. NSDUH is an annual study conducted by SAMHSA. Prior to 2002, the database was known as the National Household Survey on Drug Abuse (NHSDA). NSDUH utilizes a nationally representative sample of United States civilian, non-institutionalized population aged 12 years and older. The survey excludes homeless people who do not use shelters, active military personnel, and residents of institutional group quarters such as jails and hospitals. The survey identifies whether an individual used a drug within a specific time period, but does not identify the amount of the drug used on each occasion. NSDUH defines ''current use'' as having used the substance within the month prior to the study.

[14] 2013; *http://www.samhsa.gov/data/NSDUH.aspx*.

[15] ''These questions are used to classify persons as dependent on or abusing specific substances based on criteria specified in the *Diagnostic and Statistical Manual of Mental Disorder,* 4th edition (DSM–IV). The questions related to dependence ask about health and emotional problems associated with substance use, unsuccessful attempts to cut down on use, tolerance, withdrawal, reducing other activities to use substances, spending a lot time engaging in activities related to substance use, or using the substance in greater quantities or for longer time than intended. The questions on abuse ask about problems at work, home, and school; problems with family or friends; physical danger; and trouble with the law due to substance use. Dependence is considered to be a more severe substance use problem than abuse because it involves the psychological and physiological effects of tolerance and withdrawal.'' (NSDUH, 2013).

[16] ''Estimates . . . refer to treatment received for illicit drug or alcohol use, or for medical problems associated with the use of illicit drugs or alcohol. This includes treatment received in the past year at any location, such as a hospital (inpatient), rehabilitation facility (outpatient or inpatient), mental health center, emergency room, private doctor's office, prison or jail, or a self-help group, such as Alcoholics Anonymous or Narcotics Anonymous.'' (NSDUH, 2013).

[17] Monitoring the Future is a national survey that tracks drug use prevalence and trends among adolescents in the United States. MTF is reported annually by the Institute for Social Research at the University of Michigan under a grant from NIDA. Every spring, MTF surveys 8th, 10th, and 12th graders in randomly selected U.S. schools. MTF has been conducted since 1975 for 12th graders and since 1991 for 8th and 10th graders. The MTF survey presents data in terms of prevalence among the sample interviewed. For 2012, the latest year with complete data, the sample sizes were 15,200—8th graders; 13,300—10th graders; and 13,200—12th graders. In all, a total of about 41,700 students of 389 schools participated in the 2013 MTF.

[18] 2013; *http://www.monitoringthefuture.org/index.html*.

Table 1: Trends in lifetime, annual, and monthly prevalence of use of various drugs for eighth, tenth, and twelfth graders. Percentages represent students in survey responding that they had used a drug at least once in their lifetime, in the past year, or in the past 30 days.

	Lifetime			Annual			30-Day		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
Any illicit Drug (a)									
8th Grade	20.1	18.5	20.3	14.7	13.4	14.9	8.5	7.7	8.5
10th Grade	37.7	36.8	38.8	31.1	30.1	31.8	19.2	18.6	19.4
12th Grade	49.9	49.1	50.4	40.0	39.7	40.3	25.2	25.2	25.5
Marijuana/Hashish									
8th Grade	16.4	15.2	16.5	12.5	11.4	12.7	7.2	6.5	7.0
10th Grade	34.5	33.8	35.8	28.8	28.0	29.8	17.6	17.0	18.0
12th Grade	45.5	45.2	45.5	36.4	36.4	36.4	22.6	22.9	22.7

SOURCE: The Monitoring the Future Study, the University of Michigan
a. For 12th graders only: "any illicit drug" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin; or any narcotics use other than heroin, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor's orders. For 8th and 10th graders only: the use of narcotics other than heroin and sedatives (barbiturates) was excluded.

Drug Abuse Warning Network (DAWN) [19]

Importantly, many factors can influence the estimates of ED visits, including trends in overall use of a substance as well as trends in the reasons for ED usage. For instance, some drug users may visit EDs for life-threatening issues while others may visit to seek care for detoxification because they needed certification before entering treatment. Additionally, DAWN data do not distinguish the drug responsible for the ED visit from other drugs that may have been used concomitantly. As stated in a DAWN report, ''Since marijuana/hashish is frequently present in combination with other drugs, the reason for the ED visit may be more relevant to the other drug(s) involved in the episode.''

For 2011, DAWN [20] estimates a total of 5,067,374 (95 percent confidence interval [CI]: 4,616,753 to 5,517,995) drug-related ED visits from the entire United States. Of these, approximately 2,462,948 ([CI]: 2,112,868 to 2,813,028) visits involved drug misuse or abuse.

During the same period, DAWN estimates that 1,252,500 (CI: 976,169 to 1,528,831) drug related ED visits involved illicit drugs. Thus, over half of all drug-related ED visits associated with drug misuse or abuse involved an illicit drug. For ED visits involving illicit drugs, 56.3 percent involved multiple drugs while 43.7 percent involved a single drug.

Marijuana was involved in 455,668 ED visits (CI: 370,995 to 540,340), while cocaine was involved in 505,224 (CI: 324,262 to 686,185) ED visits, heroin was involved in 258,482 (CI: 205,046 to 311,918) ED visits and stimulants including amphetamine and methamphetamine were involved in 159,840 (CI: 100,199 to 219,481) ED visits. Other illicit drugs, such as PCP, MDMA, GHB and LSD were much less frequently associated with ED visits. The number of ED visits involving marijuana has increased by 62 percent since 2004.

Marijuana-related ED visits were most frequent among young adults and minors. Individuals under the age of 18 accounted for 13.2 percent of these marijuana-related visits, whereas this age group accounted for approximately 1.2 percent of ED visits involving cocaine, and less than 1 percent of ED visits involving heroin. However, the age group with the most marijuana-related ED visits was between 25 and 29 years old. Yet, because populations differ between age groups, a standardized measure for population size is useful to make comparisons. For marijuana, the rates of ED visits per 100,000 population were highest for patients aged 18 to 20 (443.8 ED visits per 100,000) and for patients aged 21 to 24 (446.9 ED visits per 100,000).

While DAWN provides estimates for ED visits associated with the use of medical marijuana for 2009–2011, the validity of these estimates is questionable. Because the drug is not approved by the FDA, reporting medical marijuana may be inconsistent and reliant on a number of factors including whether the patient self-reports the marijuana use as medicinal, how the treating health care provider records the marijuana use, and lastly how the SAMHSA coder interprets the report. All of these aspects will vary greatly between states with medical marijuana laws and states without medical marijuana laws. Thus, even though estimates are reported for medical marijuana related ED visits, medical marijuana estimates cannot be assessed with any acceptable accuracy at this time, as FDA has not approved marijuana treatment of any medical condition. These data show the difficulty in evaluating abuse of a product that is not currently approved by FDA, but authorized for medical use, albeit inconsistently, at the state level. Thus, we believe the likelihood of the treating health care provider or SAMHSA coder attributing the ED visit to ''medical marijuana'' versus ''marijuana'' to be very low. Overall, the available data are inadequate to

[19] DAWN is a national probability survey of the U.S. hospitals with ED designed to obtain information on drug related ED visits. DAWN is sponsored by SAMHSA. The DAWN system provides information on the health consequences of drug use in the United States, as manifested by drug-related visits to ED. The ED data from a representative sample of hospital emergency departments are weighted to produce national estimates. Importantly, DAWN data and estimates, starting in 2004, are not comparable to those for prior years because of vast changes in the methodology used to collect the data. Furthermore, estimates for 2004 are the first to be based on a redesigned sample of hospitals, which ended in 2011.

[20] 2011; *http://www.samhsa.gov/data/dawn.aspx.*

characterize its abuse at the community level.

Treatment Episode Data Set (TEDS) [21]

Primary marijuana abuse accounted for 18.1 percent of all 2011 TEDS [22] admissions. Individuals admitted for primary marijuana abuse were nearly three-quarters (73.4 percent) male, and almost half (45.2 percent) were white. The average age at admission was 24 years old, and 31.1 percent of individuals admitted for primary marijuana abuse were under the age of 18. The reported frequency of marijuana use was 24.3 percent reporting daily use. Almost all (96.8 percent) primary marijuana users utilized the substance by smoking. Additionally, 92.9 percent reported using marijuana for the first time before the age of 18.

An important aspect of TEDS admission data for marijuana is of the referral source for treatment. Specifically, primary marijuana admissions were less likely than all other admissions to either be self-referred or referred by an individual for treatment. Instead, the criminal justice system referred more than half (51.6 percent) of primary marijuana admissions.

Since 2003, the percent of admissions for primary marijuana abuse increased from 15.5 percent of all admissions in 2003 to 18.l percent in 2011. This increase is less than the increase seen for admissions for primary opioids other than heroin, which increased from 2.8 percent in 2003 to 7.3 percent in 2011. In contrast, the admissions for primary cocaine abuse declined from 9.8 percent in 2003 to 2.0 percent in 2011.

[21] The TEDS system is part of SAMHSA's Drug and Alcohol Services Information System (Office of Applied Science, SAMHSA). The TEDS report presents information on the demographic and substance use characteristics of the 1.8 million annual admissions to treatment for alcohol and drug abuse in facilities that report to individual state administrative data systems. Specifically, TEDS includes facilities licensed or certified by the states to provide substance abuse treatment and is required by the states to provide TEDS client-level data. Facilities that report TEDS data are those receiving State alcohol and drug agency funds for the provision of alcohol and drug treatment services. Since TEDS is based only on reports from these facilities, TEDS data do not represent the total national demand for substance abuse treatment or the prevalence of substance abuse in the general population. The primary goal for TEDS is to monitor the characteristics of treatment episodes for substance abusers. Importantly, TEDS is an admissions-based system, where admittance to treatment is counted as an anonymous tally. For instance, a given individual who is admitted to treatment twice within a given year would be counted as two admissions. The most recent year with complete data is 2011.

[22] 2011; *http://www.samhsa.gov/data/DASIS.aspx?qr=t#TEDS.*

5. The Scope, Duration, and Significance of Abuse

Under the fifth factor, the Secretary must consider the scope, duration, and significance of marijuana abuse. According to 2012 data from NSDUH and 2013 data from MTF, marijuana remains the most extensively used illegal drug in the United States, with 42.8 percent of U.S. individuals over age 12 (111.2 million) and 45.5 percent of 12th graders having used marijuana at least once in their lifetime. Although the majority of individuals over age 12 (83.1 percent) who have ever used marijuana in their lifetime do not use the drug monthly, 18.9 million individuals (7.3 percent of the U.S. population) report that they used marijuana within the past 30 days. An examination of use among various age cohorts through NSDUH demonstrates that monthly use occurs primarily among college-aged individuals, with use dropping off sharply after age 25. Additionally, NSDUH data show the number of individuals reporting past-month use of marijuana has increased by 4.3 million individuals since 2004. Data from MTF shows that annual prevalence of marijuana use declined for all three grades from 2005 through 2007, then began to rise through 2013. Additionally, in 2013, 1.1 percent of 8th graders, 4.0 percent of 10th graders, and 6.5 percent of 12th graders reported daily use of marijuana, defined as use on 20 or more days within the past 30 days.

The 2011 DAWN data show that marijuana use was mentioned in 455,668 ED visits, which amounts to approximately 36.4 percent of all illicit drug-related ED visits.[23]

TEDS data for 2011 show that 18.1 percent of all admissions were for primary marijuana abuse.[24] Between 2003 and 2011, there was a 2.6 percent increase in the number of TEDS admissions for primary marijuana use.

[23] Many factors can influence the estimates of ED visits, including trends in the reasons for ED usage. For instance, some drug users may visit EDs for life-threatening issues while others may visit to seek care for detoxification because they needed certification before entering treatment. Additionally, DAWN data do not distinguish the drug responsible for the ED visit from other drugs that may have been used concomitantly. As stated in a DAWN report, ''Since marijuana/hashish is frequently present in combination with other drugs, the reason for the ED visit may be more relevant to the other drug(s) involved in the episode.''

[24] An important aspect of TEDS admission data for marijuana is of the referral source for treatment. Specifically, primary marijuana admissions were less likely than all other admissions to either be self-referred or referred by an individual for treatment. Instead, the criminal justice system referred more than half (51.6 percent) of primary marijuana admissions.

Approximately 61.5 percent of primary marijuana admissions in 2011 were for individuals under the age of 25 years.

6. What, if Any, Risk There Is to the Public Health

Under the sixth factor, the Secretary must consider the risks posed to the public health by marijuana. Factors 1, 4, and 5 include a. discussion of the risk to the public health as measured by emergency room episodes and drug treatment admissions. Additionally, Factor 2 includes a discussion of marijuana's central nervous system, cognitive, cardiovascular, autonomic, respiratory, and immune system effects. Factor 6 focuses on the health risks to the individual user in terms of the risks from acute and chronic use of marijuana, as well as the ''gateway hypothesis.''

Risks From Acute Use of Marijuana

Acute use of marijuana impairs psychomotor performance, including complex task performance, which makes operating motor vehicles or heavy equipment after using marijuana inadvisable (Ramaekers et al., 2004; Ramaekers et al., 2006a). A meta-analysis conducted by Li et al. (2011) showed an association between marijuana use by the driver and a significantly increased risk of involvement in a car accident. Additionally, in a minority of individuals who use marijuana, some potential responses include dysphoria and psychological distress, including prolonged anxiety reactions (Haney et al., 1999).

Risks From Chronic Use of Marijuana

A distinctive marijuana withdrawal syndrome following long term or chronic use has been identified. The withdrawal syndrome indicates that marijuana produces physical dependence that is mild, short-lived, and comparable to tobacco withdrawal (Budney et al., 2008). Marijuana withdrawal syndrome is described in detail below under Factor 7.

The following states how the DSM–V (2013) of the American Psychiatric Association describes the consequences of *Cannabis* [25] abuse:

Individuals with cannabis use disorder may use cannabis throughout the day over a period of months or years, and thus may spend many hours a day under the influence. Others may use less frequently, but their use causes recurrent problems related to family,

[25] *Cannabis* is the term used in the DSM–V to refer to marijuana. In the following excerpt the term *Cannabis* is interchangeable for the term *marijuana.*

school, work, or other important activities (*e.g.,* repeated absences at work; neglect of family obligations). Periodic cannabis use and intoxication can negatively affect behavioral and cognitive functioning and thus interfere with optimal performance at work or school, or place the individual at increased physical risk when performing activities that could be physically hazardous (e.g:, driving a car; playing certain sports; performing manual work activities, including operating machinery). Arguments with spouses or parents over the use of cannabis in the home, or its use in the presence of children, can adversely impact family functioning and are common features of those with cannabis use disorder. Last, individuals with cannabis use disorder may continue using marijuana despite knowledge of physical problems (*e.g.,* chronic cough related to smoking) or psychological problems (*e.g.,* excessive sedation or exacerbation of other mental health problems) associated with its use.

Marijuana as a ''Gateway Drug''

Kandel (1975) proposed nearly 40 years ago the hypothesis that marijuana is a ''gateway drug'' that leads to the use or abuse of other illicit drugs. Since that time, epidemiological research explored this premise. Overall, research does not support a direct causal relationship between regular marijuana use and other illicit drug use. The studies examining the gateway hypothesis are limited. First, in general, studies recruit individuals influenced by a myriad of social, biological, and economic factors that contribute to extensive drug abuse (Hall & Lynskey, 2005). Second, most studies that test the hypothesis that marijuana use causes abuse of illicit drugs use the determinative measure *any use of an illicit drug,* rather than DSM–5 criteria for drug abuse or dependence on an illicit drug (DSM–5, 2013). Consequently, although an individual who used marijuana may try other illicit drugs, the individual may not regularly use drugs, or have a diagnosis of drug abuse or dependence.

Little evidence supports the hypothesis that initiation of marijuana use leads to an abuse disorder with other illicit substances. For example, one longitudinal study of 708 adolescents demonstrated that early onset marijuana use did not lead to problematic drug use (Kandel & Chen, 2000). Similarly, Nace et al. (1975) examined Vietnam-era soldiers who extensively abused marijuana and heroin while they were in the military, and found a lack of correlation of a causal relationship demonstrating marijuana use leading to heroin addiction. Additionally, in another longitudinal study of 2,446 adolescents, marijuana dependence was uncommon but when it did occur, the common predictors of marijuana dependence were the following: parental death, deprived socio-economic status, and baseline illicit drug use other than marijuana (von Sydow et al., 2002).

When examining the association between marijuana and illicit drugs, focusing on drug use versus abuse or dependence, different patterns emerge. For example, a study examining the possible causal relationship of the gateway hypothesis found a correlation between marijuana use in adolescents and other illicit drug use in early adulthood and, adjusting for age-linked experiences, did not effect this correlation (Van Gundy and Rebellon, 2010). However, when examining the association in terms of development of drug abuse; age-linked stressors and social roles moderated the correlation between marijuana use in adolescents and other illicit drug abuse. Similarly, Degenhardt et al. (2009) examined the development of drug dependence and found an association that did not support the gateway hypothesis. Specifically, drug dependence was significantly associated with the use of other illicit drugs prior to marijuana use.

Interestingly, the order of initiation of drug use seems to depend on the prevalence of use of each drug, which varies by country. Based on the World Health Organization (WHO) World Mental Health Survey that includes data from 17 different countries, the order of drug use initiation varies by country and relates to prevalence of drug use in each country (Degenhardt et al., 2010). Specifically, in the countries with the lowest prevalence of marijuana use, use of other illicit drugs before marijuana was common. This sequence of initiation is less common in countries with higher prevalence of marijuana use. A study of 9,282·households in the United States found that marijuana use often preceded the use of other illicit drugs; however, prior non-marijuana drug dependence was also frequently correlated with higher levels of illicit drug abuse (Degenhardt et al., 2009). Additionally, in a large 25-year longitudinal study of 1,256 New Zealand children, the author concluded that marijuana use correlated to an increased risk of abuse of other drugs, including cocaine and heroin (Fergusson et al., 2005).

Although many individuals with a drug abuse disorder may have used marijuana as one of their first illicit drugs, this fact does not correctly lead to the reverse inference that most individuals who used marijuana will inherently go on to try or become regular users of other illicit drugs. Specifically, data from the 2011 NSDUH survey illustrates this issue (SAMHSA, 2012). NSDUH data estimates 107.8 million individuals have a lifetime history of marijuana use, which indicates use on at least one occasion, compared to approximately 36 million individuals having a lifetime history of cocaine use and approximately 4 million individuals having a lifetime history of heroin use. NSDUH data do not provide information about each individual's specific drug history. However, even if one posits that every cocaine and heroin user previously used marijuana, the NSDUH data show that marijuana use at least once in a lifetime does not predict that an individual will also use another illicit drug at least once.

Finally, a review of the gateway hypothesis by Vanyukov et al. (2012) notes that because the gateway hypothesis only addresses the order of drug use initiation, the gateway hypothesis does not specify any mechanistic connections between drug ''stages'' following exposure to marijuana and does not extend to the risks for addiction. This concept contrasts with the concept of a common liability to addiction that involves mechanisms and biobehavioral characteristics pertaining to the entire course of drug abuse risk and disorders.

7. Its Psychic or Physiologic Dependence Liability

Under the seventh factor, the Secretary must consider marijuana's psychic or physiological dependence liability.

Psychic or psychological dependence has been shown in response to marijuana's psychoactive effects. Psychoactive responses to marijuana are pleasurable to many humans and are associated with drug-seeking and drug-taking (Maldonado, 2002). Moreover, high levels of psychoactive effects, notably positive reinforcement, are associated with increased marijuana use, abuse, and dependence (Scherrer et al., 2009; Zeiger et al., 2010). Epidemiological data support these findings through 2012 NSDUH statistics that show that of individuals years 12 or older who used marijuana in the past month, an estimated 40.3 percent used marijuana on 20 or more days within the past month. This equates to approximately 7.6 million individuals aged 12 or older who used marijuana on a daily or almost daily basis.

Additionally, the 2013 MTF data report the prevalence of daily marijuana use, defined as use on 20 or more days within the past 30 days, in 8th, 10th, and 12th graders is 1.1 percent, 4.0 percent, and 6.5 percent, respectively.

Tolerance is a state of adaptation where exposure to a drug induces changes that result in a diminution of one or more of the drug's effects over time (American Academy of Pain Medicine, American Pain Society and American Society of Addiction Medicine consensus document, 2001). Tolerance can develop to some, but not all, of marijuana's effects. Specifically, tolerance does not seem to develop in response to many of marijuana's psychoactive effects. This lack of tolerance may relate to electrophysiological data demonstrating that chronic delta9-THC administration does not affect increased neuronal firing in the ventral tegmental area, a region known to play a critical role in drug reinforcement and reward (Wu and French, 2000). In the absence of other abuse indicators, such as rewarding properties, the presence of tolerance or physical dependence does not determine whether a drug has abuse potential.

However, humans can develop tolerance to marijuana's cardiovascular, autonomic, and behavioral effects (Jones et al., 1981). Tolerance to some of marijuana's behavioral effects seems to develop after heavy marijuana use, but not after occasional marijuana use. For instance, following acute administration of marijuana, heavy marijuana users did not exhibit impairments in tracking and attention tasks, as were seen in occasional marijuana users (Ramaekers et al., 2009). Furthermore, a neurophysiological assessment administered through an electroencephalograph (EEG) which measures event-related potentials (ERP) conducted in the same subjects as the previous study, found a corresponding effect in the P100 [26] component of ERPs. Specifically, corresponding to performance on tracking and attention tasks, heavy marijuana users showed no changes in P100 amplitudes following acute marijuana administration, although occasional users showed a decrease in P100 amplitudes (Theunissen et al., 2012). A possible mechanism underlying tolerance to marijuana's effects may be the down-regulation of cannabinoid receptors (Hirvonen et al., 2012; Gonzalez et al., 2005; Rodriguez de Fonseca et al., 1994; Oviedo et al., 1993).

Importantly, pharmacological tolerance alone does not indicate a drug's physical dependence liability. In order for physical dependence to exist, evidence of a withdrawal syndrome is needed. Physical dependence is a state of adaptation, manifested by a drug-class specific withdrawal syndrome produced by abrupt cessation, rapid dose reduction, decreasing blood level of the drug, and/or administration of an antagonist *(ibid).* Many medications not associated with abuse or addiction can produce physical dependence and withdrawal symptoms after chronic use.

Discontinuation of heavy, chronic marijuana use has been shown to lead to physical dependence and withdrawal symptoms (American Psychiatric Association DSM–V, 2013; Budney and Hughes, 2006; Haney et al., 1999). In heavy, chronic marijuana users, the most commonly reported withdrawal symptoms are sleep difficulties, decreased appetite or weight loss, irritability, anger, anxiety or nervousness, and restlessness. Some less commonly reported withdrawal symptoms are depressed mood, sweating, shakiness, physical discomfort, and chills (Budney and Hughes, 2006; Haney et al., 1999). The occurrence of marijuana withdrawal symptoms in light or non-daily marijuana users has not been established. The American Psychiatric Association's DSM–V (2013) includes a list of symptoms of ''cannabis withdrawal.'' Most marijuana withdrawal symptoms begin within 24–48 hours of discontinuation, peak within 4–6 days, and last for 1–3 weeks. Marijuana withdrawal syndrome has been reported in adolescents and adults admitted for substance abuse treatment.

Based on clinical descriptions, this syndrome appears to be mild compared to classical alcohol and barbiturate withdrawal syndromes, which can include more serious symptoms such as agitation, paranoia, and seizures. Multiple studies comparing marijuana and tobacco withdrawal symptoms in humans demonstrate that the magnitude and time course of the two withdrawal syndromes are similar (Budney et al., 2008; Vandrey et al., 2005, 2008).

8. Whether the Substance is an Immediate Precursor of a Substance Already Controlled Under This Article

Under the eight factor analysis, the Secretary must consider whether marijuana is an immediate precursor of a controlled substance. Marijuana is not an immediate precursor of another controlled substance.

Recommendation

After consideration of the eight factors discussed above, FDA recommends that marijuana remain in Schedule I of the CSA. NIDA concurs with this scheduling recommendation.Marijuana meets the three criteria for placing a substance in Schedule I of the CSA under 21 U.S.C. 812(b)(l):

(1) Marijuana has a high potential for abuse:

A number of factors indicate marijuana's high abuse potential, including the large number of individuals regularly using marijuana, marijuana's widespread use, and the vast amount of marijuana available for illicit use. Approximately 18.9 million individuals in the United States (7.3 percent of the U.S. population) used marijuana monthly in 2012. Additionally, approximately 4.3 million individuals met diagnostic criteria for marijuana dependence or abuse in the year prior to the 2012 NSDUH survey. A 2013 survey indicates that by 12th grade, 36.4 percent of students report using marijuana within the past year, and 22.7 percent report using marijuana monthly. In 2011, 455,668 ED visits were marijuana-related, representing 36.4 percent of all illicit drug-related episodes. Primary marijuana use accounted for 18.1 percent of admissions to drug treatment programs in 2011. Additionally, marijuana has dose-dependent reinforcing effects, as demonstrated by data showing that humans prefer relatively higher doses to lower doses. Furthermore, marijuana use can result in psychological dependence.

(2) Marijuana has no currently accepted medical use in treatment in the United States:

FDA has not approved a marketing application for a marijuana drug product for any indication. The opportunity for scientists to conduct clinical research with marijuana exists, and there are active INDs for marijuana; however, marijuana does not have a currently accepted medical use for treatment in the United States, nor does marijuana have an accepted medical use with severe restrictions.

A drug has a ''currently accepted medical use'' if all of the following five elements have been satisfied:

a. The drug's chemistry is known and reproducible;

b. there are adequate safety studies;

c. there are adequate and well-controlled studies proving efficacy;

d. the drug is accepted by qualified experts; and

e. the scientific evidence is widely available.

[26] The P100 component of ERPs is thought to relate to the visual processing of stimuli and can be modulated by attention.

[57 FR 10499, March 26, 1992]

Marijuana does not meet any of the elements for having a ''currently accepted medical use.'' First, FDA broadly evaluated marijuana, and did not focus its evaluation on particular strains of marijuana or components or derivatives of marijuana. Since different strains may have different chemical constituents, marijuana, as identified in this petition, does not have a known and reproducible chemistry, which would be needed to provide standardized doses. Second, there are not adequate safety studies on marijuana in the medical literature in relation to a specific, recognized disorder. Third, there are no published adequate and well controlled studies proving efficacy of marijuana. Fourth, there is no evidence that qualified experts accept marijuana for use in treating a specific, recognized disorder. Lastly, the scientific evidence regarding marijuana's chemistry in terms of a specific *Cannabis* strain that could produce standardized and reproducible doses is not currently available, so the scientific evidence on marijuana is not widely available.

Alternately, a Schedule II drug can be considered to have a ''currently accepted medical use with severe restrictions'' (21 U.S.C. 812(b)(2)(B)). Yet as stated above, the lack of accepted medical use for a specific, recognized disorder precludes the use of marijuana even under conditions where its use is severely restricted.

In conclusion, to date, research on marijuana's medical use has not developed to the point where marijuana is considered to have a ''currently accepted medical use'' or a ''currently accepted medical use with severe restrictions.''

(3) There is a lack of accepted safety for use of marijuana under medical supervision:

There are currently no FDA-approved marijuana drug products. Marijuana does not have a currently accepted medical use in treatment in the United States or a currently accepted medical use with severe restrictions. Thus, FDA has not determined that marijuana is safe for use under medical supervision.

In addition, FDA cannot conclude that marijuana has an acceptable level of safety relative to its effectiveness in treating a specific, recognized disorder without evidence that the substance is contamination free, and assurance of a consistent and predictable dose. Investigations into the medical use of marijuana should include information and data regarding the chemistry, manufacturing, and specifications of marijuana. Additionally, a procedure for delivering a consistent dose of marijuana should also be developed. Therefore, FDA concludes marijuana does not currently have an accepted level of safety for use under medical supervision.

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The Medical Application of Marijuana: A Review of Published Clinical Studies

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Prepared by:

U.S. Food and Drug Administration

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Table of Contents

Executive Summary

Marijuana is a Schedule I substance under the Controlled Substances Act (CSA). Schedule I indicates a high potential for abuse, no currently accepted medical use in the United States, and a lack of accepted safety for use under medical supervision. To date, marijuana has not been subject to an approved new drug application (NDA) that demonstrates its safety and efficacy for a specific indication under the Food Drug and Cosmetic Act (FDCA).

Nevertheless, as of October 2014, twenty-three states and the District of

Columbia have passed state-level medical marijuana laws that allow for marijuana use within that state; similar bills are pending in other states.

The present review was undertaken by the Food and Drug Administration (FDA) to analyze the clinical studies published in the medical literature investigating the use of marijuana in any therapeutic areas. First, we discuss the context for this scientific review. Next, we describe the methods used in this review to identify adequate and well-controlled studies evaluating the safety and efficacy of marijuana for particular therapeutic uses.

The FDA conducted a systematic search for published studies in the medical literature that meet the described criteria for study design and outcome measures prior to February 2013. While not part of our systematic review, we have continued to routinely follow the literature beyond that date for subsequent studies. Studies were considered to be relevant to this review if the investigators administered marijuana to patients with a diagnosed medical condition in a well-controlled, double-blind, placebo-controlled clinical trial. Of the eleven studies that met the criteria for review, five different therapeutic areas were investigated:

- Five studies examined chronic neuropathic pain
- Two studies examined appetite stimulation in human immunodeficiency virus (HIV) patients
- Two studies examined glaucoma
- One study examined spasticity and pain in multiple sclerosis (MS)
- One study examined asthma.

For each of these eleven clinical studies, information is provided regarding the subjects studied, the drug conditions tested (including dose and method of administration), other drugs used by subjects during the study, the physiological and subjective measures collected, the outcome of these measures comparing treatment with marijuana to placebo, and the reported and observed adverse events. The conclusions drawn by the investigators are then described, along with potential limitations of these conclusions based on the study design. A brief summary of each study's findings and limitations is provided at the end of the section.

The eleven clinical studies that met the criteria and were evaluated in this review showed positive signals that marijuana may produce a desirable therapeutic outcome, under the specific experimental conditions tested. Notably, it is beyond the scope of this review to determine whether these data demonstrate that marijuana has a currently accepted medical use in the United States. However, this review concludes that these eleven clinical studies serve as proof-of-concept studies, based on the limitations of their study designs, as described in the study summaries. Proof-of-concept studies provide preliminary evidence on a proposed hypothesis regarding a drug's effect. For drugs under development, the effect often relates to a short-term clinical outcome being investigated. Proof-of-concept studies serve as the link between preclinical studies and dose ranging clinical studies. Therefore, proof-of-concept studies are not sufficient to demonstrate efficacy of a drug because they provide only preliminary information about the effects of a drug. However, the studies reviewed produced positive results, suggesting marijuana should be further evaluated as an adjunct treatment for neuropathic pain, appetite stimulation in HIV patients, and spasticity in MS patients.

The main limitations identified in the eleven studies testing the medical applications of marijuana are listed below:

- The small numbers of subjects enrolled in the studies, which limits the statistical analyses of safety and efficacy.
- The evaluation of marijuana only after acute administration in the studies, which limits the ability to determine efficacy following chronic administration.
- The administration of marijuana typically through smoking, which exposes ill patients to combusted material and introduces problems with determining the doses delivered.
- The potential for subjects to identify whether they received marijuana or placebo, which breaks the blind of the studies.
- The small number of cannabinoid naïve subjects, which limits the ability to determine safety and tolerability in these subjects.
- The low number of female subjects, which makes it difficult to generalize the study findings to subjects of both genders.

Thus, this review discusses the following methodological changes that may be made in order to resolve these limitations and improve the design of future studies which examine the safety and efficacy of marijuana for specific therapeutic indications:

- Determine the appropriate number of subjects studied based on recommendations in various FDA *Guidances for Industry* regarding the conduct of clinical trials for specific medical indications.
- Administer consistent and reproducible doses of marijuana based on recommendations in the FDA *Guidance for Industry: Botanical Drug Products (2004)*.[27]
- Evaluate the effects of marijuana under therapeutic conditions following both acute and chronic administration.
- Consider alternatives to smoked marijuana (*e.g.,* vaporization).
- Address and improve whenever possible the difficulty in blinding of marijuana and placebo treatments in clinical studies.
- Evaluate the effect of prior experience with marijuana with regard to the safety and tolerability of marijuana.
- Strive for gender balance in the subjects used in studies.

In conclusion, the eleven clinical studies conducted to date do not meet the criteria required by the FDA to determine if marijuana is safe and effective in specific therapeutic areas. However, the studies can serve as proof-of-concept studies and support further research into the use of marijuana in these therapeutic indications. Additionally, the clinical outcome data and adverse event profiles reported in these published studies can beneficially inform how future research in this area is conducted. Finally, application of the recommendations listed above by investigators when designing future studies could greatly improve the available clinical data that can be used to determine if marijuana has validated and reliable medical applications.

1. Introduction

In response to citizen petitions submitted to the Drug Enforcement Administration (DEA) requesting DEA to reschedule marijuana, the DEA Administrator requested that the U.S. Department of Health and Human Services (HHS) provide a scientific and medical evaluation of the available information and a scheduling recommendation for marijuana, in accordance with 21 U.S.C. 811(b). The Secretary of HHS is required to consider in a scientific and medical evaluation eight factors determinative of control under the Controlled Substance Act (CSA). Administrative responsibilities for evaluating a substance for control under the CSA are performed by the Food and Drug Administration (FDA), with the concurrence of the National Institute on Drug Abuse (NIDA). Part of

[27] This Guidance is available on the internet at *http://www.fda.gov/Drugs/default.htm* under Guidance (Drugs).

this evaluation includes an assessment of whether marijuana has a currently accepted medical use in the United States. This assessment necessitated a review of the available data from published clinical studies to determine whether there is adequate scientific evidence of marijuana's effectiveness.

Under Section 202 of the CSA, marijuana is currently controlled as a Schedule I substance (21 U.S.C. 812). Schedule I includes those substances that have a high potential for abuse, have no currently accepted medical use in treatment in the United States, and lack accepted safety for use under medical supervision (21 U.S.C. 812(b)(1)(A)–(C)).

A drug product which has been approved by FDA for marketing in the United States is considered to have a ''currently accepted medical use.'' Marijuana is not an FDA-approved drug product, as a New Drug Application (NDA) or Biologics License application (BLA) for marijuana has not been approved by FDA. However, FDA approval of an NDA is not the only means through which a drug can have a currently accepted medical use in the United States.

In general, a drug may have a ''currently accepted medical use'' in the United States if the drug meets a five-part test. Established case law (*Alliance for Cannabis Therapeutics* v. *DEA,* 15 F.3d 1131, 1135 (D.C. Cir. 1994)) upheld the Administrator of DEA's application of the five-part test to determine whether a drug has a ''currently accepted medical use.'' The following describes the five elements that characterize ''currently accepted medical use'' for a drug: [28]

i. The drug's chemistry must be known and reproducible

''The substance's chemistry must be scientifically established to permit it to be reproduced into dosages which can be standardized. The listing of the substance in a current edition of one of the official compendia, as defined by section 201(j) of the Food, Drug and Cosmetic Act, 21 U.S.C. 321(j), is sufficient to meet this requirement.''

ii. there must be adequate safety studies

''There must be adequate pharmacological and toxicological studies, done by all methods reasonably applicable, on the basis of which it could fairly and responsibly be concluded, by experts qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, that the substance is safe for treating a specific, recognized disorder.''

iii. there must be adequate and well-controlled studies proving efficacy

''There must be adequate, well-controlled, well-designed, well-conducted, and well-documented studies, including clinical investigations, by experts qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, on the basis of which it could be fairly and responsibly concluded by such experts that the substance will have the intended effect in treating a specific, recognized disorder.''

iv. the drug must be accepted by qualified experts

''The drug has a New Drug Application (NDA) approved by the Food and Drug Administration, pursuant to the Food, Drug and Cosmetic Act, 21 U.S.C. 355. Or, a consensus of the national community of experts, qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, accepts the safety and effectiveness of the substance for use in treating a specific, recognized disorder. A material conflict of opinion among experts precludes a finding of consensus.'' and

v. the scientific evidence must be widely available.

''In the absence of NDA approval, information concerning the chemistry, pharmacology, toxicology, and effectiveness of the substance must be reported, published, or otherwise widely available, in sufficient detail to permit experts, qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, to fairly and responsibly conclude the substance is safe and effective for use in treating a specific, recognized disorder.''

One way to pass the five-part test for having ''currently accepted medical use'' is through submission of an NDA or BLA which is approved by FDA. However, FDA approval of an NDA or BLA is not required for a drug to pass the five-part test.

This review focuses on FDA's analysis of one element of the five-part test for determining whether a drug has ''currently accepted medical use''. Specifically, the present review assesses the 3rd criterion that addresses whether marijuana has ''adequate and well-controlled studies proving efficacy''. Thus, this review evaluates published clinical studies that have been conducted using marijuana in subjects who have a variety of medical conditions by assessing the adequacy of the summarized study designs and the study data. The methodology for selecting the studies that were evaluated is delineated below.

FDA's evaluation and conclusions regarding the remaining four criteria for whether marijuana has a ''currently accepted medical use,'' as well as the eight factors pertaining to the scheduling of marijuana, are outside the scope of this review. A detailed discussion of these factors is contained in FDA's scientific and medical evaluation of marijuana.

2. Methods

The methods for selecting the studies to include in this review involved the following steps, which are described in detail in the subsections below:

1. Define the objective of the review.

2. Define ''marijuana'' in order to facilitate the medical literature search for studies that administered the substance,

3. Define ''adequate and well-controlled studies'' in order to facilitate the search for relevant data and literature,

4. Search medical literature databases and identify relevant adequate and well-controlled studies, and

5. Review and analyze the adequate and well-controlled clinical studies to determine if they demonstrate efficacy of marijuana for any therapeutic indication.

2.1 Define the Objective of the Review

The objective of this review is to assess the study designs and resulting data from clinical studies published in the medical literature that were conducted with marijuana (as defined below) as a treatment for any therapeutic indication, in order to determine if they meet the criteria of ''adequate and well-controlled studies proving efficacy''.

2.2 Define ''Marijuana''

In this review, the term ''marijuana'' refers to the flowering tops or leaves of the *Cannabis* plant. There were no restrictions on the route of administration used for marijuana in the studies.

Studies which administered individual cannabinoids (whether experimental substances or marketed drug products) or marijuana extracts were excluded from this review. Additionally, studies of administered neutral plant material or placebo marijuana (marijuana with all cannabinoids extracted) that had subsequently been supplemented by the addition of specific amounts of THC or other cannabinoids were also excluded (Chang et al., 1979).

[28] 57 FR 10499, 10504–06 (March 26, 1992).

2.3 Define ''Adequate and Well-Controlled Clinical Studies''

The criteria for an ''adequate and well-controlled study'' for purposes of determining the safety and efficacy of a human drug is defined under the Code of Federal Regulations (CFR) in 21 CFR 314.126. The elements of an adequate and well-controlled study as described in 21 CFR 314.126 can be summarized as follows:

1. The main objective must be to assess a therapeutically relevant outcome.
2. The study must be placebo-controlled.
3. The subjects must qualify as having the medical condition being studied.
4. The study design permits a valid comparison with an appropriate control condition.
5. The assignment of subjects to treatment and control groups must be randomized.
6. There is minimization of bias through the use of a double-blind study design.
7. The study report contains a full protocol and primary data.
8. Analysis of the study data is appropriately conducted.

As noted above, the current review examines only those data available in the public domain and thus relies on clinical studies published in the medical literature. Published studies by their nature are summaries that do not include the level of detail required by studies submitted to FDA in an NDA.

While the majority of the elements defining an adequate and well-controlled study can be satisfied through a published paper (elements #1–6), there are two elements that cannot be met by a study published in the medical literature: element #7 (availability of a study report with full protocol and primary data) and element #8 (a determination of whether the data analysis was appropriate). Thus, for purposes of this review, only elements #1–6 will be used to qualify a study as being adequate and well-controlled.

2.4 Search Medical Literature Databases and Identify Relevant Studies

We identified randomized, double-blind, placebo-controlled clinical studies conducted with marijuana to assess marijuana's efficacy in any therapeutic indication. Two primary medical literature databases were searched for all studies posted to the databases prior to February 2013: [29]

- *PubMed:* PubMed is a database of published medical and scientific studies that is maintained by the U.S. National Library of Medicine (NLM) at NIH as a part of the Entrez system of information retrieval. PubMed comprises more than 24 million citations for biomedical literature from MEDLINE, life science journals, and online books (*http://www.ncbi.nlm.nih.gov/pubmed*).
- *ClinicalTrials.gov:* ClinicalTrials.gov is a database of publicly and privately supported clinical studies that is maintained by the NLM. Information about the clinical studies is provided by the Sponsor or Principal Investigator of the study. Information about the studies is submitted to the Web site (''registered'') when the studies begin, and is updated throughout the study. In some cases, results of the study or resulting publication citations are submitted to the Web site after the study ends (*https://clinicaltrials.gov/ct2/about-site/background*).

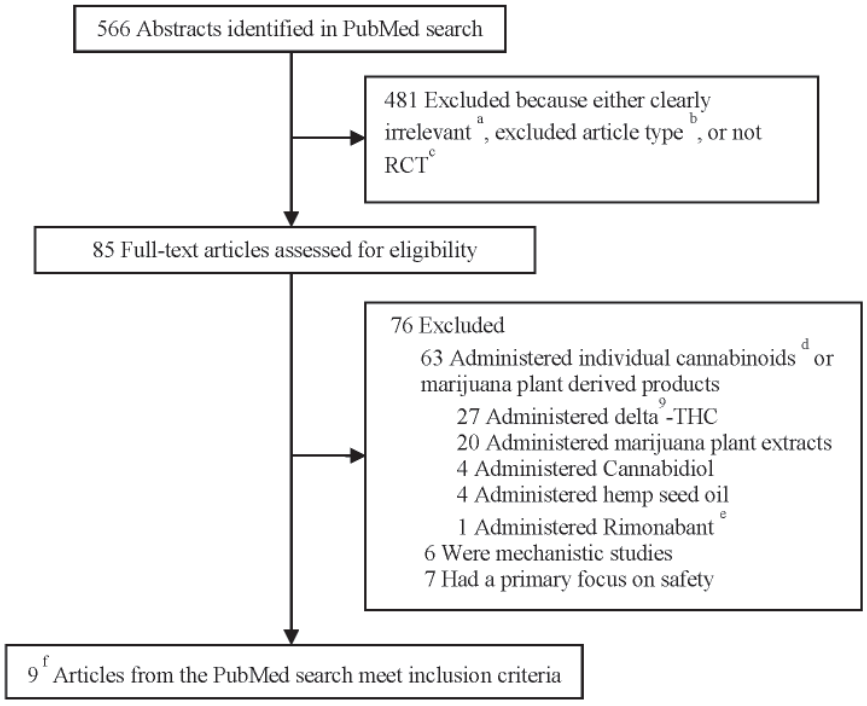
ClinicalTrials.gov was searched for all studies administering marijuana. The results of this search were used to confirm that no completed studies with published data were missed in the literature search. During the literature search, references found in relevant studies and systematic reviews were evaluated for additional relevant citations. All languages were included in the search. The PubMed search yielded a total of 566 abstracts.[30] Of these abstracts, a full-text review was conducted with 85 papers to assess eligibility. From this evaluation, only eleven of 85 studies met the 6 CFR elements for inclusion as adequate and well-controlled studies.

Figure 1 (below) provides an overview of the process used to identify studies from the PubMed search. The eleven studies reviewed were published between 1974 and 2013. Ten of these studies were conducted in the United States and one study was conducted in Canada. These eleven studies examined the effects of smoked and vaporized marijuana for the indications of chronic neuropathic pain, spasticity related to multiple sclerosis (MS), appetite stimulation in patients with human immunodeficiency virus (HIV), glaucoma, and asthma. All included studies used adult patients as subjects. All studies conducted in the United States were conducted under an IND as Phase 2 investigations.

[29] While not a systematic review, we have followed the recent published literature on marijuana use for possible therapeutic purposes and, as of January 2015, we found only one new study that would meet our criteria (Naftali et al., 2013). This study examined the effects of smoked marijuana on Crohn's disease.

[30] The following search strategy was used, ''(cannabis OR marijuana) AND (therapeutic use OR therapy) AND (RCT OR randomized controlled trial OR ''systematic review'' OR clinical trial OR clinical trials) NOT (''marijuana abuse''[Mesh] OR addictive behavior OR substance related disorders)''.

Figure 1: Identification of Studies from PubMed Search



[a] Articles were deemed irrelevant if they examined safety or adverse event related outcomes, including psychoactive effects or other adverse events. [b] Excluded article types included comments, reviews, meta-analyses, and news articles. [c] Randomized Controlled Trials. [d] Cannabinoids administered included synthetic cannabinoids. [e] Rimonabant is a cannabinoid receptor antagonist. [f] An additional 2 studies meeting the inclusion criteria were found through the reference search.

Two qualifying studies, which assessed marijuana for glaucoma, were previously reviewed in the 1999 Institute of Medicine (IOM) report entitled ''Marijuana and Medicine: Assessing the Science Base''.[31] We did our own analysis of these two studies and concurred with the conclusions in the IOM report. Thus, a detailed discussion of the two glaucoma studies is not included in the present review. The present review only discusses 9 of the identified 11 studies. For a summary of the study design for all eleven qualifying studies, see Tables 1–5 (located in the Appendix).

Based on the selection criteria for relevant studies described in Section 2.3 (Define Adequate and Well-Controlled Clinical Studies), a number of clinical studies that investigated marijuana, as defined in this review, were excluded from this review. Studies that examined the effects of marijuana in healthy subjects were excluded because they did not test a patient population with a medical condition (Flom et al., 1975; Foltin et al., 1986; Foltin et al., 1988; Hill et al., 1974; Milstein et al., 1974; Milstein et al., 1975; Soderpalm et al., 2001; Wallace et al., 2007; Greenwald and Stitzer, 2000). A 1975 study by Tashkin et al. was excluded because it had a single-blind, rather than double-blind, study design. Two other studies were excluded because the primary outcome measure assessed safety rather than a therapeutic outcome (Greenberg et al., 1994; Abrams et al., 2003).

2.5 Review and Analyze Qualifying Clinical Studies

Qualified clinical studies that evaluated marijuana for therapeutic purposes were examined in terms of adequacy of study design including method of drug administration, study size, and subject inclusion and exclusion criteria. Additionally, the measures and methods of analysis used in the studies to assess the treatment effect were examined.

3. Results and Discussion

The eleven qualifying studies in this review assessed a variety of therapeutic indications. In order to better facilitate analysis and discussion of the studies, the following sections group the studies by therapeutic area. Within each section, each individual study is summarized in terms of its design, outcome data and important limitations. This information is also provided in the Appendix in tabular form for each study.

3.1 Neuropathic Pain

Five randomized, double-blind, placebo-controlled Phase 2 clinical studies have been conducted to examine the effects of inhaled marijuana smoke on neuropathic pain associated with HIV-sensory neuropathy (Abrams et al., 2007; Ellis et al., 2009) and chronic neuropathic pain from multiple causes

[31] In January 1997, the White House Office of National Drug Control Policy (ONDCP) requested that the IOM conduct a review of the scientific evidence to assess the potential health benefits and risks of marijuana and its constituent cannabinoids. Information for this study was gathered through scientific workshops, site visits to cannabis buyers' clubs and HIV/Acquired Immunodeficiency Syndrome (AIDS) clinics, analysis of the relevant scientific literature, and extensive consultation with biomedical and social scientists. The report was finalized and published in 1999.

(Wilsey et al., 2008; Ware et al., 2010; Wilsey et al., 2013). Table 1 of the Appendix summarizes these studies.

3.1.1 Neuropathic Pain Associated With HIV-Sensory Neuropathy

Two studies examined the effect of marijuana to reduce the pain induced by HIV-sensory neuropathy.

Abrams et al. (2007) conducted the first study entitled, ''Cannabis in painful HIV-associated sensory neuropathy: A randomized placebo-controlled trial''. The subjects were 50 adult patients with uncontrolled HIV-associated sensory neuropathy, who had at least 6 experiences with smoking marijuana. The subjects were split into two parallel groups of 25 subjects each. More than 68% of subjects were current marijuana users, but all individuals were required to discontinue using marijuana prior to the study. Most subjects were taking medication for pain during the study, with the most common medications being opioids and gabapentin. Upon entry into the study, subjects had an average daily pain score of at least 30 on a 0–100 visual analog scale (VAS).

Subjects were randomized to receive either smoked marijuana (3.56% THC [32]) or smoked placebo cigarettes three times per day for 5 days, using a standardized cued smoking procedure: (1) 5 second inhale, (2) 10 second holding smoke in the lungs, (3) 40 second exhale and breathing normally between puffs. The authors did not specify how many puffs the subjects smoked at each smoking session, but they stated that one cigarette was smoked per smoking session.

Primary outcome measures included daily VAS ratings of chronic pain and the percentage of subjects who reported a result of more than 30% reduction in pain intensity. The ability of smoked marijuana to induce acute analgesia was assessed using both thermal heat model and capsaicin sensitization model, while anti-hyperalgesia was assessed with brush and von Frey hair stimuli. The immediate analgesic effects of smoked marijuana was assessed using a 0–100 point VAS at 40-minute intervals three times before and three times after the first and last smoking sessions, which was done to correspond to the time of peak plasma cannabinoid levels. Notably, not all subjects completed the induced pain portion of the study (n = 11 in marijuana group, 9 in placebo group) because of their inability to tolerate the stimuli. Throughout the study, subjects also completed the Profile of Mood States (POMS) questionnaire, as well as subjective VAS measures of anxiety, sedation, disorientation, paranoia, confusion, dizziness, and nausea.

As a result, the median daily pain was reduced 34% by smoked marijuana compared to 17% by placebo ($p = 0.03$). Fifty-two percent of subjects who smoked marijuana reported a >30% reduction in pain compared to 24% in the placebo group ($p = 0.04$). Although marijuana reduced experimentally-induced hyperalgesia ($p \leq 0.05$) during the first smoking sessions, marijuana did not alter responses to acutely painful stimuli.

There were no serious AEs and no episodes of hypertension, hypotension, or tachycardia requiring medical intervention. No subjects withdrew from the study for drug related reasons. Subjects in the marijuana group reported higher ratings on the subjective measures of anxiety, sedation, disorientation, confusion, and dizziness compared to the placebo group. There was one case of severe dizziness in a marijuana-treated subject. By the end of the study, subjects treated with marijuana and placebo reported a reduction in total mood disturbance as measured by POMS.

The authors conclude that smoked marijuana effectively reduced chronic neuropathic pain from HIV-associated sensory neuropathy with tolerable side effects. However, limitations of this study include: Maintenance of subjects on other analgesic medication while being tested with marijuana and a lack of information about the number of puffs during each inhalation of smoke. These limitations make it difficult to conclude that marijuana has analgesic properties on its own and that the actual AEs experienced during the study in response to marijuana are tolerable. However, the study produced positive results suggesting that marijuana should be studied further as an adjunct treatment for uncontrolled HIV-associated sensory neuropathy.

Ellis et al. (2009) conducted a more recent study entitled ''Smoked medicinal cannabis for neuropathic pain in HIV: a randomized, crossover clinical trial''. The subjects were 28 HIV-positive adult male patients with intractable neuropathic pain that was refractory to the effects of at least two drugs taken for analgesic purposes. Upon entry into the study, subjects had a mean score of >5 on the Pain Intensity subscale of the Descriptor Differential Scale (DDS). Subjects were allowed to continue taking their current routine of pain medications, which included opioids, non-narcotic analgesics, antidepressants, and anticonvulsants. Previous experience with marijuana was not required for participation in the study, but 27 of 28 subjects (96%) reported previous experience with marijuana. However, of these 27 experienced subjects, 63% (n = 18) reported no marijuana use within the past year.

The study procedures compared the effects of the target dose of marijuana and placebo during two treatment periods lasting 5 days, with 2 weeks washout periods. The marijuana strengths available were 1%, 2%, 4%, 6%, or 8% THC concentration by weight. Subjects smoked marijuana or placebo cigarettes four times per day, approximately 90–120 minutes apart, using a standardized cued smoking procedure: (1) 5 second smoke inhalation, (2) 10 second hold of smoke in lungs, (3) 40 second exhale and normal breathing between puffs. The investigators did not provide a description of the number of puffs taken at any smoking session. All subjects practiced the smoking procedures using placebo marijuana prior to test sessions.

On the first day of each test period, dose titration occurred throughout the four smoking sessions scheduled for that day, with a starting strength of 4% THC concentration. Subjects were allowed to titrate to a personalized ''target dose'', which was defined as the dose that provided the best pain relief without intolerable adverse effects. This dose titration was accomplished by allowing subjects to either increase the dose incrementally (to 6% or 8% THC) to improve analgesia, or to decrease the dose incrementally (to 1% or 2% THC) if AEs were intolerable. For the next 4 days of each test period, the subjects smoked their target dose during each of the four daily smoking sessions. To maintain the blind, placebo marijuana was represented as containing 1%–8% THC, even though it did not contain any cannabinoids.

The primary outcome measure was the change in pain magnitude on the DDS at the end of each test period compared to baseline, with a clinically significant level of analgesia considered to be a reduction in pain of at least 30%. Additional measures included the POMS, the Sickness Impact Profile (SIP), the Brief Symptom Inventory (BSI) and the UKU Side Effect Rating Scale and a subjective highness/sedation VAS.

During the marijuana treatment week, 19 subjects titrated to the 2%–4% THC dose while the 6%–8% dose was

[32] The drug dose is reported as percentage of THC present in the marijuana rather than milligrams of THC present in each cigarette because of the difficulty in determining the amount of THC delivered by inhalation (see discussion in the section entitled ''3.7.2 Marijuana Dose Standardization'').

preferred by 8 subjects and 1 subject chose the 1% dose. In contrast, during the placebo treatment week, all 28 subjects titrated to the highest possible dose of ''8% THC'' that contained no actual cannabinoids, suggesting that placebo treatment provided little analgesic relief.

The degree of pain reduction was significantly greater after administration of marijuana compared to placebo (median change of 3.3 points on DDS, $p = 0.016$). The median change from baseline in VAS pain scores was –17 for marijuana treatment compared to –4 for placebo treatment ($p < 0.001$). A larger proportion of subjects who were treated with marijuana (0.46) reported a >30% reduction in pain, compared to placebo (0.18). Additionally, the authors report improvements in total mood disturbance, physical disability, and quality of life as measured on POMS, SIP, and BSI scales after both placebo and marijuana treatment (data not provided in paper).

In terms of safety, there were no alterations in HIV disease parameters in response to marijuana or placebo. The authors report that marijuana led to a greater degree of UKU responses as well as AEs such as difficulty in concentration, fatigue, sleepiness or sedation, increased duration of sleep, reduced salivation and thirst compared to placebo (data not provided in paper). Two subjects withdrew from the study because of marijuana-related AEs: one subject developed an intractable smoking-related cough during marijuana administration and the sole marijuana-naïve subject in the study experienced an incident of acute cannabis-induced psychosis.[33]

The authors conclude that smoked marijuana effectively reduced chronic neuropathic pain from HIV-associated sensory neuropathy. The limitations of this study include: a lack of information about the number of puffs during each inhalation of smoke; a lack of information about the specific timing of the subjective assessments and collection of AEs relative to initiation of the smoking sessions; and the inclusion of only one marijuana-naïve subject. These limitations make it difficult to conclude that the actual AEs experienced during the study in response to marijuana are tolerable. It is especially concerning that the only marijuana-naïve subject left the study because of serious psychiatric responses to marijuana exposure at analgesic doses. However, the study produced positive results suggesting that marijuana should be studied further as an adjunct treatment for uncontrolled HIV-associated sensory neuropathy.

[33] At the time of the study, the following criteria from the Diagnostic and Statistical Manual of Mental Disorders (DSM–IV–TR, 2000) were used to diagnose substance-induced psychotic disorders: Prominent hallucinations or delusions; Hallucinations and/or delusions that develop during, or within one month of, intoxication or withdrawal; The disturbance is not better accounted for by a psychotic disorder that is not substance induced. The disturbance does not occur exclusively during the course of a delirium.

3.1.2 Central and Peripheral Neuropathic Pain

Three studies examined the effect of marijuana on chronic neuropathic pain.

Wilsey et al. (2008) examined chronic neuropathic pain from multiple causes in the study entitled, ''A Randomized, Placebo-Controlled, Crossover Trial of Cannabis Cigarettes in Neuropathic Pain''. The subjects were 32 patients with a variety of neuropathic pain conditions, including 22 with complex regional pain syndrome, 6 with spinal cord injury, 4 with multiple sclerosis, 3 with diabetic neuropathy, 2 with ilioinguinal neuralgia, and 1 with lumbosacral plexopathy. All subjects reported a pain intensity of at least 30 on a 0–100 VAS and were allowed to continue taking their regular medications during the study period, which included opioids, antidepressants, anticonvulsants, and NSAIDs. All subjects were required to have experience with marijuana but could not use any cannabinoids for 30 days before study sessions.

The study consisted of three test sessions with an interval of 3–21 days between sessions. Treatment conditions were high-strength marijuana (7% delta-9-THC), low-strength marijuana (3.5% delta-9-THC), and placebo cigarettes, administered through a standardized cued-puff procedure: (1) ''light the cigarette'' (30 seconds), (2) ''get ready'' (5 seconds), (3) ''inhale'' (5 seconds), (4) ''hold smoke in lungs'' (10 seconds), (5) ''exhale,'' and (6) wait before repeating the puff cycle (40 seconds). Participants took 2 puffs after baseline measurements, 3 puffs an hour later, and 4 puffs an hour after that, for a cumulative dose of 9 puffs per test session.

Hourly assessment periods were scheduled before and after each set of puffs and for 2 additional hours during the recovery period. Plasma cannabinoids were measured at baseline, 5 minutes after the first puff and again at 3 hours after the last puff cycle.

The primary outcome measure was spontaneous pain relief, as measured by a 0–100 point VAS for current pain. Pain unpleasantness was measured on a 0–100 point VAS, and degree of pain relief was measured on a 7-point Patient Global Impression of Change (PGIC) scale. Secondary measures included the Neuropathic Pain Scale (NPS), a 0–100 point VAS for allodynia, and changes in thermal pain threshold. Subjective measures were also evaluated with unipolar 0–100 point VAS for any drug effect, good drug effect, bad drug effect, high, drunk, impaired, stoned, like the drug effect, sedated, confused, nauseated, desire more of the drug, anxious, down, hungry, and bipolar 0–100 point VAS for sad/happy, anxious/relaxed, jittery/calm, bad/good, paranoid/self-assured, fearful/unafraid. Neurocognitive assessments measured attention and concentration, learning and memory, and fine motor speed.

Marijuana produced a reduction in pain compared to placebo, as measured by the pain VAS, the PGIC and on pain descriptors in the NPS, including sharp ($P < .001$), burning ($P < .001$), aching ($P < .001$), sensitive ($P = .03$), superficial ($P < .01$) and deep pain ($P < .001$). Notably, there were no additional benefits from the 7% THC strength of marijuana compared to the 3.5% THC strength, seemingly because of cumulative drug effects over time. There were no changes in allodynia or thermal pain responsivity following administration of either dose of marijuana.

Marijuana at both strengths produced increases on measures of any drug effect, good drug effect, high, stoned, impairment, sedation, confusion, and hunger. The 7% THC marijuana increased anxiety scores and bad drug effect (later in session) compared to placebo. Neither strength of marijuana affected the measures of mood. On neurocognitive measures, both the 3.5% THC and 7% THC marijuana produced impairment in learning and memory, while only the 7% THC marijuana impaired attention and psychomotor speed, compared to placebo. There were no adverse cardiovascular side effects and no subjects dropped out because of an adverse event related to marijuana.

The authors conclude that marijuana may be effective at ameliorating neuropathic pain at doses that induce mild cognitive effects, but that smoking is not an optimum route of administration. The limitations of this study include: Inclusion of subjects with many forms of neuropathic pain and maintenance of subjects on other analgesic medication while being tested with marijuana. These limitations make it difficult to conclude that marijuana has analgesic properties on its own and that the actual AEs experienced during the study in response to marijuana are tolerable. The authors compared pain score results by the type of pain

condition, with no significant differences found; however, the sample size of this study was small thus a type II error may have been present. Thus, it is difficult to determine if any particular subset of neuropathic pain conditions would benefit specifically from marijuana administration. However, the study produced positive results suggesting that marijuana should be studied further as an adjunct treatment for uncontrolled neuropathic pain.

The second study, conducted by Ware et al. (2010) in Canada is entitled, ''Smoked cannabis for chronic neuropathic pain: a randomized controlled trial''. The subjects were 21 adult patients with neuropathic pain caused by trauma or surgery compounded with allodynia or hyperalgesia, and a pain intensity score greater than 4 on a 10 point VAS. All subjects maintained their current analgesic medication and they were allowed to use acetaminophen for breakthrough pain. Eighteen subjects had previous experience with marijuana but none of them had used marijuana within a year before the study.

The study design used a four-period crossover design, testing marijuana (2.5%, 6.0% and 9.4% THC) and placebo marijuana. The 2.5% and 6.0% doses of marijuana were included to increase successful blinding. Each period was 14 days in duration, beginning with 5 days on the study drug followed by a 9-day washout period. Doses were delivered as 25 mg of marijuana that was smoked in a single inhalation using a titanium pipe. The first dose of each period was self-administered using a standardized puff procedure: (1) Inhale for 5 seconds, (2) hold the smoke in their lungs for 10 seconds, and (3) exhale. Subsequent doses were self-administered in the same manner for a total of three times daily at home on an outpatient basis for the first five days of each period.

The primary measure was an 11-point pain intensity scale, averaged over the 5 day treatment period, which was administered once daily for present, worst, least and average pain intensity during the previous 24 hours. Secondary measures included an acute pain 0–100 point VAS, pain quality assessed with the McGill Pain Questionnaire, sleep assessed with the Leeds Sleep Evaluation Questionnaire, mood assessed with the POMS, quality of life assessed using the EQ–5D health outcome instrument. Subjective measures included 0–100 point VAS scales for high, relaxed, stressed and happy.

Over the first three hours after smoking marijuana, ratings of pain, high, relaxation, stress, happiness and heart rate were recorded. During the five days of each study period, participants were contacted daily to administer questionnaires on pain intensity, sleep, medication and AEs. Subjects returned on the fifth day to complete questionnaires on pain quality, mood, quality of life and assessments of potency. At the end of the study, participants completed final adverse event reports and potency assessments.

The average daily pain intensity was significantly lower on 9.4% THC marijuana (5.4) than on placebo marijuana (6.1) ($p = 0.023$). The 9.4% THC strength also produced more drowsiness, better sleep, with less anxiety and depression, compared to placebo (all $p < 0.05$). However, there were no significant differences on POMS scores or on VAS scores for high, happy, relaxed or stressed between THC doses.

The most frequent drug-related adverse events reported in the group receiving 9.4% THC marijuana were headache, dry eyes, burning sensation, dizziness, numbness and cough. Reports of high and euphoria occurred on only three occasions, once in each dose of THC. There were no significant changes in vital signs, heart-rate variability, or renal function. One subject withdrew from the study due to increased pain during administration of 6% THC marijuana.

The authors conclude that smoked marijuana reduces neuropathic pain, improves mood and aids in sleep, but that smoking marijuana is not a preferable route of administration. The limitations of this study include: The lack of information on timing of assessments during the outpatient portion of the study and maintenance of subjects on other analgesic medication while being tested with marijuana. These limitations make it difficult to conclude that marijuana has analgesic properties on its own and that the actual AEs experienced during the study in response to marijuana are tolerable. However, the study produced positive results suggesting that marijuana should be studied further as an adjunct treatment for uncontrolled neuropathic pain.

Wilsey et al. (2013) conducted the most recent study entitled, ''Low-Dose Vaporized Cannabis Significantly Improves Neuropathic Pain''. This study is the only one in this review that utilized vaporization as a method of marijuana administration. The subjects were 36 patients with a neuropathic pain disorder (CRPS, thalamic pain, spinal cord injury, peripheral neuropathy, radiculopathy, or nerve injury) who were maintained on their current medications (opioids, anticonvulsants, antidepressants, and NSAIDs). Although subjects were required to have a history of marijuana use, they refrained from use of cannabinoids for 30 days before study sessions.

Subjects participated in three sessions in which they received 1.29% or 3.53% THC marijuana or placebo marijuana. The marijuana was vaporized using the Volcano vaporizer and a standardized cued-puff procedure: (1) ''hold the vaporizer bag with one hand and put the vaporizer mouthpiece in their mouth'' (30 seconds), (2) ''get ready'' (5 seconds), (3) ''inhale'' (5 seconds), (4) ''hold vapor in lungs'' (10 seconds), (5) ''exhale and wait'' before repeating puff cycle (40 seconds). Subjects inhaled 4 puffs at 60 minutes. At 180 minutes, the vaporizer was refilled with marijuana vapor and subjects were allowed to inhale 4 to 8 puffs using the cued procedure. Thus, cumulative dosing allowed for a range of 8 to12 puffs in total for each session, depending on the subjects desired response and tolerance. The washout time between each session ranged from 3–14 days.

The primary outcome variable was spontaneous pain relief, as assessed using a 0–100 point VAS for current pain. Secondary measures included the Patient Global Impression of Change (PGIC), the Neuropathic Pain Scale (NPS), a 0–100 point VAS for allodynia. Acute pain threshold was measured with a thermal pain model. Subjective measures included 0–100 point unipolar VAS for any drug effect, good drug effect, bad drug effect, high, drunk, impaired, stoned, drug liking, sedated, confused, nauseated, desire more drug, anxious, down and hungry. Bipolar 0–100 point VAS included sad/happy, anxious/relaxed, jittery/calm, bad/good, paranoid/self-assured, and fearful/unafraid.

Neurocognitive assessments assessed attention and concentration, learning and memory, and fine motor speed.

A 30% reduction in pain was achieved in 61% of subjects who received the 3.53% THC marijuana, in 57% of subjects who received the 1.29% THC marijuana and in 26% of subjects who received the placebo marijuana ($p = 0.002$ for placebo vs. 3.53% THC, $p = 0.007$ for placebo vs 1.29% THC; $p \leq 0.05$ 1.29% THC vs. 3.53% THC). Both strengths of marijuana significantly decreased pain intensity, unpleasantness, sharpness, and deepness on the NPS, as well as pain ratings on the PGIC, compared to placebo. These effects on pain were maximal with cumulative dosing over

the course of the study session, with maximal effects at 180 minutes. There were no effects of marijuana compared to placebo on measures of allodynia or thermal pain. Subjects correctly identified the study treatment 63% of the time for placebo, 61% of the time for 1.29% THC, and 89% of the time for 3.53% THC.

On subjective measures, marijuana produced dose-dependent increases compared to placebo on ratings for: any drug effect, good drug effect, drug liking, high, stoned, sedated, confused, and hungry. Both strengths of marijuana produced similar increases in drunk or impaired compared to placebo. In contrast, desire for drug was rated as higher for the 1.29% THC marijuana compared to the 3.53% THC marijuana. There were no changes compared to placebo for bad effect, nauseous, anxiety, feeling down or any of the bipolar mood assessments. There was dose-dependent impairment on learning and memory from marijuana compared to placebo, but similar effects between the two strengths of marijuana on attention.

The authors conclude that vaporization of relatively low doses of marijuana can produce improvements in analgesia in neuropathic pain patients, especially when patients are allowed to titrate their exposure. However, this individualization of doses may account for the general lack of difference between the two strengths of marijuana. No data were presented regarding the total amount of THC consumed by each subject, so it is difficult to determine a proper dose-response evaluation. Additional limitations of this study are the inclusion of subjects with many forms of neuropathic pain and maintenance of subjects on other analgesic medication while being tested with marijuana. These limitations make it difficult to conclude that marijuana has analgesic properties on its own. It is also difficult to determine if any particular subset of neuropathic pain conditions would benefit specifically from marijuana administration. However, the study produced positive results suggesting that marijuana should be studied further as an adjunct treatment for uncontrolled neuropathic pain.

3.2 Appetite Stimulation in HIV

Two randomized, double-blind, placebo-controlled Phase 2 studies examined the effects of smoked marijuana on appetite in HIV-positive subjects (Haney et al., 2005; Haney et al., 2007). Table 2 of the Appendix summarizes both studies.

The first study, conducted by Haney et al. (2005) is entitled, ''Dronabinol and marijuana in HIV+ marijuana smokers: Acute effects on caloric intake and mood''. The subjects were 30 HIV-positive patients who were maintained on two antiretroviral medications and either had clinically significant decreases in lean muscle mass [34] (low-BIA group, n = 15) or normal lean muscle mass (normal-BIA group, n = 15). All subjects had a history of smoking marijuana at least twice weekly for 4 weeks prior to entry into the study. On average, individuals had smoked 3 marijuana cigarettes per day, 5–6 times per week for 10–12 years.

Subjects participated in 8 sessions that tested the acute effects of 0, 10, 20, and 30 mg dronabinol oral capsules and marijuana cigarettes with 0%, 1.8%, 2.8%, and 3.9% THC concentration by weight, using a double-dummy design (with only one active drug per session). The doses of dronabinol are higher than those doses typically prescribed for appetite stimulation in order to help preserve the blinding. There was a one-day washout period between test sessions.

Marijuana was administered using a standardized cued procedure: (1) ''light the cigarette'' (30 seconds), (2) ''prepare'' (5 seconds), (3) ''inhale'' (5 seconds), (4) ''hold smoke in lungs'' (10 seconds), and (5) ''exhale.'' Each subject smoked three puffs in this manner, with a 40-second interval between each puff.

Caloric intake was used as a surrogate measure for weight gain. Subjects received a box containing a variety of food and beverage items and were told to record consumption of these items following that day's administration of the test drug. Subjective measures included 0–100 point VAS for feel drug effect, good effect, bad effect, take drug again, drug liking, hungry, full, nauseated, thirsty, desire to eat. Neurocognitive measures and vital signs were monitored.

The low BIA group consumed significantly more calories in the 1.8% and 3.9% THC marijuana conditions ($p<0.01$) and the 10, 20, and 30 mg dronabinol conditions ($p<0.01$) compared with the placebo condition. In contrast, in the normal BIA group, neither marijuana nor dronabinol significantly affected caloric intake. This lack of effect may be accountable, however, by the fact that this group consumed approximately 200 calories more than the low BIA group under baseline conditions.

Ratings of high and good drug effect were increased by all drug treatments in both the low-BIA and normal-BIA groups, except in response to the 10 mg dose of dronabinol. The 3.9% THC marijuana increased ratings of good drug effect, drug liking and desire to smoke again compared with placebo. Ratings of sedation were increased in both groups by 10 and 30 mg dronabinol, and in the normal BIA group by the 2.8% THC marijuana. Ratings of stimulation were increased in the normal BIA group by 2.8% and 3.9% THC marijuana and by 20 mg dronabinol. Increases in ratings of forgetfulness, withdrawn, dreaming, clumsy, heavy limbs, heart pounding, jittery, and decreases in ratings of energetic, social, and talkative were reported in the normal BIA group with 30 mg dronabinol. There were no significant changes in vital signs or performance on neurocognitive measures in response to marijuana. Notably, the time course of subjective effects peaked quickly and declined thereafter for smoked marijuana, while oral dronabinol responses took longer to peak and persisted longer. Additionally, marijuana but not dronabinol produced dry mouth and thirst.

In general, AEs reported in this study were low in both drug conditions for both subject groups. In the low BIA group, nausea was reported by one subject in both the 10 and 20 mg dronabinol conditions, while an uncomfortable level of intoxication was produced by the 30 mg dose in two subjects. There were no AEs reported in this group following marijuana at any dose. In the normal BIA group, the 30 mg dose of dronabinol produced an uncomfortable level of intoxication in three subjects and headache in one subject, while the 3.9% marijuana produced diarrhea in one subject.

The authors conclude that smoked marijuana can acutely increase caloric intake in low BIA subjects without significant cognitive impairment. However, it is possible that the low degree of cognitive impairment reported in this study may reflect the development of tolerance to cannabinoids in this patient population, since all individuals had current histories of chronic marijuana use. Additional limitations in this study include not utilizing actual weight gain as a primary measure. However, the study produced positive results suggesting that marijuana should be studied further as a treatment for appetite stimulation in HIV patients.

[34] Lean muscle mass was assessed using bioelectrical impedance analysis (BIA). The low-BIA group was classified with having <90% BIA, and the normal-BIA group was classified with having >90% BIA.

A second study conducted by Haney et al. (2007) is entitled, ''Dronabinol and marijuana in HIV-positive marijuana smokers: Caloric intake, mood, and sleep''. The design of this study was nearly identical to the one conducted by this laboratory in 2005 (see above), but there was no stratification of subjects by BIA. The subjects were 10 HIV-positive patients who were maintained on two antiretroviral medications and had a history of smoking marijuana at least twice weekly for 4 weeks prior to entry into the study. On average, individuals had smoked 3 marijuana cigarettes per day, 5 times per week for 19 years.

Subjects participated in 8 sessions that tested the acute effects of 0, 5 and 10 mg dronabinol oral capsules and marijuana cigarettes with 0, 2.0% and 3.9% THC concentration by weight, using a double-dummy design (with 4 sessions involving only one active drug and 4 interspersed placebo sessions). Both drug and placebo sessions lasted for 4 days each, with active drug administration occurring 4 times per day (every 4 hours). Testing occurred in two 16-day inpatient stays. In the intervening outpatient period, subjects were allowed to smoke marijuana prior to re-entry to the study unit for the second inpatient stay.

Marijuana was administered using a standardized cued procedure: (1) ''light the cigarette'' (30 seconds), (2) ''prepare'' (5 seconds), (3) ''inhale'' (5 seconds), (4) ''hold smoke in lungs'' (10 seconds), and (5) ''exhale.'' Each subject smoked three puffs in this manner, with a 40-second interval between each puff.

Caloric intake was used as a surrogate measure for weight gain, but subjects were also weighed throughout the study (a measure which was not collected in the 2005 study by this group). Subjects received a box containing a variety of food and beverage items and were told to record consumption of these items following that day's administration of the test drug. Subjective measures included 0–100 point VAS for drug effect, good effect, bad effect, take drug again, drug liking, hungry, full, nauseated, thirsty, desire to eat. Neurocognitive measures and vital signs were monitored. Sleep was assessed using both the Nightcap sleep monitoring system and selected VAS measures related to sleep.

Both 5 and 10 mg dronabinol ($p < 0.008$) and 2.0% and 3.9% THC marijuana ($p < 0.01$) dose-dependently increased caloric intake compared with placebo. This increase was generally accomplished through increases in incidents of eating, rather than an increase in the calories consumed in each incident. Subjects also gained similar amounts of weight after the highest dose of each cannabinoid treatment: 1.2 kg (2.6 lbs) after 4 days of 10 mg dronabinol, and 1.1 kg (2.4 lbs) after 4 days of 3.9% THC marijuana. The 3.9% THC marijuana dose also increased the desire to eat and ratings of hunger.

Ratings of good drug effect, high, drug liking, and desire to smoke again were significantly increased by 10 mg dronabinol and 2.0% and 3.9% THC marijuana doses compared to placebo. Both marijuana doses increased ratings of stimulated, friendly, and self-confident. The 10 mg dose of dronabinol increased ratings of concentration impairment, and the 2.0% THC marijuana dose increased ratings of anxious. Dry mouth was induced by 10 mg dronabinol (10 mg) and 2.0% THC marijuana. There were no changes in neurocognitive performance or objective sleep measures from administration of either cannabinoid. However, 3.9% THC marijuana increased subjective ratings of sleep.

The authors conclude that both dronabinol and smoked marijuana increase caloric intake and produce weight gain in HIV-positive patients. However, it is possible that the low degree of cognitive impairment reported in this study may reflect the development of tolerance to cannabinoids in this subject population, since all individuals had current histories of chronic marijuana use. This study produced positive results suggesting that marijuana should be studied further as a treatment for appetite stimulation in HIV patients.

3.3 Spasticity in Multiple Sclerosis

Only one randomized, double-blind, placebo-controlled Phase 2 study examined the effects of smoked marijuana on spasticity in MS.

This study was conducted by Corey-Bloom et al. (2012) and is entitled, ''Smoked cannabis for spasticity in multiple sclerosis: a randomized, placebo-controlled trial''. The subjects were 30 patients with MS-associated spasticity and had moderate increase in tone (score ≥ 3 points on the modified Ashworth scale). Participants were allowed to continue other MS medications, with the exception of benzodiazepines. Eighty percent of subjects had a history of marijuana use and 33% had used marijuana within the previous year.

Subjects participated in two 3-day test sessions, with an 11 day washout period. During each test session they smoked a 4.0% THC marijuana cigarette once per day or a placebo cigarette once per day. Smoking occurred through a standardized cued-puff procedure: (1) Inhalation for 5 seconds, (2) breath-hold and exhalation for 10 seconds, (3) pause between puffs for 45 seconds. Subjects completed an average of four puffs per cigarette.

The primary outcome measure was change in spasticity on the modified Ashworth scale. Additionally, subjects were assessed using a VAS for pain, a timed walk, and cognitive tests (Paced Auditory Serial Addition Test) and AEs.

Treatment with 4.0% THC marijuana reduced subject scores on the modified Ashworth scale by an average of 2.74 points more than placebo ($p < 0.0001$) and reduced VAS pain scores compared to placebo ($p = 0.008$). Scores on the cognitive measure decreased by 8.7 points more than placebo ($p = 0.003$). However, marijuana did not affect scores for the timed walk compared to placebo. Marijuana increased rating of feeling high compared to placebo.

7 subjects did not complete the study due to adverse events (two subjects felt uncomfortably ''high'', two had dizziness and one had fatigue). Of those 7 subjects who withdrew, 5 had little or no previous experience with marijuana. When the data were re-analyzed to include these drop-out subjects, with the presumption they did not have a positive response to treatment, the effect of marijuana was still significant on spasticity.

The authors conclude that smoked marijuana had usefulness in reducing pain and spasticity associated with MS. It is concerning that marijuana-naïve subjects dropped out of the study because they were unable to tolerate the psychiatric AEs induced by marijuana. The authors suggest that future studies should examine whether different doses can result in similar beneficial effects with less cognitive impact. However, the current study produced positive results suggesting that marijuana should be studied further as an adjunct treatment for spasticity in MS patients.

3.4 Asthma

Tashkin et al. (1974) examined bronchodilation in 10 subjects with bronchial asthma in the study entitled, ''Acute Effects of Smoked Marijuana and Oral Δ^9-Tetrahydrocannabinol on Specific Airway Conductance in Asthmatic Subjects''. The study was a double-blind, placebo-controlled, crossover design. All subjects were clinically stable at the time of the study; four subjects were symptom free, and six subjects had chronic symptoms of mild to moderate severity. Subjects were tested with 0.25ml of isoproterenol HCl prior to the study to ensure they responded to bronchodilator

medications. Subjects were not allowed to take bronchodilator medication within 8 hours prior to the study. Previous experience with marijuana was not required for participation in the study, but 7 of the 10 subjects reported previous use of marijuana at a rate of less than 1 marijuana cigarette per month. No subjects reported marijuana use within 7 days of the study.

The study consisted of four test sessions with an interval of at least 48 hours between sessions. On two test sessions subjects smoked 7 mg/kg of body weight of either marijuana, with 2% THC concentration by weight, or placebo marijuana. During the other two test sessions, subjects ingested capsules with either 15 mg of synthetic THC or placebo. Marijuana was administered using a uniform smoking technique: subjects inhaled deeply for 2–4 seconds, held smoke in lungs for 15 seconds, and resumed normal breathing for approximately 5 seconds. The author did not provide a description of the number of puffs taken at any smoking session. The authors state that the smoking procedure was repeated until the cigarette was consumed, which took approximately 10 minutes.

The outcome measure used was specific airway conductance (SGaw), as calculated using measurements of thoracic gas volume (TGV) and airway resistance (Raw) using a variable-pressure body plethysmograph. Additionally, an assessment of degree of intoxication was administered only to those subjects reporting previous marijuana use. This assessment consisted of subjects rating ''how 'high' they felt'' on a scale of 0–7, 7 representing ''the 'highest' they had ever felt after smoking marijuana''.

Marijuana produced a significant increase of 33–48% in average SGaw compared to both baseline and placebo ($P < 0.05$). This significant increase in SGaw lasted for at least 2 hours after administration. The average TGV significantly decreased by 4–13% compared to baseline and placebo ($P < 0.05$). The author stated that all subjects reported feelings of intoxication after marijuana administration.

The authors conclude that marijuana produced bronchodilation in clinically stable asthmatic subjects with minimal to moderate bronchospasms. Study limitations include: inclusion of subjects with varying severity of asthmatic symptoms, use of SGaw to measure lung responses to marijuana administration, and administration of smoke to asthmatic subjects. Smoke delivers a number of harmful substances and is not an optimal delivery symptom, especially for asthmatic patients. FEV1 via spirometry is the gold standard to assess changes in lung function, pre and post asthma treatment, by pharmacotherapy. SGaw has been shown to be a valid tool in bronchoconstriction lung assessment; however, since the FEV1 method was not utilized, it is unclear whether these results would correlate if the FEV1 method had been employed.

3.5 Glaucoma

Two randomized, double-blind, placebo-controlled Phase 2 clinical studies examined smoked marijuana in glaucoma (Crawford and Merritt, 1979; Merritt et al., 1980). In both studies, intraocular pressure (IOP) was significantly reduced 30 minutes after smoking marijuana. Maximal effects occurred 60–90 minutes after smoking, with IOP returning to baseline within 3–4 hours. These two studies were included in the 1999 IOM report on the medical uses of marijuana. Because our independent analysis of these studies concurred with the conclusions from the 1999 IOM report, these studies will not be discussed in further detail in this review. No recent studies have been conducted examining the effect of inhaled marijuana on IOP in glaucoma patients. This lack of recent studies may be attributed to the conclusions made in the 1999 IOM report that while cannabinoids can reduce intraocular pressure (IOP), the therapeutic effects require high doses that produce short-lasting responses, with a high degree of AEs. This high degree of AEs means that the potential harmful effects of chronic marijuana smoking may outweigh its modest benefits in the treatment of glaucoma.

3.6 Conclusions

Of the eleven randomized, double-blind, placebo-controlled Phase 2 clinical studies that met the criteria for review (see Sections 2.2 and 2.3), ten studies administered marijuana through smoking, while one study utilized marijuana vaporization. In these eleven studies, there were five different therapeutic indications: five examined chronic neuropathic pain, two examined appetite stimulation in HIV patients, two examined glaucoma, one examined spasticity in MS, and one examined asthma.

There are limited conclusions that can be drawn from the data in these published studies evaluating marijuana for the treatment of different therapeutic indications. The analysis relied on published studies, thus information available about protocols, procedures, and results were limited to documents published and widely available in the public domain. The published studies on medical marijuana are effectively proof-of-concept studies. Proof-of-concept studies provide preliminary evidence on a proposed hypothesis regarding a drug's effect. For drugs under development, the effect often relates to a short-term clinical outcome being investigated. Proof-of-concept studies serve as the link between preclinical studies and dose ranging clinical studies. Therefore, proof-of-concept studies are not sufficient to demonstrate efficacy of a drug because they provide only preliminary information about the effects of a drug. Although these studies do not provide evidence that marijuana is effective in treating a specific, recognized disorder, these studies do support future larger well-controlled studies to assess the safety and efficacy of marijuana for a specific medical indication. Overall, the conclusions below are preliminary, based on very limited evidence.

3.6.1 Conclusions for Chronic Neuropathic Pain

In subjects with chronic neuropathic pain who are refractory to other pain treatments, five proof-of-concept studies produced positive results regarding the use of smoked marijuana for analgesia. However, the subjects in these studies continued to use their current analgesic drug regime, and thus no conclusions can be made regarding the potential efficacy of marijuana for neuropathic pain in patients not taking other analgesic drugs. Subjects also had numerous forms of neuropathic pain, making it difficult to identify whether a specific set of symptoms might be more responsive to the effects of marijuana. It is especially concerning that some marijuana-naïve subjects had intolerable psychiatric responses to marijuana exposure at analgesic doses.

3.6.2 Conclusions for Appetite Stimulation in HIV

In subjects who were HIV-positive, two proof-of-concept studies produced positive results with the use of both dronabinol and smoked marijuana to increase caloric intake and produce weight gain in HIV-positive patients. However, the amount of THC in the marijuana tested in these studies is four times greater than the dose of dronabinol typically tested for appetite stimulation (10 mg vs. 2.5 mg; Haney et al., 2005). Thus, it is possible that the low degree of AEs reported in this study may reflect the development of tolerance to cannabinoids in this patient population, since all individuals had current histories of chronic marijuana use. Thus, individuals with little prior

exposure to marijuana may not respond similarly and may not be able to tolerate sufficient marijuana to produce appetite stimulation.

3.6.3 Conclusions for Spasticity in MS

In subjects with MS, a proof of concept study produced positive results using smoked marijuana as a treatment for pain and symptoms associated with treatment-resistant spasticity. The subjects in this study continued to take their current medication regiment, and thus no conclusions can be made regarding the potential efficacy of marijuana when taken on its own. It is also concerning that marijuana-naïve subjects dropped out of the study because they were unable to tolerate the psychiatric AEs induced by marijuana. The authors suggest that future studies should examine whether different doses can result in similar beneficial effects with less cognitive impact.

3.6.4 Conclusions for Asthma

In subjects with clinically stable asthma, a proof of concept study produced positive results of smoked marijuana producing bronchodilation. However, in this study marijuana was administered at rest and not while experiencing bronchospasms. Additionally, the administration of marijuana through smoking introduces harmful and irritating substances to the subject, which is undesirable especially in asthmatic patients. Thus the results suggest marijuana may have bronchodilator effects, but it may also have undesirable adverse effects in subjects with asthma.

3.6.5 Conclusions for Glaucoma

As noted in Sections 3.5, the two studies that evaluated smoked marijuana for glaucoma were conducted decades ago, and they have been thoroughly evaluated in the 1999 IOM report. The 1999 IOM report concludes that while the studies with marijuana showed positive results for reduction in IOP, the effect is short-lasting, requires a high dose, and is associated with many AEs. Thus, the potential harmful effects may outweigh any modest benefit of marijuana for this condition. We agree with the conclusions drawn in the 1999 IOM report.

3.7 Design Challenges for Future Studies

The positive results reported by the studies discussed in this review support the conduct of more rigorous studies in the future. This section discusses methodological challenges that have occurred in clinical studies with smoked marijuana. These design issues should be addressed when larger-scale clinical studies are conducted to ensure that valid scientific data are generated in studies evaluating marijuana's safety and efficacy for a particular therapeutic use.

3.7.1 Sample Size

The ability for results from a clinical study to be generalized to a broader population is reliant on having a sufficiently large study sample size. However, as noted above, all of the 11 studies reviewed in this document were early Phase 2 proof of concept studies for efficacy and safety. Thus, the sample sizes used in these studies were inherently small, ranging from 10 subjects per treatment group (Tashkin et al., 1974; Haney et al., 2007) to 25 subjects per treatment group (Abrams et al., 2007). These sample sizes are statistically inadequate to support a showing of safety or efficacy. FDA's recommendations about sample sizes for clinical trials can be found in the *Guidance for Industry: E9 Statistical Principles for Clinical Trials (1998).*[35] For example, ''the number of subjects in a clinical trial should always be large enough to provide a reliable answer to the questions addressed. This number is usually determined by the primary objective of the trial. The method by which the sample size is calculated should be given in the protocol, together with the estimates of any quantities used in the calculations (such as variances, mean values, response rates, event rates, difference to be detected).'' (pg. 21). Other clinical FDA *Guidance for Industry* [36] may also contain recommendations regarding the appropriate number of subjects that should be investigated for a specific medical indication.

3.7.2 Marijuana Dose Standardization

Dose standardization is critical for any clinical study in order to ensure that each subject receives a consistent exposure to the test drug. The *Guidance for Industry: Botanical Drug Products* (2004) [37] provides specific information on the development of botanical drug products. Specifically, this guidance includes information about the need for well-characterized and consistent chemistry for the botanical plant product and for consistent and reliable dosing. Specifically for marijuana studies, dose standardization is important because if marijuana leads to plasma levels of cannabinoids that are significantly different between subjects, this variation may lead to differences in therapeutic responsivity or in the prevalence of psychiatric AEs.

In most marijuana studies discussed in this review, investigators use a standardized cued smoking procedure. In this procedure, a subject is instructed to inhale marijuana smoke for 5 seconds, hold the smoke in the lungs for 10 seconds, exhale and breathe normally for 40 seconds. This process is repeated to obtain the desired dose of the drug. However, this procedure may not lead to equivalent exposure to marijuana and its constituent cannabinoids, based on several factors:

- Intentional or unintentional differences in the depth of inhalation may change the amount of smoke in the subject's lungs.
- Smoking results in loss from side stream smoke, such that the entire dose is not delivered to the subject.
- There may be differences in THC concentration along the length of a marijuana cigarette. According to Tashkin et al. (1991), the area of the cigarette closest to the mouth tends to accumulate a higher concentration of THC, but this section of the cigarette is not smoked during a study.

For example, Wilsey et al. (2008) used this standardized smoking procedure. The reported mean (range) of marijuana cigarettes consumed was 550 mg (200–830mg) for the low strength marijuana (3.5% THC) and 490 mg (270–870mg) for the high strength marijuana (7% THC). This wide range of amounts of marijuana cigarette smoked by the individual subjects, even with standardized smoking procedure and controlled number of puffs, supports the issues with delivering consistent doses with smoke marijuana.

In other marijuana studies that do not use a cued smoking procedure, subjects are simply told to smoke the marijuana cigarette over a specific amount of time (usually 10 minutes) without further instruction (Crawford and Merritt, 1979; Merritt et al., 1980; Ellis et al., 2009). The use of a nonstandardized procedure may lead to non-equivalent exposures to marijuana and its constituent cannabinoids between subjects because of additional factors that are not listed above, such as:

- Differences in absorption and drug response if subjects (especially

[35] The *Guidance for Industry: E9 Statistical Principles for Clinical Trials* can be found at: *www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/ucm073137.pdf.*

[36] Other Guidances for Industry can be found at: *www.fda.gov/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/ucm064981.htm.*

[37] The *Guidance for Industry: Botanical Drug Products* can be found at: *http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/ucm070491.pdf.*

marijuana-naïve ones) are not instructed to hold marijuana smoke in their lungs for a certain period of time.

- Prolonged periods between puffs may increase loss to side stream smoke.
- Subjects may attempt to smoke the marijuana cigarette in the way they would smoke a tobacco cigarette, which relies primarily on short, shallow puffs.

In both standardized and non-standardized smoking procedures, subjects may seek to control the dose of THC through self-titration (Crawford and Merritt, 1979; Merritt et al., 1980; Tashkin et al., 1974; Abrams et al., 2007; Ellis et al., 2009). Self-titration involves an individual moderating the amount of marijuana smoke inhaled over time in order to obtain a preferred level of psychoactive or clinical response. The ability of an individual to self-titrate by smoking is one reason given by advocates of ''medical marijuana'' in support of smoking of marijuana rather than through its ingestion via edibles. However, for research purposes, self-titration interferes with the ability to maintain consistent dosing levels between subjects, and thus, valid comparisons between study groups.

All of these factors can make the exact dose of cannabinoids received by a subject in a marijuana study difficult to determine with accuracy. Testing whether plasma levels of THC or other cannabinoids are similar between subjects following the smoking procedure would establish whether the procedure is producing appropriate results. Additionally, studies could be conducted to determine if vaporization can be used to deliver consistent doses of cannabinoids from marijuana plant material. Specifically, vaporization devices that involve the collection of vapors in an enclosed bag or chamber may help with delivery of consistent doses of marijuana. Thus, more information could be collected on whether vaporization is comparable to or different than smoking in terms of producing similar plasma levels of THC in subjects using identical marijuana plant material.

3.7.3 Acute vs. Chronic Therapeutic Marijuana Use

The studies that were reviewed administered the drug for short durations lasting no longer than 5 days (Abrams et al., 2007; Ellis et al., 2009; Ware et al., 2010). Thus all studies examined the short-term effect of marijuana administration for therapeutic purposes. However, many of the medical conditions that have been studied are persistent or expected to last the rest of a patient's life. Therefore, data on chronic exposure to smoked marijuana in clinical studies is needed. In this way, more information will be available regarding whether tolerance, physical dependence, or specific adverse events develop over the course of time with continuing use of therapeutic marijuana.

3.7.4 Smoking as a Route of Administration

As has been pointed out by the IOM and other groups, smoking is not an optimum route of administration for marijuana-derived therapeutic drug products, primarily because introducing the smoke from a burnt botanical substance into the lungs of individuals with a disease state is not recommended when their bodies may be physically compromised. The 1999 IOM report on medicinal uses of marijuana noted that alternative delivery methods offering the same ability of dose titration as smoking marijuana will be beneficial and may limit some of the possible long-term health consequences of smoking marijuana. The primary alternative to smoked marijuana is vaporization, which can reduce exposure to combusted plant material containing cannabinoids. The only study to use vaporization as the delivery method was Wilsey et al. (2013). The results from Wilsey et al. (2013) showed a similar effect of decreased pain as seen in the other studies using smoking as the delivery method (Ware et al., 2010; Wilsey et al., 2008). This similar effect of decrease pain supports vaporization as a possibly viable route to administer marijuana in research, while potentially limiting the risks associated with smoking.

3.7.5 Difficulty in Blinding of Drug Conditions

An adequate and well-controlled clinical study involves double-blinding, where both the subjects and the investigators are unable to tell the difference between the test treatments (typically consisting of at least a test drug and placebo) when they are administered. All of the studies reviewed in this document administered study treatments under double-blind conditions and thus were considered to have an appropriate study design.

However, even under the most rigorous experimental conditions, blinding can be difficult in studies with smoked marijuana because the rapid onset of psychoactive effects readily distinguishes active from placebo marijuana. The presence of psychoactive effects also occurs with other drugs. However, most other drugs have a similar psychoactive effect with substances with similar mechanisms of actions. These substances can be used as positive controls to help maintain blinding to the active drug being tested. Marijuana on the other hand, has a unique set of psychoactive effects which makes the use of appropriate positive controls difficult (Barrett et al., 1995). However, two studies did use Dronabinol as a positive control drug to help maintain blinding (Haney et al., 2005; Haney et al., 2007).

When blinding is done using only placebo marijuana, the ability to distinguish active from placebo marijuana may lead to expectation bias and an alteration in perceived responsivity to the therapeutic outcome measures. With marijuana-experienced subjects, for example, there may be an early recognition of the more subtle cannabinoid effects that can serve as a harbinger of stronger effects, which is less likely to occur with marijuana-naïve subjects. To reduce this possibility, investigators have tested doses of marijuana other than the one they were interested in experimentally to maintain the blind (Ware et al., 2010).

Blinding can also be compromised by differences in the appearance of marijuana plant material based on THC concentration. Marijuana with higher concentrations of THC tends to be heavier and seemingly darker, with more ''tar-like'' substance. Subjects who have experience with marijuana have reported being able to identify marijuana from placebo cigarettes by sight alone when the plant material in a cigarette was visible (Tashkin et al., 1974; Ware et al., 2010). Thus, to maintain a double-blind design, many studies obscure the appearance of plant material by closing both ends of the marijuana cigarette and placing it in in an opaque plastic tube.

While none of these methods to secure blinding may be completely effective, it is important to reduce bias as much as possible to produce consistent results between subjects under the same experimental conditions.

3.7.6 Prior Marijuana Experience

Marijuana use histories in test subjects may influence outcomes, related to both therapeutic responsivity and psychiatric AEs. Marijuana-naïve subjects may also experience a marijuana drug product as so aversive that they would not want to use the drug product. Thus, subjects' prior experience with marijuana may affect the conduct and results of studies.

Most of the studies reviewed in this document required that subjects have a history of marijuana use (see tables in Appendix that describe specific

requirements for each study). However, in studies published in the scientific literature, the full inclusion criteria with regard to specific amount of experience with marijuana may not be provided. For those studies that do provide inclusion criteria, acceptable experience with marijuana can range from once in a lifetime to use multiple times a day.

The varying histories of use might affect everything from scores on adverse event measures, safety measures, or efficacy measures. Additionally, varying amounts of experience can impact cognitive effect measures assessed during acute administration studies. For instance, Schreiner and Dunn (2012) contend cognitive deficits in heavy marijuana users continue for approximately 28 days after cessation of smoking. Studies requiring less than a month of abstinence prior to the study may still see residual effects of heavy use at baseline and after placebo marijuana administration, thus showing no significant effects on cognitive measures. However, these same measurements in occasional or naïve marijuana users may demonstrate a significant effect after acute marijuana administration. Therefore, the amount of experience and the duration of abstinence of marijuana use are important to keep in mind when analyzing results for cognitive and other adverse event measures. Lastly, a study population with previous experience with marijuana may underreport the incidence and severity of adverse events. Because most studies used subjects with prior marijuana experience, we are limited in our ability to generalize the results, especially for safety measures, to marijuana naïve populations.

Five of 11 studies reviewed in this document included both marijuana-naïve and marijuana-experienced subjects (Corey-Bloom et al., 2012; Ellis et al., 2009; Ware et al., 2010; Merritt et al., 1980; Tashkin et al., 1974). Since the number of marijuana-naïve subjects in these studies was low, it was not possible to conduct a separate analysis compared to experienced users. However, systematically evaluating the effect of marijuana experience on study outcomes is important, since many patients who might use a marijuana product for a therapeutic use will be marijuana-naïve.

Research shows that marijuana-experienced subjects have a higher ability to tolerate stronger doses of oral dronabinol than marijuana-naïve subjects (Haney et al., 2005). Possibly, this increased tolerance is also the case when subjects smoke or vaporize marijuana. Thus, studies could be conducted that investigate the role of marijuana experience in determining tolerability of and responses to a variety of THC concentrations in marijuana.

3.7.7 Inclusion and Exclusion Criteria

For safety reasons, all clinical studies have inclusion and exclusion criteria that restrict the participation of individuals with certain medical conditions. For studies that test marijuana, these criteria may be based on risks associated with exposure to smoked material and the effects of THC. Thus, most studies investigating marijuana require that subjects qualify for the study based on restrictive symptom criteria such that individuals do not have other symptoms that may be known to interact poorly with cannabinoids.

Similarly, clinical studies with marijuana typically exclude individuals with cardiac or pulmonary problems, as well as psychiatric disorders. These exclusion criteria are based on the well-known effects of marijuana smoke to produce increases in heart rate and blood pressure, lung irritation, and the exacerbation of psychiatric disturbances in vulnerable individuals. Although these criteria are medically reasonable for research protocols, it is likely that future marijuana products will be used in patients who have cardiac, pulmonary or psychiatric conditions. Thus, individuals with these conditions should be evaluated, whenever possible.

Additionally, all studies reviewed in this document allowed the subjects to continue taking their current regimen of medications. Thus all results evaluated marijuana as an adjunct treatment for each therapeutic indication.

3.7.8 Number of Female Subjects

A common problem in clinical research is the limited number of females who participate in the studies. This problem is present in the 11 studies reviewed in this document, in which one study did not include any female subjects (Ellis et al., 2009), and three studies had a low percentage of female subjects (Abrams et al., 2007; Haney et al., 2005; Haney et al., 2007). However, each of these four studies investigated an HIV-positive patient population, where there may have been a larger male population pool from which to recruit compared to females.

Since there is some evidence that the density of CB1 receptors in the brain may vary between males and females (Crane et al., 2012), there may be differing therapeutic or subjective responsivity to marijuana. Studies using a study population that is equal parts male and female may show whether and how the effects of marijuana differ between male and female subjects.

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Appendix (Tables)

Table 1: Randomized, controlled, double-blind trials examining smoked marijuana in treatment of neuropathic pain

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Type *Duration*	Primary Outcome Measure	Primary Outcome Measure Results	Adverse events/AEs
Abrams et al. (2007) *HIV-Sensory Neuropathy; Neuropathic Pain*	Marijuana Group: 25/27 22 males 5 females Placebo Group: 25/28 26 males 2 females Inclusion Criteria: -documented HIV -documented HIV-SN -pain score ≥30mm VAS -prior marijuana use of six or more times in lifetime Previous Marijuana Experience: -marijuana group: 21 current users -placebo group: 19 current users Exclusion Criteria: -substance abuse (including tobacco) -family history of neuropathy due to causes not HIV related -use of isoniazid,	NIDA marijuana, smoked 0%, 3.65% THC Smoking Procedure: -signal light cued smoking of marijuana cigarette with each puff consisting of: 1) 5s inhale smoke, 2) 10s hold smoke in lungs 3) 40s exhale and breath normally 4) repeat procedure for desired number of puffs # of puffs not specified, only specified that subjects smoked the entire marijuana/placebo cigarette On 1st and last day of intervention period BID. For all other days TID	Parallel Group *5-day treatment period*	VAS daily pain score	-52% of the marijuana group showed >30% decrease in pain score compared to 24% of placebo group. -Marijuana group had significantly greater reduction in daily pain score than placebo group. -NNT=3.6	-Rating for adverse events of anxiety, sedation, disorientation, confusion, and dizziness were significantly higher in the marijuana group compared to placebo group. -Marijuana and placebo groups showed a reduction in total mood disturbance on POMS. AEs: -1 grade 3 dizziness in marijuana group -2 grade 3 anxiety, 1 in each group.

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Type *Duration*	Primary Outcome Measure	Primary Outcome Measure Results	Adverse events/AEs
	dapsone, or metronidazole within 8 weeks of enrollment					
Ellis et al. (2009) *HIV Sensory Neuropathy; Neuropathic Pain*	28/34 28 males Inclusion Criteria: -documented HIV -documented neuropathic pain refractory to ≥2 analgesics -pain score ≥5 on pain intensity subscale of DDS Previous Marijuana Experience: -27 subjects had previous experience -63% of subjects had no exposure for >1 year before study Exclusion Criteria: -current DSM-IV substance abuse disorder -lifetime history of dependence on marijuana -previous psychosis with or intolerance to cannabinoids -concurrent use of approved cannabinoid medications -positive UDS for	NIDA marijuana, smoked 0%, 1%, 2%, 4%, 6%, 8% THC Smoking Procedures: - Verbally cued smoking of marijuana cigarette with each puff consisting of: 1) 5s inhale smoke, 2) 10s hold smoke in lungs 3) 40s exhale and breath normally 4) repeat procedure for desired number of puffs -unknown number of puffs QID	Crossover Dose-titration (on 1st day) *2, 5-day treatment phase, with 2-week washout period*	Pain magnitude on DDS	-Pain reduction was significantly greater after marijuana compared to placebo. -NNT=3.5	-Mood disturbance, quality of life, and psychical disability improved for both marijuana and placebo. -Moderate to severe adverse events were more common with marijuana than placebo. -HIV disease parameters did not differ for marijuana or placebo. -Adverse events included: concentration difficulties, fatigue, sleepiness or sedation, increased duration of sleep, reduced salivation, and thirst. These adverse events were more frequent in marijuana compared to placebo. Withdrawals for drug related reasons: -1 cannabis-naïve subject had acute cannabis-induced psychosis -1 subjects developed an intractable smoking-related cough during marijuana administration

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Type *Duration*	Primary Outcome Measure	Primary Outcome Measure Results	Adverse events/AEs
	cannabinoids during wash-in week -serious medical conditions that affect safety -alcohol or drug dependence within 12 months of study					
Wilsey et al. (2008) *Neuropathic pain; Various Causes*	32/38 20 males 18 females Inclusion Criteria: -CRPS type I, spinal cord injury, peripheral neuropathy, or nerve damage -previous marijuana use Previous Marijuana Experience: -median (range) time from previous exposure: 1.7 years (31 days to 30 years) -median (range) exposure duration: 2 years (1 day to 22 years). Exclusion Criteria: -no marijuana or cannabinoid medication use for 30 days prior to study; confirmed by UDS	NIDA marijuana, smoked 0%, 3.55%, 7% THC Smoking Procedure: Verbally cued smoking of marijuana cigarette with each puff consisting of: 1) 5s inhale smoke, 2) 10s hold smoke in lungs 3) 40s exhale and breath normally 4) repeat procedure for desired number of puffs Cumulative dosing procedure: -escalate the number of puffs from 2 to 4 puffs over 3 smoking sessions with 1 hour between sessions	Crossover *3, 6-hour sessions, with 3-day between sessions*	VAS spontaneous pain intensity	-A significant decrease in pain intensity for both strengths of marijuana compared to placebo	-7% THC marijuana significantly decreased functioning on neurocognitive measures compared to placebo. -Subjective effects were greater for 7% THC marijuana than 3.55% THC marijuana with significantly more ratings of good drug effect, bad drug effect, feeling high, feeling stoned, impaired, sedation, confusion, and hunger compared to placebo.

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Type *Duration*	Primary Outcome Measure	Primary Outcome Measure Results	Adverse events/AEs
	-severe depression -history of schizophrenia or bipolar depression -uncontrolled hypertension, cardiovascular disease, and pulmonary disease -active substance abuse	TID				
Ware et al. (2010) *Post-traumatic or postsurgical neuropathic pain*	21/23 11 males 12 females Inclusion Criteria: -neuropathic pain for ≥ 3 months caused by trauma or surgery -allodynia and hyperalgesia -pain score >4cm VAS -no marijuana use for 1 year prior to study -stable analgesic regimen -normal liver and renal function Previous Marijuana Experience: -18 subjects had used marijuana before Exclusion Criteria: -pain due to cancer or nociceptive causes -significant cardiac or	NIDA placebo: Prairie Plant System Inc. (Canada) marijuana, smoked 0%, 2.5%, 6%, 9.4% THC (25 mg of marijuana/placebo plant material was placed in opaque gelatin capsules) Smoking Procedures: -1) Break one capsule open and tip content into the bowl of a titanium pipe 2) light marijuana material 3) 5s inhale smoke 4) 10s hold smoke in lungs 5) Exhale 1 puff burned all 25 mg of plant material	Crossover *4, 5-day out-patient* treatment phase, with 9-day washout periods*	Pain intensity on 11-item NRS	-Average daily pain intensity was significantly lower after 9.4% THC compared to placebo.	-Anxiety and depression were significantly improved with 9.4% THC compared to placebo. -No significant difference between placebo and 9.4% THC for subjective effects. AEs: -248 mild AEs were reported -6 moderate AEs were reported: 2 fall, 1 increased pain, 1 numbness, 1 drowsiness, 1 pneumonia -Most frequently reported drug-related AEs for 9.4% THC: headache, dry eyes, burning sensation, dizziness, numbness, and cough. Withdrawals for drug related reason: -1 subject had increased pain after 6% THC administration -1 subject tested positive for cannabinoids in urine test during placebo treatment

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Type *Duration*	Primary Outcome Measure	Primary Outcome Measure Results	Adverse events/AEs
	pulmonary disease -current substance abuse or dependence (including marijuana) -history of psychotic disorders -current suicidal ideations	TID Intermediate doses were used to help maintain blinding				
Wilsey et al. (2013) *Neuropathic Pain; Various Causes*	36/39 28 males 11 females Inclusion Criteria: -CRPS type 1, thalamic pain, spinal cord injury, peripheral neuropathy, radiculopathy, or nerve injury -previous marijuana use Previous Marijuana Experience: - median (range) time from last exposure prior to screening: 9.6 years (1 day to 45 years) -16 current marijuana users and 23 past users -# smoked daily: 6 current users, 5 past users -# used approx. once every 2 weeks: 8 current users, 6 past users -# used once every 4 weeks or less: 2 current	NIDA marijuana, vaporized 0%, 1.29%, 3.53% THC Smoking Procedures: - Verbally cued inhalation of vaporized material in the balloon with each puff consisting of: 1) 5s inhale vapors, 2) 10s hold vapors in lungs 3) 40s exhale and breath normally 4) repeat procedure for desired number of puffs. BID Cumulative & Flexible Dosing: -1st drug admin. consisted of 4 puffs from balloon.	Crossover *3, 6-hour sessions, with at least 3 days between sessions*	VAS spontaneous pain intensity	-Number of subjects that showed a 30% reduction in pain intensity was significantly greater for both strengths of marijuana compared to placebo. -Both strengths of marijuana showed a similar significant decrease in pain compared to placebo. -NNT=3.2 for 1.29% THC marijuana vs. placebo -NNT=2.9 for 3.53% THC marijuana vs. placebo.	-Scores for feeling stoned, feeling high, like the drug effect, feeling sedated, and feeling confused were significantly greater for 3.53% THC marijuana compared to 1.29% THC marijuana, and for both strengths of marijuana compared to placebo. -Scores for feeling drunk and feeling impaired are significantly greater in both strengths of marijuana compared to placebo. -Scores for desired more of the drug were significantly greater for 1.29% THC marijuana compared to placebo, with no significant difference seen for 3.53% THC marijuana. -3.53% THC marijuana had significantly worse performance than 1.29% THC marijuana for learning and memory. -Both strengths of marijuana significantly reduced scores on attention compared to placebo.

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Type *Duration*	Primary Outcome Measure	Primary Outcome Measure Results	Adverse events/AEs
	users, 12 past users Exclusion Criteria: -no marijuana or cannabinoid medication use for 30 days prior to study; confirmed by UDS -severe depression -suicidal ideations -diagnoses of serious mental illness -uncontrolled hypertension, cardiovascular disease, or chronic pulmonary disease -active substance abuse	-Followed 2 hours later by 2nd drug admin. -2nd drug admin. consisted of 4 to 8 puffs from balloon; number of puffs taken was left up to the subject so they could self-titrate to their target does, which balanced desired response and tolerance levels.				

*Out-patient; subjects were given enough doses of marijuana/placebo to last the 5-day treatment phase, and then were sent home for the remainder of the treatment phase. AE=Adverse Event; BID=drug administered two times per day; CRPS=complex regional pain syndrome; DDS=Descriptor Differential Scale; NIDA=National Institute of Drug Abuse; NNT=Number Needed to Treat; NRS=Numeric Rating Scale; QID=drug administered four times per day; THC=delta-9-tetrahydrocannbinol; TID=drug administered three times per day; UDS=urine drug screen; VAS=Visual Analog Scale.

Table 2: Randomized, controlled, double-blind trials examining smoked marijuana in treatment of appetite stimulation in HIV/AIDS

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Type *Duration*	Primary Outcome Measure	Results (summary)	Adverse events/AEs
Haney et al. (2005) *HIV+ with either normal muscle mass (Normal-BIA) or clinically significant loss of muscle mass (Low-BIA)*	Low-BIA: 15/17 12 males 3 females Normal-BIA: 15/18 15 males Inclusion Criteria: -21-50 years of age -prescribed at least 2 antiretroviral medications -currently under the care of a physician for HIV management -medically and psychiatrically stable -smoke marijuana ≥ 2x/week for past 4 weeks Previous Marijuana Experience: -mean (SD) # of days/week of marijuana use: Low-BIA= 6 (2); Normal-BIA=5 (2) -mean (SD) # marijuana cigarettes/day: Low-BIA=3 (2); Normal-BIA=3 (1) -mean (SD) years of marijuana use: Low-BIA=12.2 (8.3);	NIDA marijuana, smoked 0%, 1.8%, 2.8%, 3.9% THC Dronabinol, oral 0, 10, 20, 30mg Double-dummy drug admin. Procedures: -only 1 active dose per session -one dronabinol/placebo capsule followed 1 hour later by marijuana/placebo smoking Smoking Procedures: Verbally cued smoking of marijuana cigarette with each puff consisting of: 1) 5s inhale smoke, 2) 10s hold smoke in lungs 3) 40s exhale and breath normally	Crossover *8, 7-hour session, with at least 1 day between sessions*	No primary outcome measure is specified Related outcome measure was caloric intake	-In Low-BIA all dronabinol doses and 1.8% and 3.9% THC marijuana significantly increased caloric intake compared with placebo.	-Ratings of high and good drug effect were significantly increased for all strengths of marijuana and all doses of dronabinol except 10mg dronabinol. -3.9% THC significantly increased ratings of dry mouth and thirsty compared to placebo. -Low-BIA group showed no significant adverse event ratings, and in the normal-BIA group the only significant adverse events in response to marijuana included: diarrhea after 3.9% THC marijuana -Dronabinol had more incidences of adverse events at all doses compared to marijuana.

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Type *Duration*	Primary Outcome Measure	Results (summary)	Adverse events/AEs
	Normal-BIA=10.8 (2.6) Exclusion Criteria: -diagnosis of nutritional malabsorption, major depression, dementia, chronic diarrhea, weakness, fever, significant pulmonary disease -an opportunistic infection within past 3 months -obesity -use of steroids within past 3 weeks -drug dependence (excluding marijuana or nicotine)	4) repeat for 3 puffs per smoking session QD				
Haney et al. (2007) *HIV+*	10 9 males 1 female Inclusion Criteria: -21-50 years of age -taking ≥ 2 antiretroviral medications -under the care of a physician for HIV management -medically and psychiatrically stable -smoke marijuana ≥	NIDA marijuana, smoked 0%, 2%, 3.9% THC Dronabinol, oral 0, 5, 10mg Double-dummy drug admin. Procedures: -only 1 active dose per session -one dronabinol/placebo	Crossover *2, 16-day treatment phases, with 5-10 days between phases* *Each 16-day treatment phase consisted of 2, 4-day active drug*	No primary outcome measure is specified Related outcome measures were Caloric Intake & Body Weight	-Both strengths of marijuana significantly increased caloric intake compared to placebo. -3.9% THC marijuana significantly increased body weight compared to placebo.	-Both strengths of marijuana significantly increased ratings of: good drug effect, high, mellow, stimulate, friendly, and self-confident. Only 2% THC marijuana significantly increased ratings of anxious. -Both strengths of marijuana significantly increased subjective measures for satisfied sleep and estimated time of sleep.

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Type *Duration*	Primary Outcome Measure	Results (summary)	Adverse events/AEs
	2x/week for the past 4 weeks Previous Marijuana Experience: -mean (SD) # of days/week of marijuana use: 4.6 (0.6) -mean (SD) # marijuana cigarettes/day: 3.2 (0.8) -mean (SD) years of marijuana use: 18.6 (3.3) Exclusion Criteria: -diagnosis of nutritional malabsorption, major depression, dementia, chronic diarrhea, weakness, fever, significant pulmonary disease -an opportunistic infection within past 3 months -obesity -use of steroids within past 3 weeks -drug dependence (excluding marijuana or nicotine)	capsule followed 1 hour later by marijuana/placebo smoking Smoking Procedures: Light cued smoking of marijuana cigarette with each puff consisting of: 1) 5s inhale smoke, 2) 10s hold smoke in lungs 3) 40s exhale and breath normally 4) repeat for 3 puffs per smoking session QID	*period with 4-day placebo period between active drug periods.*			

AE= Adverse Event; BIA=Bioelectric Impedance Analysis; NIDA=National Institute of Drug Abuse; QD=drug administered one time per day; QID=drug administered four times per day; THC=delta-9-tetrahydrocannbinol

Table 3: Randomized, controlled, double-blind trails examining smoked marijuana in treatment of spasticity in Multiple Sclerosis

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Type *Duration*	Primary Outcome Measure	Primary Outcome Measure Results	Adverse events/AEs
Corey-Bloom et al. (2012) *Multiple Sclerosis; Spasticity*	30/37 11 males 19 females Inclusion Criteria: -documented MS -spasticity -moderate increase in tone (score ≥ 3 on modified Ashworth scale Previous Marijuana Experience: -24 subjects had previous exposure to marijuana -10 subjects used marijuana within the year Exclusion Criteria: -no marijuana smoking for ≤1 month prior to screening -psychiatric disorder (other than depression) -history of substance use -substantial neurological disease other than MS -severe or unstable	NIDA marijuana, smoked 0%, 4% THC Smoking Procedure: smoking of marijuana cigarette with each puff consisting of: 1) 5s inhale smoke, 2) 10s hold smoke in lungs 3) 45s exhale and breath normally 4) repeat for an average of 4 puffs per smoking session QD	Crossover *2, 3-day treatment periods, with 11 day washout period*	Spasticity on the Modified Ashworth Scale	-Smoking marijuana significantly reduced spasticity scores compared to placebo	-Marijuana reduced scores on cognitive measure compared to placebo. -Marijuana significantly increased perceptions of "highness" compared to placebo Withdrawals for drug-related reasons: -2 subjects felt uncomfortably high -2 dizziness -1 fatigue

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Type *Duration*	Primary Outcome Measure	Primary Outcome Measure Results	Adverse events/AEs
	medical illnesses -known pulmonary disorders -using high dose narcotic medication for pain -using benzodiazepines to control spasticity					

AE= Adverse Event; MS= Multiple Sclerosis; NIDA=National Institute of Drug Abuse; QD=drug administered one time per day; THC=delta-9-tetrahydrocannbinol

Table 4: Randomized, controlled, double-blind trails examining smoked marijuana in treatment of intraocular pressure in Glaucoma

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Type *Duration*	Primary Outcome Measure	Results (summary)	Adverse events/AEs
Crawford & Merritt (1979) *Hypertensive and Normotensive Glaucoma*	HT group: 8 4 males 4 females NT group: 8 4 males 4 females Inclusion Criteria: -documented glaucoma Previous Marijuana Experience: -all were marijuana naïve Exclusion Criteria: -coronary artery disease	NIDA marijuana, smoked 0%, 2.8% THC Smoking Procedure: -instructed to inhale 20 times deeply and retain smoke in lungs -smoke marijuana/placebo cigarette in 5 minutes QD	Crossover *4, 1-day sessions, no time between sessions*	No primary outcome measure is specified Related outcome measure was IOP	-Marijuana decreased IOP by 37-44% from baseline. -The maximal decrease in IOP was significantly greater in HT (-14mmHg) than NT (-9mmHg) after marijuana	-Placebo marijuana increased heart rate for 10 minutes in both groups. -The maximal increase in heart rate was significantly greater in NT than HT after marijuana. -The maximal decrease in blood pressure was significantly greater in HT than NT after marijuana.
Merritt et al. (1980) *Glaucoma*	18 12 males 6 females (31 glaucoma eyes, analyzed results for each eye) Inclusion Criteria: -documented glaucoma Previous Marijuana Experience: -9 subjects had used marijuana at least once Exclusion Criteria:	NIDA marijuana, smoked 0%, 2% THC Smoking Procedure: -None described -smoked 1 marijuana/placebo cigarette over 10-20 minutes QD	Crossover *2, 1-day sessions*	No primary outcome measure is specified Related outcome measure was IOP	-Marijuana significantly decreased IOP compared to placebo	-Marijuana significantly increased heart rate compared to placebo -Blood pressure significantly decreased after marijuana -All subjects experienced hunger, thirst, euphoria, drowsy, and feeling cold -Observed adverse events were greater in marijuana naïve subjects than in subjects with prior marijuana experience. AEs: -5 subjects postural hypotension

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Type *Duration*	Primary Outcome Measure	Results (summary)	Adverse events/AEs
	-cardiac, neurological, and psychiatric dysfunction					-8 subjects anxiety with tachycardia and palpitations

AE=Adverse Event; HT=Hypertensive; IOP=Intraocular pressure; NIDA=National Institute of Drug Abuse; NT=Normotensive; QD=drug administered one time per day; THC=delta-9-tetrahydrocannbinol

Table 5: Randomized, controlled, double-blind trails examining smoked marijuana in treatment of asthma

Author & Date *Indication*	Subjects (n) completed/randomized Subject characteristics	Drugs Admin. Methods	Study Design *Duration*	Primary Outcome Measure	Results (summary)	Adverse events/AEs
Tashkin et al. (1974) *Bronchial Asthma*	10 5 males 5 females Inclusion Criteria: -diagnosis of bronchial asthma -asthma relieved by bronchodilator medication -clinically stable Previous Marijuana Experience: -7 subjects had previous exposure to marijuana -amount of exposure <1 cigarette/month Exclusion Criteria: -no marijuana use <7 days of study -psychiatric illness	NIMH (NIDA) marijuana, smoked 0%, 2% THC Dronabinol, oral 0, 15mg Dosing is 7mg/kg of body weight of plant material Smoking Procedure: smoking of marijuana cigarette with each puff consisting of: 1) 2-4s deep inhale smoke, 2) 15s hold smoke in lungs 3) 5s exhale and breath normally 4) repeat till entire cigarette is smoked QD	Crossover *4, 1-day sessions, with at least 48 hours between sessions*	No primary outcome measure is specified Related outcome measure was sGaw	-Marijuana significantly increased sGaw (33-48%) compared to placebo and baseline	-Marijuana initially significantly increased pulse rate compared to placebo, and then at 90 minutes pulse rate was significantly decreased compared to baseline. -All subjects felt intoxicated after marijuana.

AE= Adverse Event; NIDA=National Institute of Drug Abuse; QD=drug administered one time per day; sGaw=Specific Airway Conductance; THC=delta-9-tetrahydrocannbinol

U.S. Department of Justice—Drug Enforcement Administration

Schedule of Controlled Substances: Maintaining Marijuana in Schedule I of the Controlled Substances Act

Background, Data, and Analysis: Eight Factors Determinative of Control and Findings Pursuant to 21 U.S.C. 812(b)

Prepared by: Office of Diversion Control, Drug and Chemical Evaluation Section, Washington, DC 20537

July 2016

Background

On December 17, 2009, Bryan Krumm, CNP, submitted a petition to the Drug Enforcement Administration (DEA) to initiate proceedings for a repeal of the rules or regulations that place marijuana [38] in schedule I of the Controlled Substances Act (CSA). The petition requests that marijuana be rescheduled in any schedule other than schedule I of the CSA. The petitioner claims that:

1. Marijuana has accepted medical use in the United States;
2. Studies have shown that smoked marijuana has proven safety and efficacy;
3. Marijuana is safe for use under medical supervision; and
4. Marijuana does not have the abuse potential for placement in schedule I

The DEA accepted this petition for filing on April 3, 2010.

The Attorney General may by rule transfer a drug or other substance between schedules of the CSA if she finds that such drug or other substance has a potential for abuse, and makes the findings prescribed by 21 U.S.C. 812(b) for the schedule in which such drug is to be placed. 21 U.S.C. 811(a)(1). The Attorney General has delegated this responsibility to the Acting Administrator of the DEA. 28 CFR 0.100(b).

In accordance with 21 U.S.C. 811(b), after gathering the necessary data, the DEA submitted the petition and necessary data to the Department of Health and Human Services (HHS) on May 6, 2011, and requested that HHS provide a scientific and medical evaluation and scheduling recommendation for marijuana. In documents dated June 3 and June 25, 2015, the acting Assistant Secretary for Health of the HHS [39] recommended to the DEA that marijuana continue to be controlled in Schedule I of the CSA, and provided to the DEA its scientific and medical evaluation titled ''Basis for the Recommendation for Maintaining Marijuana in Schedule I of the Controlled Substances Act.'' The HHS's recommendations are binding on the DEA as to scientific and medical matters. 21 U.S.C. 811(b).

Before initiating proceedings to reschedule a substance, the CSA requires the Acting Administrator to determine whether the HHS scheduling recommendation, scientific and medical evaluation, and ''all other relevant data'' constitute substantial evidence that the drug should be rescheduled as proposed. 21 U.S.C. 811(b). The Acting Administrator must determine whether there is substantial evidence to conclude that the drug meets the criteria for placement in another schedule based on the criteria set forth in 21 U.S.C. 812(b). The CSA requires that both the DEA and the HHS consider the eight factors specified by Congress in 21 U.S.C. 811(c). This document lays out those considerations and is organized according to the eight factors. As DEA sets forth in detail below, the evidence shows:

1. *Actual or relative potential for abuse.* Marijuana has a high potential for abuse. Preclinical and clinical data show that it has reinforcing effects characteristic of drugs of abuse. National databases on actual abuse show marijuana is the most widely abused drug, including significant numbers of substance abuse treatment admissions. Data on marijuana seizures show widespread availability and trafficking.

2. *Scientific evidence of its pharmacological effect.* The scientific understanding of marijuana, cannabinoid receptors, and the endocannabinoid system continues to be studied and elucidated. Marijuana produces various pharmacological effects, including subjective (*e.g.,* euphoria, dizziness, disinhibition), cardiovascular, acute and chronic respiratory, immune system, and prenatal exposure effects, as well as behavioral and cognitive impairment.

3. *Current scientific knowledge.* There is no currently accepted medical use for marijuana in the United States. Marijuana sources are derived from numerous cultivated strains and may have different levels of Δ^9-THC and other cannabinoids. Under the five-element test for currently accepted medical use discussed in more detail below and upheld by the Court of Appeals for the District of Columbia in *Alliance for Cannabis Therapeutics* v. *DEA,* 15 F.3d 1131, 1135 (D.C. Cir. 1994) (hereinafter ''*ACT*''), there is no complete scientific analysis of marijuana's chemical components; there are not adequate safety studies; there are not adequate and well-controlled efficacy studies; there is not a consensus of medical opinion concerning medical applications of marijuana; and the scientific evidence regarding marijuana's safety and efficacy is not widely available. To date, scientific and medical research has not progressed to the point that marijuana has a currently accepted medical use, even under conditions where its use is severely restricted.

4. *History and current pattern of abuse.* Marijuana continues to be the most widely used illicit drug. In 2014, there were 22.2 million current users. There were also 2.6 million new users, most of whom were less than 18 years of age. During the same period, marijuana was the most frequently identified drug exhibit in federal, state, and local forensic laboratories.

5. *Scope, duration, and significance of abuse.* Abuse of marijuana is widespread and significant. In 2014, for example, an estimated 6.5 million people aged 12 or older used marijuana on a daily or almost daily basis over a 12-month period. In addition, a significant proportion of all admissions for substance abuse treatment are for marijuana/hashish as their primary drug of abuse. In 2013, 16.8% of all such admissions—281,991 over the course of the year—were for primary marijuana/hashish abuse.

6. *Risk, if any, to public health.* Together with the health risks outlined in terms of pharmacological effects above, public health risks from acute use of marijuana include impaired psychomotor performance, impaired driving, and impaired performance on tests of learning and associative processes. Chronic use of marijuana

[38] The Controlled Substances Act (CSA) defines marijuana as the following: ''All parts of the plant *Cannabis sativa L.,* whether growing or not; the seeds thereof; the resin extracted from any part of such plant; and every compound, manufacture, salt, derivative, mixture, or preparation of such plant, its seeds or resin. Such term does not include the mature stalks of such plant, fiber produced from such stalks, oil or cake made from the seeds of such plant, any other compound, manufacture, salt, derivative, mixture, or preparation of such mature stalks (except the resin extracted there from), fiber, oil, or cake, or the sterilized seed of such plant which is incapable of germination. 21 U.S.C. 802(16). Note that ''marihuana'' is the spelling originally used in the CSA. This document uses the spelling that is more common in current usage, ''marijuana.''

[39] As set forth in a memorandum of understanding entered into by the HHS, the Food and Drug Administration (FDA), and the National Institute on Drug Abuse (NIDA), the FDA acts as the lead agency within the HHS in carrying out the Secretary's scheduling responsibilities under the CSA, with the concurrence of the NIDA. 50 FR 9518, Mar. 8, 1985. The Secretary of the HHS has delegated to the Assistant Secretary for Health of the HHS the authority to make domestic drug scheduling recommendations.

poses a number of other risks to the public health including physical as well as psychological dependence.

7. *Psychic or physiological dependence liability.* Long-term, heavy use of marijuana can lead to physical dependence and withdrawal following discontinuation, as well as psychic or psychological dependence. In addition, a significant proportion of all admissions for treatment for substance abuse are for primary marijuana abuse; in 2013, 16.8% of all admissions were for primary marijuana/hashish abuse, representing 281,991 individuals.

8. *Immediate precursor.* Marijuana is not an immediate precursor of any controlled substance.

As specified in 21 U.S.C. 812(b)(1), in order for a substance to be placed in schedule I, the Acting Administrator must find that:

A. The drug or other substance has a high potential for abuse.

B. The drug or other substance has no currently accepted medical use in treatment in the United States.

C. There is a lack of accepted safety for use of the drug or other substance under medical supervision.

To be classified in another schedule under the CSA (*e.g.,* II, III, IV, or V), a substance must have a ''currently accepted medical use in treatment in the United States.'' 21 U.S.C. 812(b)(2)–(5). A substance also may be placed in schedule II if it is found to have ''a currently accepted medical use with severe restrictions.'' 21 U.S.C. 812(b)(2). If a controlled substance has no such currently accepted medical use, it must be placed in schedule I. *See* Notice of Denial of Petition, 66 FR 20038 (Apr. 18, 2001) (''Congress established only one schedule—schedule I—for drugs of abuse with 'no currently accepted medical use in treatment in the United States' and 'lack of accepted safety for use . . . under medical supervision.' '').

A drug that is the subject of an approved new drug application (NDA) or abbreviated new drug application (ANDA) under Federal Food, Drug, and Cosmetic Act (21 U.S.C. 355), is considered to have a currently accepted medical use in treatment in the United States for purposes of the CSA. The HHS stated in its review, however, that FDA has not approved any NDA for marijuana for any indication.

In the absence of NDA or ANDA approval, DEA has established a five-element test for determining whether the drug has a currently accepted medical use in treatment in the United States. Under this test, a drug will be considered to have a currently accepted medical use only if the following five elements are satisfied:

1. The drug's chemistry is known and reproducible;
2. There are adequate safety studies;
3. There are adequate and well-controlled studies proving efficacy;
4. The drug is accepted by qualified experts; and
5. The scientific evidence is widely available.

57 FR 10499, 10506 (March 26, 1992). *See also ACT,* 15 F.3d at 1135.

As discussed in Factor 3, below, HHS concluded, and DEA agrees, that the scientific evidence is insufficient to demonstrate that marijuana has a currently accepted medical use under the five-element test. The evidence was insufficient in this regard also when the DEA considered petitions to reschedule marijuana in 1992 (57 FR 10499),[40] in 2001 (66 FR 20038), and in 2011 (76 FR 40552).[41] Little has changed since 2011 with respect to the lack of clinical evidence necessary to establish that marijuana has a currently accepted medical use. No studies have scientifically assessed the efficacy and full safety profile of marijuana for any specific medical condition.

The limited existing clinical evidence is not adequate to warrant rescheduling of marijuana under the CSA. To the contrary, the data in this scheduling review document show that marijuana continues to meet the criteria for schedule I control under the CSA for the following reasons:

1. Marijuana has a high potential for abuse.
2. Marijuana has no currently accepted medical use in treatment in the United States.
3. Marijuana lacks accepted safety for use under medical supervision.

Factor 1: The Drug's Actual or Relative Potential for Abuse

Marijuana is the most commonly abused illegal drug in the United States. It is also the most commonly used illicit drug by high school students in the United States. Further, marijuana is the most frequently identified drug by state, local and federal forensic laboratories. Marijuana's main psychoactive ingredient, Δ^9-tetrahydrocannabinol (Δ^9-THC),[42] is an effective reinforcer in laboratory animals, including primates and rodents. These animal studies both predict and support the observations that marijuana produces reinforcing effects in humans. Such reinforcing effects can account for the repeated abuse of marijuana.

A. Indicators of Abuse Potential

The HHS has concluded in its document, ''Basis for the Recommendation for Maintaining Marijuana in Schedule I of the Controlled Substances Act,'' that marijuana has a high potential for abuse. The finding of ''abuse potential'' is critical for control under the Controlled Substances Act (CSA). Although the term is not defined in the CSA, guidance in determining abuse potential is provided in the legislative history of the Act (Comprehensive Drug Abuse Prevention and Control Act of 1970, H.R. Rep. No. 91–1444, 91st Cong., Sess. 2 (1970), reprinted in 1970 U.S.C.C.A.N. 4566, 4603). Accordingly, the following items are indicators that a drug or other substance has potential for abuse:

- *There is evidence that individuals are taking the drug or drugs containing such a substance in amounts sufficient to create a hazard to their health or to the safety of other individuals or of the community; or*
- *There is significant diversion of the drug or drugs containing such a substance from legitimate drug channels; or*
- *Individuals are taking the drug or drugs containing such a substance on their own initiative rather than on the basis of medical advice from a practitioner licensed by law to administer such drugs in the course of his professional practice; or*
- *The drug or drugs containing such a substance are new drugs so related in their action to a drug or drugs already listed as having a potential for abuse to make it likely that the drug will have the same potentiality for abuse as such drugs, thus making it reasonable to assume that there may be significant diversions from legitimate channels, significant use contrary to or without medical advice, or that it has a substantial capability of creating hazards to the health of the user or to the safety of the community.*

Of course, evidence of actual abuse of a substance is indicative that a drug has a potential for abuse.

In its recommendation, the HHS analyzed and evaluated data on marijuana as applied to each of the above four criteria. The analysis presented in the recommendation (HHS, 2015) is discussed below:

1. There is evidence that individuals are taking the drug or drugs containing such a substance in amounts sufficient to create a hazard to their health or to the safety of other individuals or of the community.

[40] *See Alliance for Cannabis Therapeutics* v. *DEA,* 15 F.3d 1131 (D.C. Cir. 1994).

[41] *See Americans for Safe Access* v. *DEA,* 706 F.3d 438 (D.C. Cir. 2013)(rhg den. 2013).

[42] The terms Δ^9-THC and THC are used interchangeably thoughout this document.

The HHS stated that some individuals are taking marijuana in amounts sufficient to create a hazard to their health and to the safety of other individuals and the community. Data from national databases on actual abuse of marijuana support the idea that a large number of individuals use marijuana. In its recommendation (HHS, 2015), the HHS presented data from the National Survey on Drug and Health (NSDUH) of the Substance Abuse and Mental Health Services Administration (SAMHSA) and the Monitoring the Future (MTF) survey of the National Institute on Drug Abuse (NIDA), and the DEA has since updated this information. The most recent data from SAMHSA's NSDUH in 2014 reported that marijuana was the most used illicit drug. Among Americans aged 12 years and older, an estimated 22.2 million Americans used marijuana within the past month according to the 2014 NSDUH. In 2004, an estimated 14.6 million individuals reported using marijuana within the month prior to the study. The estimated rates in 2014 thus reflect an increase of approximately 7.6 million individuals over a 10-year period. According to the 2013 NSDUH report, an estimated 19.8 million individuals reported using marijuana. Thus, over a period of one year (2013 NSDUH–2014 NSDUH), there was an estimated increase of 2.4 million individuals in the United States using marijuana.

The results from the 2015 Monitoring the Future survey of 8th, 10th, and 12th grade students indicate that marijuana was the most widely used illicit drug in these age groups. Current monthly use was 6.5% of 8th graders, 14.8% of 10th graders, and 21.3% of 12th graders. The Treatment Episode Data Set (TEDS) in 2013 reported that marijuana abuse was the primary factor in 16.8 percent of non-private substance-abuse treatment facility admissions. In 2011, SAMHSA's Drug Abuse Warning Network (DAWN) reported that marijuana was mentioned in 36.4% (455,668 out of approximately 1.25 million) of illicit drug-related Emergency Department (ED) visits.

Data on the extent and scope of marijuana abuse are presented under Factors 4 and 5 of this analysis. Discussion of the health effects of marijuana is presented under Factor 2, and the assessment of risk to the public health posed by acute and chronic marijuana abuse is presented under Factor 6 of this analysis.

2. There is significant diversion of the drug or drugs containing such a substance from legitimate drug channels.

In accordance with the CSA, the only lawful source of marijuana in the United States is that produced and distributed for research purposes under the oversight of NIDA and in conformity with United States obligations under the Single Convention on Narcotic Drugs.[43] The HHS stated that there is a lack of significant diversion from legitimate drug sources, but that this is likely due to high availability of marijuana from illicit sources. Marijuana is not an FDA-approved drug product. Neither a New Drug Application (NDA) nor a Biologics License Application (BLA) has been approved for marketing in the United States. However, the marijuana used for nonclinical and clinical research represents a very small amount of the total amount of marijuana available in the United States and therefore information about marijuana diversion from legitimate sources is limited or not available.

The DEA notes that the magnitude of the demand for illicit marijuana is evidenced by information from a number of databases presented under Factor 4. Briefly, marijuana is the most commonly used illegal drug in the United States. It is also the most commonly used illicit drug by American high schoolers. Marijuana is the most frequently identified drug in state, local, and federal forensic laboratories, with increasing amounts of both domestically grown and of illicitly smuggled marijuana.

Given that marijuana has long been the most widely trafficked and abused controlled substance in the United States, and that all aspects of such illicit activity are entirely outside of the closed system of distribution mandated by the CSA, it may well be the case that there is little thought given to diverting marijuana from the small supplies produced for legitimate research purposes. Thus, the lack of data indicating diversion of marijuana from legitimate channels to the illicit market is not indicative of a lack of potential for abuse of the drug.

3. Individuals are taking the drug or drugs containing such a substance on their own initiative rather than on the basis of medical advice from a practitioner licensed by law to administer such drugs in the course of his professional practice.

The HHS stated that the FDA has not evaluated or approved an NDA or BLA for marijuana for any therapeutic indication. Consistent with federal law, therefore, an individual legitimately can take marijuana based on medical advice from a practitioner only by participating in research that is being conducted under an Investigational New Drug (IND) application. The HHS noted that there are several states as well as the District of Columbia which have passed laws allowing for individuals to use marijuana for purported ''medical'' use under certain circumstances, but data are not available yet to determine the number of individuals using marijuana under these state laws. Nonetheless, according to 2014 NSDUH data, 22.2 million American adults currently use marijuana (SAMHSA, 2015a). Based on the large number of individuals who use marijuana and the lack of an FDA-approved drug product, the HHS concluded that the majority of individuals using marijuana do so on their own initiative rather than by following medical advice from a licensed practitioner.

4. The drug or drugs containing such a substance are new drugs so related in their action to a drug or drugs already listed as having a potential for abuse to make it likely that the drug will have the same potentiality for abuse as such drugs, thus making it reasonable to assume that there may be significant diversions from legitimate channels, significant use contrary to or without medical advice, or that it has a substantial capability of creating hazards to the health of the user or to the safety of the community.

Marijuana and its primary psychoactive ingredient, Δ^9-THC, are controlled substances in schedule I under the CSA.

The HHS stated that one approved, marketed drug product contains synthetic Δ^9-THC, also known as dronabinol, and another approved, marketed drug product contains a cannabinoid-like synthetic compound that is structurally related to Δ^9-THC, the main active component in marijuana. Both products are controlled under the CSA.

Marinol is a schedule III drug product containing synthetic Δ^9-THC (dronabinol) formulated in sesame oil in soft gelatin capsules. Marinol was approved by the FDA in 1985 for the treatment of nausea and vomiting associated with cancer chemotherapy in patients who did not respond to conventional anti-emetic treatments. In 1992, FDA approved Marinol for the treatment of anorexia associated with weight loss in patients with acquired immunodeficiency syndrome (AIDS). Marinol was originally placed into schedule II and later rescheduled to schedule III under the CSA due to the low reports of abuse relative to marijuana.

[43] *See* 76 FR 51403, 51409–51410 (2011) (discussing cannabis controls required under the Single Convention).

Cesamet is a drug product containing the schedule II substance nabilone, a synthetic substance structurally related to Δ9-THC. Cesamet was approved for marketing by the FDA in 1985 for the treatment of nausea and vomiting associated with cancer chemotherapy. All other naturally occurring cannabinoids in marijuana and their synthetic equivalents with similar chemical structure and pharmacological activity are already included as schedule I drugs under the CSA.

B. Abuse Liability Studies

In addition to the indicators suggested by the CSA's legislative history, data as to preclinical and clinical abuse liability studies, as well as actual abuse, including clandestine manufacture, trafficking, and diversion from legitimate sources, are considered in this factor.

Abuse liability evaluations are obtained from studies in the scientific and medical literature. There are many preclinical measures of a drug's effects that when taken together provide an accurate prediction of the human abuse liability. Clinical studies of the subjective and reinforcing effects in humans and epidemiological studies provide quantitative data on abuse liability in humans and some indication of actual abuse trends. Both preclinical and clinical studies have clearly demonstrated that marijuana and Δ9-THC possess the attributes associated with drugs of abuse: They function as a positive reinforcer to maintain drug-seeking behavior, they function as a discriminative stimulus, and they have dependence potential.

Preclinical and most clinical abuse liability studies have been conducted with the psychoactive constituents of marijuana, primarily Δ9-THC and its metabolite, 11-hydroxy-Δ9-THC. Δ9-THC's subjective effects are considered to be the basis for marijuana's abuse liability. The following studies provide a summary of that data.

1. Preclinical Studies

Δ9-THC, the primary psychoactive component in marijuana, is an effective reinforcer in laboratory animals, including primates and rodents, as these animals will self-administer Δ9-THC. These animal studies both predict and support the observations that Δ9-THC, whether smoked as marijuana or administered by other routes, produces reinforcing effects in humans. Such reinforcing effects can account for the repeated abuse of marijuana.

a. Drug Discrimination Studies

The drug discrimination paradigm is used as an animal model of human subjective effects (Solinas et al., 2006) and is a method where animals are able to indicate whether a test drug is able to produce physical or psychological changes similar to a known drug of abuse. Animals are trained to press one bar (in an operant chamber) when they receive a known drug of abuse and another bar when they receive a placebo. When a trained animal receives a test drug, if the drug is similar to the known drug of abuse, it will press the bar associated with the drug.

Discriminative stimulus effects of Δ9-THC have specificity for the pharmacological effects of cannabinoids found in marijuana (Balster and Prescott, 1992; Browne and Weissman, 1981; Wiley et al., 1993; Wiley et al., 1995). As mentioned by the HHS, the discriminative stimulus effects of cannabinoids appear to be unique because abused drugs of other classes including stimulants, hallucinogens, opioids, benzodiazepines, barbiturates, NMDA antagonists, and antipsychotics do not fully substitute for Δ9-THC.

Laboratory animals including monkeys (McMahon et al., 2009), mice (McMahon et al., 2008), and rats (Gold et al., 1992) are able to discriminate cannabinoids from other drugs and placebo. The major active metabolite of Δ9-THC, 11-hydroxy-Δ9-THC, generalizes to Δ9-THC (Browne and Weissman, 1981). In addition, according to the HHS, twenty-two other cannabinoids found in marijuana also substitute for Δ9-THC. At least one cannabinoid, CBD, does not substitute for Δ9-THC in rats (Vann et al., 2008).

b. Self-Administration Studies

Animal self-administration behavior associated with a drug is a commonly used method for evaluating if the drug produces rewarding effects and for predicting abuse potential (Balster, 1991; Balster and Bigelow, 2003). Drugs that are self-administered by animals are likely to produce rewarding effects in humans. As mentioned in the HHS review document, earlier attempts to demonstrate self-administration of Δ9-THC were unsuccessful and confounded by diet restrictions, animal restraint, and known analgesic activity of Δ9-THC at testing doses (Tanda and Goldberg, 2003; Justinova et al., 2003). Self-administration of Δ9-THC was first demonstrated by Tanda et al. (2000). Tanda et al. (2000) showed that squirrel monkeys that were initially trained to self-administer cocaine (30 μg/kg, i.v.) self-administered 2 μg/kg Δ9-THC (i.v.) and at a rate of 30 injections per one hour session. Tanda et al. (2000) used a lower dose of Δ9-THC that was rapidly delivered (0.2 ml injection over 200 ms) than in previous self-administration studies such that analgesic activity of Δ9-THC was not a confounding factor. The authors also stated that the doses were comparable to those doses used by humans who smoke marijuana. A CB1 receptor antagonist (SR141716) blocked this rewarding effect of THC.

Justinova et al. (2003) were able to demonstrate self-administration of Δ9-THC in drug-naïve squirrel monkeys (no previous exposure to other drugs). The authors tested the monkeys with several doses of Δ9-THC (1, 2, 4, 8, and 16 μg/kg, i.v.) and found that the maximal rates of self-administration were observed with the 4 μg/kg/infusion. Subsequently, Braida et al. (2004) reported that rats will self-administer Δ9-THC when delivered intracerebroventricularly (i.c.v.), but only at the lowest doses tested (0.01–0.02 μg/infusion, i.c.v.).

Self-administration behavior with Δ9-THC was found to be antagonized in rats and squirrel monkeys by rimonabant (SR141716A, CB1 antagonist) and the opioid antagonists (naloxone and naltrexone) (Tanda et al., 2000; Braida et al., 2004; Justinova et al., 2004).

c. Conditioned Place Preference Studies

Conditioned place preference (CPP) is a behavioral assay where animals are given the opportunity to spend time in two distinct environments: one where they previously received a drug and one where they received a placebo. If the drug is reinforcing, animals in a drug-free state will choose to spend more time in the environment paired with the drug when both environments are presented simultaneously.

CPP has been demonstrated with Δ9-THC in rats but only at low doses (0.075–1.0 mg/kg, i.p.; Braida et al., 2004). Rimonabant (0.25–1.0 mg/kg, i.p.) and naloxone (0.5–2.0 mg/kg, i.p.) antagonized Δ9-THC-mediated CPP (Braida et al., 2004). However, in another study with rats, rimonabant was demonstrated to induce CPP at doses ranging from 0.25–3.0 mg/kg (Cheer et al., 2000). Mice without μ-opioid receptors did not exhibit CPP to Δ9-THC (paired with 1 mg/kg Δ9-THC, i.p.) (Ghozland et al., 2002).

2. Clinical Studies

In its scientific review (HHS, 2015), the HHS provided a list of common subjective psychoactive responses to cannabinoids based on information from several references (Adams and Martin, 1996; Gonzalez, 2007; Hollister, 1986;

Hollister, 1988; Institute of Medicine, 1982). Furthermore, Maldonado (2002) characterized these subjective responses as pleasurable to most humans and are generally associated with drug-seeking and/or drug-taking. Later studies (Scherrer et al., 2009; Zeiger et al., 2010) reported that high levels of positive psychoactive effects correlate with increased marijuana use, abuse, and dependence. The list of the common subjective psychoactive effects provided by the HHS (HHS, 2015) is presented below:

(1) Disinhibition, relaxation, increased sociability, and talkativeness.

(2) Increased merriment and appetite, and even exhilaration at high doses.

(3) Enhanced sensory perception, which can generate an increased appreciation of music, art, and touch.

(4) Heightened imagination, which can lead to a subjective sense of increased creativity.

(5) Initial dizziness, nausea, tachycardia, facial flushing, dry mouth, and tremor.

(6) Disorganized thinking, inability to converse logically, time distortions, and short-term memory impairment.

(7) Ataxia and impaired judgment, which can impede driving ability or lead to an increase in risk-taking behavior.

(8) Illusions, delusions, and hallucinations that intensify with higher doses.

(9) Emotional lability, incongruity of affect, dysphoria, agitation, paranoia, confusion, drowsiness, and panic attacks, which are more common in inexperienced or high-dosed users.

The HHS mentioned that marijuana users prefer higher concentrations of the principal psychoactive component (Δ^9-THC) over lower concentrations. In a clinical study with marijuana users (n = 12, usage ranged from once a month to 4 times a week), subjects were given a choice of 1.95% Δ^9-THC marijuana or 0.63% Δ^9-THC marijuana after sampling both marijuana cigarettes in two choice sessions. The marijuana cigarette with high THC was chosen in 21 out of 24 choice sessions or 87.5% of the time (Chait and Burke, 1994). Furthermore, in a double-blind study, frequent marijuana users (n = 11, usage at least 2 times per month with at least 100 occasions) when given a low-dose of oral Δ^9-THC (7.5 mg) were able to distinguish the psychoactive effects better than occasional users (n = 10, no use within the past 4 years with 10 or fewer lifetime uses) and also experienced fewer sedative effects (Kirk and de Wit, 1999).

Marijuana has also been recognized by scientific experts to have withdrawal symptoms (negative reinforcement) following moderate and heavy use. As discussed further in Factor 7, the DEA notes that the American Psychiatric Association's (APA) Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM–5) included a list of withdrawal symptoms following marijuana [cannabis] use (DSM–5, 2013).

C. Actual Abuse of Marijuana—National Databases Related to Marijuana Abuse and Trafficking

Marijuana continues to be the most widely used illicit drug. Evidence of actual abuse can be defined by episodes/mentions in databases indicative of abuse/dependence. The HHS provided in its recommendation (HHS, 2015) information relevant to actual abuse of marijuana including data results from the National Survey on Drug Use and Health (NSDUH), a Monitoring the Future (MTF) survey, the Drug Abuse Warning Network (DAWN), and the Treatment Episode Data Set (TEDS). These data sources provide quantitative information on many factors related to abuse of a particular substance, including incidence and patterns of use, and profile of the abuser of specific substances. The DEA is providing updated information from these databases in this discussion. The DEA also includes data on trafficking and illicit availability of marijuana from DEA databases including the National Forensic Laboratory Information System (NFLIS) and the National Seizure System (NSS), formerly the Federal-wide Drug Seizure System (FDSS), as well as other sources of data specific to marijuana, including the Potency Monitoring Project and the Domestic Cannabis Eradication and Suppression Program (DCE/SP).

1. National Survey on Drug Use and Health (NSDUH)

The National Survey on Drug Use and Health (NSDUH) is conducted annually by the Department of Health and Human Service's Substance Abuse and Mental Health Services Administration (SAMHSA). SAMHSA is the primary source of estimates of the prevalence and incidence of pharmaceutical drugs, illicit drugs, alcohol, and tobacco use in the United States. The survey is based on a nationally representative sample of the civilian, non-institutionalized population 12 years of age and older. The survey excludes homeless people who do not use shelters, active military personnel, and residents of institutional group quarters such as jails and hospitals.

According to the 2014 NSDUH report, marijuana was the most commonly used and abused illicit drug. That data showed that there were 22.2 million people who were past month users (8.4%) among those aged 12 and older in the United States. (Note: NSDUH figures on marijuana use include hashish use; the relative proportion of hashish use to marijuana use is very low). Marijuana had the highest rate of past-year dependence or abuse in 2014. The NSDUH report estimates that 3.0 million people aged 12 or older used an illicit drug for the first time in 2014; a majority (70.3%) of these past year initiates reported that their first drug used was marijuana. Among those who began using illicit drugs in the past year, 65.6%, 70.3%, and 67.6% reported marijuana as the first illicit drug initiated in 2012, 2013, and 2014 respectively. In 2014, the average age of marijuana initiates among 12- to 49-year-olds was 18.5 years. These usage rates and demographics are relevant in light of the risks presented.

Marijuana had the highest rate of past year dependence or abuse of any illicit drug in 2014. The 2014 NSDUH report stated that 4.2 million persons were classified with substance dependence or abuse of marijuana in the past year (representing 1.6% of the total population aged 12 or older, and 59.0% of those classified with illicit drug dependence or abuse) based on criteria specified in the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM–IV).

Among past year marijuana users age 12 or older, 18.5% used marijuana on 300 or more days within the previous 12 months in 2014. This translates into 6.5 million people using marijuana on a daily or almost daily basis over a 12-month period, significantly more than the estimated 5.7 million daily or almost daily users in just the year before. Among past month marijuana users, 41.6% (9.2 million) used the drug on 20 or more days in the past month, a significant increase from the 8.1 million who used marijuana 20 days or more in 2013.

2. Monitoring the Future (MTF)

Monitoring the Future (MTF) is an ongoing study which is funded under a series of investigator-initiated competing research grants from the National Institute on Drug Abuse (NIDA). MTF tracks drug use trends among American adolescents in the 8th, 10th, and 12th grades. According to its 2015 survey results, marijuana was the most commonly used illicit drug, as was the case in previous years. Approximately 6.5% of 8th graders,

14.8% of 10th graders, and 21.3% of 12th graders surveyed in 2015 reported marijuana use during the past month prior to the survey. A number of high school students in 2015 also reported daily use in the past month, including 1.1%, 3.0%, and 6.0% of 8th, 10th, and 12th graders, respectively.

3. Drug Abuse Warning Network (DAWN), Emergency Department (ED) Visits

The Drug Abuse Warning Network (DAWN) is a public health surveillance system that monitors drug-related hospital emergency department (ED) visits to track the impact of drug use, misuse, and abuse in the United States. For the purposes of DAWN, the term ''drug abuse'' applies if the following conditions are met: (1) The case involved at least one of the following: use of an illegal drug, use of a legal drug contrary to directions, or inhalation of a non-pharmaceutical substance; and (2) the substance was used for one of the following reasons: because of drug dependence, to commit suicide (or attempt to commit suicide), for recreational purposes, or to achieve other psychic effects. Importantly, many factors can influence the estimates of ED visits, including trends in overall use of a substance as well as trends in the reasons for ED usage. For instance, some drug users may visit EDs for life-threatening issues while others may visit to seek care for detoxification because they needed certification before entering treatment. Additionally, DAWN data do not distinguish the drug responsible for the ED visit from other drugs that may have been used concomitantly. As stated in a DAWN report, ''Since marijuana/hashish is frequently present in combination with other drugs, the reason for the ED visit may be more relevant to the other drug(s) involved in the episode.''

In 2011, marijuana was involved in 455,668 ED visits out of 2,462,948 total ED visits involving all abuse or misuse in the United States and out of 1.25 million visits involving abuse or misuse of illicit drugs (excluding alcohol-related visits), as estimated by DAWN. This is lower than the number of ED visits involving cocaine (505,224) and higher than the number of ED visits involving heroin (258,482) and stimulants (*e.g.,* amphetamine, methamphetamine) (159,840). Visits involving the other major illicit drugs, such as MDMA, GHB, LSD and other hallucinogens, PCP, and inhalants, were much less frequent, comparatively.

In young patients, marijuana is the illicit drug most frequently involved in ED visits, according to DAWN estimates, with 240.2 marijuana-related ED visits per 100,000 population ages 12 to 17, 443.8 per 100,000 population ages 18 to 20, and 446.9 per 100,000 population ages 21 to 24.

4. Treatment Episode Data Set (TEDS) System

The Treatment Episode Data Set (TEDS) system is part of the SAMHSA Drug and Alcohol Services Information System and is a national census of annual admissions to state licensed or certified, or administratively tracked, substance abuse treatment facilities. The TEDS system contains information on patient demographics and substance abuse problems of admissions to treatment for abuse of alcohol and/or drugs in facilities that report to state administrative data systems. For this database, the primary substance of abuse is defined as the main substance of abuse reported at the time of admission. TEDS also allows for the recording of two other substances of abuse (secondary and tertiary).

In 2011, the TEDS system included 1,928,792 admissions to substance abuse treatment; in 2012 there were 1,801,385 admissions; and in 2013 there were 1,683,451 admissions. Marijuana/hashish was the primary substance of abuse for 18.3% (352,397) of admissions in 2011; 17.5% (315,200) in 2012; and 16.8% (281,991) in 2013. Of the 281,991 admissions for marijuana/hashish treatment in 2013, 24.3% used marijuana/hashish daily. Among those treated for marijuana/hashish as the primary substance in 2013, 27.4% were ages 12 to 17 years and 29.7% were ages 18 to 24 years. Those admitted for marijuana/hashish were mostly male (72.6%) and non-Hispanic (82.2%). Non-hispanic whites (43.2%) represented the largest ethnic group of marijuana admissions.

5. Forensic Laboratory Data

Data on marijuana seizures from federal, state, and local forensic laboratories have indicated that there is significant trafficking of marijuana. The National Forensic Laboratory System (NFLIS) is a program sponsored by the Drug Enforcement Administration's Office of Diversion Control. NFLIS systematically collects drug identification results and associated information from drug exhibits encountered by law enforcement and analyzed in federal, state, and local forensic laboratories. NFLIS is a comprehensive information system that includes data from 278 individual forensic laboratories that report more than 91% of the drug caseload in the U.S. NFLIS captures data for all drugs and chemicals identified and reported by forensic laboratories. More than 1,700 unique substances are represented in the NFLIS database.

Data from NFLIS showed that marijuana was the most frequently identified drug in federal, state, and local laboratories from January 2004 through December 2014. Marijuana accounted for between 29.47% and 34.84% of all drug exhibits analyzed annually during that time frame (Table 1).

Table 1. NFLIS Federal, State and Local Forensic Laboratory Data of Marijuana Reports (other than hashish)

Year	Reports	Percent of Total Reports
2004	454,582	34.42%
2005	483,134	32.53%
2006	520,060	32.55%
2007	525,668	33.66%
2008	526,420	34.07%
2009	536,888	34.30%
2010	544,418	34.91%
2011	495,937	33.42%
2012	485,591	32.02%
2013	452,839	30.70%
2014	432,989	29.27%
2015*	341,162	26.73%

NFLIS database queried 03-23-2016, by date of submission, all drugs reported
*2015 data are still being reported to NFLIS due to normal lag time.

Since 2004, the total number of reports of marijuana and the amount of marijuana encountered federally has remained high (see data from Federal-wide Drug Seizure System and Domestic Cannabis Eradication and Suppression Program below).

6. Federal-Wide Drug Seizure System

The Federal-wide Drug Seizure System (FDSS) contains information about drug seizures made within the jurisdiction of the United States by the Drug Enforcement Administration, the Federal Bureau of Investigation, United States Customs and Border Protection, and United States Immigration and Customs Enforcement. It also records maritime seizures made by the United States Coast Guard. Drug seizures made by other Federal agencies are included in the FDSS database when drug evidence custody is transferred to one of the agencies identified above. FDSS is now incorporated into the National Seizure System (NSS), which is a repository for information on clandestine laboratory and contraband (chemicals and precursors, currency, drugs, equipment and weapons). FDSS reports total federal drug seizures [in kilograms (kg)] of substances such as cocaine, heroin, MDMA, methamphetamine, and cannabis (marijuana and hashish). The yearly volume of cannabis seized (Table 2), consistently exceeding a thousand metric tons per year, shows that cannabis is very widely trafficked in the United States.

Table 2. Total Federal Seizures of Cannabis (Expressed in Kg)
(Source: NSS, U.S. Seizures, EPIC System Portal, queried 08-05-2015)

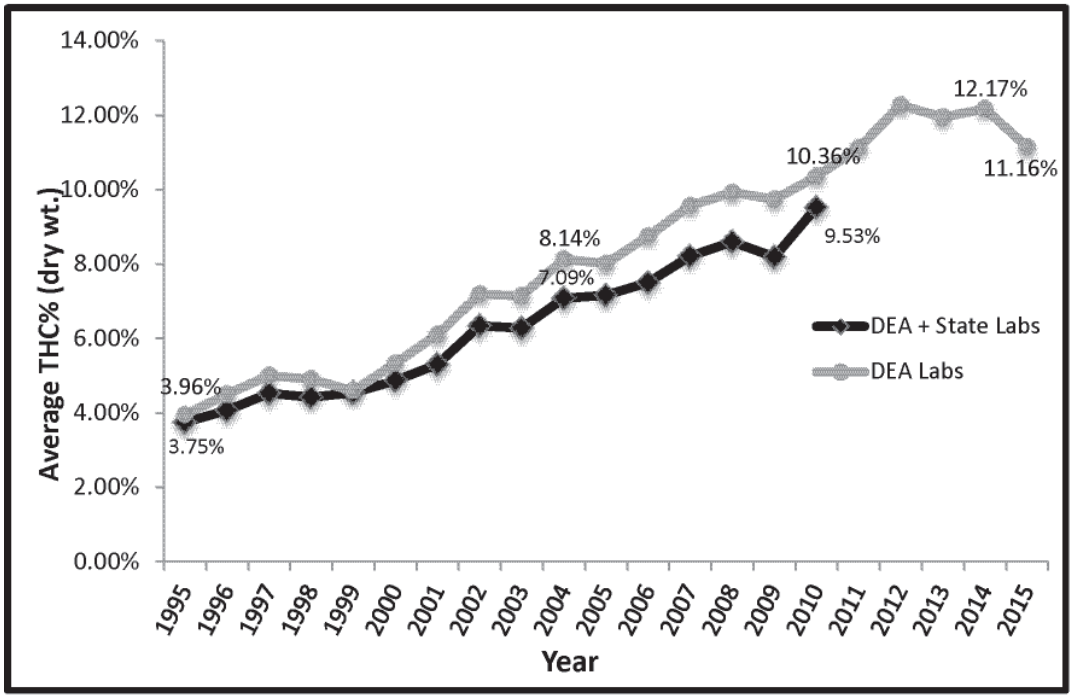
	2010	2011	2012	2013	2014
Cannabis	**4,071,328**	**3,622,256**	**2,756,439**	**2,622,494**	**1,768,277**
Marijuana	4,070,850	3,621,322	2,754,457	2,618,340	1,767,741
Hashish	478	934	1,982	4,154	536

7. Potency Monitoring Project

The University of Mississippi's Potency Monitoring Project (PMP), through a contract with the National Institute on Drug Abuse (NIDA), analyzes and compiles data on the Δ^9-THC concentrations of marijuana, hashish and hash oil samples provided by DEA regional laboratories and by state and local police agencies. After 2010, PMP has analyzed only marijuana samples provided by DEA regional laboratories. As indicated in Figure 1, the percentage of Δ^9-THC increased from 1995 to 2010 with an average THC content of 3.75% in 1995 and 9.53% in 2010. In examining marijuana samples only provided by DEA laboratories, the average Δ^9-THC content was 3.96% in 1995 in comparison to 11.16% in 2015.

Figure 1. Average Percentage of Δ^9-THC in Samples of Seized Marijuana (1995 – 2015)*

(Source: The University of Mississippi Potency Monitoring Program, Quarterly Report # 131)



*PMP discontinued analysis of state samples after 2010.

**Data for 2015 are incomplete. Figure 1 contains percentage of Δ^9-THC data through Dec. 22. Due to lack of funding, 4,177 samples haven't yet been analyzed.

8. The Domestic Cannabis Eradication and Suppression Program

The Domestic Cannabis Eradication and Suppression Program (DCE/SP) was established in 1979 to reduce the supply of domestically cultivated marijuana in the United States. The program was designed to serve as a partnership between federal, state, and local agencies. Only California and Hawaii were active participants in the program at its inception. However, by 1982 the program had expanded to 25 states and by 1985 all 50 states were participants. Cannabis is cultivated in remote locations and frequently on public lands and illicitly grown in all states. Data provided by the DCE/SP (Table 3) show that in the United States in 2014, there were 3,904,213 plants eradicated in outdoor cannabis cultivation areas compared to 2,597,798 plants in 2000. Significant quantities of marijuana were also eradicated from indoor cultivation operations. There were 396,620 indoor plants eradicated in 2014 compared to 217,105 eradicated in 2000.

Table 3. Domestic Cannabis Eradication, Outdoor and Indoor Plants Seized, 2000–2014 (Source: Domestic Cannabis Eradication/Suppression Program)

	2000	2001	2002	2003	2004
Outdoor	2,597,798	3,068,632	3,128,800	3,427,923	2,996,144
Indoor	217,105	236,128	213,040	223,183	203,896
Total	2,814,903	3,304,760	3,341,840	3,651,106	3,200,040

	2005	2006	2007	2008	2009
Outdoor	3,938,151	4,830,766	6,599,599	7,562,322	9,980,038
Indoor	270,935	400,892	434,728	450,986	414,604
Total	4,209,086	5,231,658	7,034,327	8,013,308	10,394,642

	2010	2011	2012	2013	2014
Outdoor	9,866,766	6,226,288	3,631,582	4,033,513	3,904,213
Indoor	462,419	509,231	302,377	361,727	396,620
Total	10,329,185	6,735,519	3,933,959	4,395,240	4,300,833

The recent statistics from these various surveys and databases show that marijuana continues to be the most commonly used illicit drug, with considerable rates of heavy abuse and dependence. They also show that marijuana is the most readily available illicit drug in the United States.

Petitioners' Major Comment in Relation to Factor 1 and the Government's Responses

(1) The petitioner states on pages 1–2 of the petition that *''[p]ure THC (Marinol), the primary psychoactive ingredient in marijuana has been placed in Schedule III. However, unlike Marinol, marijuana has other cannabinoids that help to mitigate the psychoactive effects of THC and reduce the potential for abuse. Therefore, the THC in marijuana can not have the high potential for abuse required for placement in Schedule I.''*

First, the petitioners failed to review the indicators of abuse potential, as discussed in the legislative history of the CSA. The petitioners did not use data on marijuana usage, diversion, psychoactive properties, and dependence in their evaluation of marijuana abuse potential. The HHS and the DEA discuss those indicators above in this factor. HHS's evaluation of the full range of data led HHS and DEA to conclude that marijuana has a high potential for abuse.

Second, the HHS indicated that modulating effects of the other cannabinoids in marijuana on Δ^9-THC have not been demonstrated in controlled studies. Specifically, HHS concluded in its 8-factor analysis that ''any possible mitigation of delta-9-THC's psychoactive effects by CBD will not occur for most marijuana users.''

Marinol was rescheduled from schedule II to schedule III on July 2, 1999 (64 FR 35928, DEA 1999). In assessing Marinol, HHS compared Marinol to marijuana on several aspects of abuse potential and found that major differences between the two, such as formulation, availability, and usage, contribute to differences in abuse potential. The psychoactive effects from smoking are generally more rapid and intense that those that occur through oral administration (HHS, 2015; Wesson and Washburn, 1990; Hollister and Gillespie, 1973). Therefore, as concluded by both the HHS and the DEA, the delayed onset of action and longer duration of action from an oral dose of Marinol may contribute in limiting the abuse potential of Marinol relative to marijuana, which is most often smoked. The HHS also stated that the extraction and purification of dronabinol from the encapsulated sesame oil mixture of Marinol is highly complex and difficult and that the presence of sesame oil mixture may preclude the smoking of Marinol-laced cigarettes.

Additionally, the FDA approved a New Drug Application (NDA) for Marinol, indicating a legitimate medical use for Marinol in the United States and allowing for Marinol to be rescheduled into schedule II and subsequently into schedule III of the CSA. The HHS mentioned that marijuana and Marinol differ on a wide variety of factors and these differences are major reasons for differential scheduling of marijuana and Marinol. Marijuana, as discussed more fully in Factors 3 and 6, does not have a currently accepted medical use in the United States, is highly abused, and has a lack of accepted safety.

Finally, the DEA notes that under the CSA, for a substance to be placed in schedule II, III, IV, or V, it must have a currently accepted medical use in treatment in the United States.[44] As DEA has previously stated, Congress established only one schedule, schedule I, for drugs of abuse with ''no currently accepted medical use in treatment in the United States.'' 76 FR 40552 (2011). Thus, any attempt to compare the relative abuse potential of schedule I substance to that of a substance in another schedule is inconsequential since a schedule I substance must remain in schedule I until it has been found to have a currently accepted medical use in treatment in the United States.

Factor 2: Scientific Evidence of the Drug's Pharmacological Effects, if Known

The HHS stated that there are large amounts of scientific data on the neurochemistry, mechanistic effects, toxicology, and pharmacology of marijuana. A scientific evaluation, as conducted by the HHS and the DEA, of marijuana's neurochemistry, human and animal behavioral pharmacology, central nervous system effects, and other pharmacological effects (*e.g.* cardiovascular, immunological effects) is presented below.

[44] *See* Americans for Safe Access, 706 F.3d at 440.

Neurochemistry

Marijuana contains numerous constituents such as cannabinoids that have a variety of pharmacological actions. The HHS stated that different marijuana samples derived from various cultivated strains may differ in their chemical constituents including Δ^9-THC and other cannabinoids. Therefore marijuana products from different strains will have different biological and pharmacological effects. The chemical constituents of marijuana are discussed further in Factor 3.

The primary site of action for cannabinoids such as Δ^9-THC is at the cannabinoid receptor. Two cannabinoid receptors, CB1 and CB2, have been identified and characterized (Battista et al., 2012; Piomelli, 2005) and are G-protein-coupled receptors. Activation of these inhibitory G-protein-coupled receptors inhibits adenylate cyclase activity, which prevents conversion of ATP to cyclic AMP. Cannabinoid receptor activation also results in inhibition of N- and P/Q-type calcium channels and activates inwardly rectifying potassium channels (Mackie et al., 1995; Twitchell et al., 1997). The HHS mentioned that inhibition of N-type calcium channels decreases neurotransmitter release and this may be the underlying mechanism in the ability of cannabinoids to inhibit acetylcholine, norepinephrine and glutamate from specific areas of the brain. These cellular actions may underlie the antinociceptive and psychoactive effects of cannabinoids. Δ^9-THC acts as an agonist at cannabinoid receptors.

CB1 receptors are primarily found in the central nervous system and are located mainly in the basal ganglia, hippocampus and cerebellum of the brain (Howlett et al., 2004). CB1 receptors are also located in peripheral tissues such as the immune system (De Petrocellis and Di Marzo, 2009), but the concentration of CB1 receptors there is considerably lower than in the central nervous system (Herkenham et al., 1990; 1992). CB2 receptors are found primarily in the immune system and predominantly in B lymphocytes and natural killer cells (Bouaboula et al., 1993). CB2 receptors are also found in the central nervous system, primarily in the cerebellum and hippocampus (Gong et al., 2006).

Two endogenous ligands to the cannabinoid receptors, anandamide and arachidonyl glycerol (2–AG), were identified in 1992 (Devane et al., 1992) and 1995 (Mechoulam et al., 1995), respectively. Anandamide is a low-efficacy agonist (Brievogel and Childers, 2000) and 2–AG is a high efficacy agonist (Gonsiorek et al., 2000) to the cannabinoid receptors. These endogenous ligands are present in both the central nervous system and in the periphery (HHS, 2015).

Δ^9-THC and cannabidiol (CBD) are two of the major cannabinoids in marijuana. Δ^9-THC is the major psychoactive cannabinoid (Wachtel et al., 2002). Δ^9-THC has similar affinity for CB1 and CB2 receptors and acts as a weak agonist at CB2 receptors. The HHS indicated that activation of CB1 receptors mediates psychotropic effects of cannabinoids. CBD has low affinity for both CB1 and CB2 receptors. CBD has antagonistic effects at CB1 receptors, and some inverse agonistic properties at CB2 receptors.

Animal Behavioral Effects

Animal abuse potential studies (drug discrimination, self-administration, conditioned place preference) are discussed more fully in Factor 1. Briefly, it was consistently demonstrated that Δ^9-THC, the primary psychoactive component in marijuana, and other cannabinoids in marijuana have a distinct drug discriminative profile. In addition, animals self-administer Δ^9-THC, and Δ^9-THC in low doses produces conditioned place preference.

Central Nervous System Effects

Psychoactive Effects

The clinical psychoactive effects of marijuana are discussed more fully in Factor 1. Briefly, the psychoactive effects from marijuana use are considered pleasurable and associated with drug-seeking or drug-taking (HHS, 2015; Maldonado, 2002). Further, it was noted by HHS that marijuana users prefer higher concentrations of the principal psychoactive component (Δ^9-THC) over lower concentrations (HHS, 2015).

Studies have evaluated psychoactive effects of THC in the presence of high CBD, CBC, or CBN ratios. Even though some studies suggest that CBD may decrease some of Δ^9-THC's psychoactive effects, the HHS found that the ratios of CBD to Δ^9-THC administered in the studies were not comparable to the amounts found in marijuana used by most people (Dalton et al., 1976; Karniol et al., 1974; Zwardi et al., 1982). In fact, the CBD ratios in these studies are significantly higher than the CBD found in most marijuana currently found on the streets (Mehmedic et al., 2010). HHS indicated that most of the marijuana available on the street has a high THC and low CBD content and therefore any lessening of THC's psychoactive effects by CBD will not occur for most marijuana users (HHS, 2015). Dalton et al. (1976) reported that when volunteers smoked cigarettes with a ratio of 7 CBD to 1 Δ^9-THC (0.15 mg/kg CBD and 0.025 mg/kg Δ^9-THC), there was a significant decrease in ratings of acute subjective effects and achieving a ''high'' in comparison to smoking Δ^9-THC alone. In oral administration studies, the subjective effects and anxiety produced by combination of CBD and THC in a ratio of at least 1:2 CBD to Δ^9-THC (15, 30, 60 mg CBD to 30 mg Δ^9-THC; Karniol et al., 1974) or a ratio of 2:1 CBD to Δ^9-THC (1 mg/kg CBD to 0.5 mg/kg Δ^9-THC; Zuardi et al., 1982) are less than those produced by Δ^9-THC administered alone.

In one study (Ilan et al., 2005), the authors calculated the naturally occurring concentrations of CBC and CBD in marijuana cigarettes with either 1.8 or 3.6% Δ^9-THC by weight. The authors varied the concentrations of CBC and CBD for each concentration of Δ^9-THC in the marijuana cigarettes. Administrations in healthy marijuana users (n=23) consisted of either: (1) Low CBC (0.1% by weight) and low CBD (0.2% by weight); (2) high CBC (0.5% by weight) and low CBD; (3) low CBC and high CBD (1.0% by weight); or 4) high CBC and high CBD and the users were divided into low Δ^9-THC (1.8% by weight) and high Δ^9-THC (3.6% by weight) groups. Subjective psychoactive effects were significantly greater for all groups in comparison to placebo and there were no significant differences in effects among the treatments (Ilan et al., 2005).

The HHS also referred to a study with Δ^9-THC and cannabinol (CBN) (Karniol et al., 1975). In this study, oral administration of either 12.5, 25, or 50 mg CBN combined with 25 mg Δ^9-THC (ratio of at least 1:2 CBN to Δ^9-THC) significantly increased subjective psychoactive ratings of Δ^9-THC compared to Δ^9-THC alone (Karniol et al., 1975).

Behavioral Impairment

Several factors may influence marijuana's behavioral effects including the duration (chronic or short term), frequency (daily, weekly, or occasionally), and amount of use (heavy or moderate). Researchers have examined how long behavioral impairments persist following chronic marijuana use. These studies used self-reported histories of exposure duration, frequency, and amount of marijuana use, and administered several performance and cognitive tests at different time points following

marijuana abstinence. According to HHS, behavioral impairments may persist for up to 28 days of abstinence in chronic marijuana users.

Psychoactive effects of marijuana can lead to behavioral impairment including cognitive decrements and decreased ability to operate motor vehicles (HHS, 2015). Block et al. (1992) evaluated cognitive measures in 48 healthy male subjects following smoking a marijuana cigarette that contained 2.57% or 19 mg Δ^9-THC by weight or placebo. Each subject participated in eight sessions (four sessions with marijuana; four sessions with placebo) and several cognitive and psychomotor tests were administered (*e.g.* verbal recall, facial recognition, text learning, reaction time). Marijuana significantly impaired performances in most of these cognitive and psychomotor tests (Block et al., 1992).

Ramaekers et al. (2006) reported that in 20 recreational users of marijuana, acute administration of 250 µg/kg and 500 µg/kg Δ^9-THC in smoked marijuana resulted in dose-dependent impairments in cognition, motor impulsivity, motor control (tracking impairments), and risk taking. In another study (Kurzthaler et al., 1999), when 290 µg/kg Δ^9-THC was administered via a smoked marijuana cigarette in 30 healthy volunteers with no history of substance abuse there were significant impairments of motor speed and accuracy. Furthermore, administration of 3.95% Δ^9-THC in a smoked marijuana cigarette increased the latency in a task of simulated braking in a vehicle (Liguori et al., 1998). The HHS noted that the motor impairments reported in these studies (Kurzthaler et al., 1999; Liguori et al., 1998) are critical skills needed for operating a vehicle.

As mentioned in the HHS document, some studies examined the persistence of the behavioral impairments immediately after marijuana administration. Some of marijuana's acute effects may still be present for at least 24 hours after the acute psychoactive effects have subsided. In a brief communication, Heishmann et al. (1990) reported that there were cognitive impairments (digit recall and arithmetic tasks) in two out of three experienced marijuana smokers for 24 hours after smoking marijuana cigarettes containing 2.57% Δ^9-THC. However, Fant et al. (1998) evaluated subjective effects and performance measures for up to 25 hours in 10 healthy males after exposure to either 1.8% or 3.6% Δ^9-THC in marijuana cigarettes. Peak decrements in subjective and performance measures were noted within 2 hours of marijuana exposure but there were minimal residual alterations in subjective or performance measures at 23–25 hours after exposure.

Persistence of behavioral impairments following repeated and chronic use of marijuana has also been investigated and was reviewed in the HHS document (HHS, 2015). In particular, researchers examined how long behavioral impairments last following chronic marijuana use. In studies examining persistence of effects in chronic and heavy marijuana users, there were significant decrements in cognitive and motor function tasks in all studies of up to 27 days, and in most studies at 28 days (Solowij et al., 2002; Messinis et al., 2006; Lisdahl and Price, 2012; Pope et al., 2002; Bolla et al., 2002; Bolla et al., 2005). In studies that followed heavy marijuana users for longer than 28 days and up to 20 years of marijuana abstinence, cognitive and psychomotor impairments were no longer detected (Fried et al., 2005; Lyons et al., 2004; Tait et al., 2011). For example, Fried et al. (2005) reported that after 3 months of abstinence from marijuana, any deficits in intelligence (IQ), memory, and processing speeds following heavy marijuana use were no longer observed (Fried et al., 2005). In a meta-analysis that examined non-acute and long-lasting effects of marijuana, any deficits in neurocognitive performance that were observed within the first month were no longer apparent after approximately one month of abstinence (Schreiner and Dunn, 2012). HHS further notes that in moderate marijuana users deficits in decision-making skills were not observed after 25 days of abstinence and additionally IQ, immediate memory and delayed memory skills were not significantly impacted as observed with heavy and chronic marijuana users (Fried et al., 2005; HHS, 2015)

As mentioned in the HHS document (HHS, 2015), the intensity and persistence of neurological impairment from chronic marijuana use also may be dependent on the age of first use. In two separate smaller scale studies (less than 100 participants per exposure group), Fontes et al. (2011) and Gruber et al. (2012) compared neurological function in early onset (chronic marijuana use prior to age 15 or 16) and late onset (chronic marijuana use after age 15 or 16) heavy marijuana users and found that there were significant deficits in executive neurological function in early onset users which were not observed or were less apparent in late onset users. In a prospective longitudinal birth cohort study following 1,037 individuals (Meier et al., 2012), a significant decrease in IQ and neuropsychological performance was observed in adolescent-onset users and persisted even after abstinence from marijuana for at least one year. However, Meier et al (2012) reported in there was no significant change in IQ in adult-onset users.

The HHS noted that there is some evidence that the severity of the persistent neurological impairments may also be due in part to the amount of marijuana usage. In the study mentioned above, Gruber et al. (2012) found that the early onset users consumed three times as much marijuana per week and used it twice as often as late onset users. Meier et al. (2012) reported in their study, mentioned above, that there was a correlation between IQ deficits in adolescent onset users and the increased amount of marijuana used.

Behavioral Effects of Prenatal Exposure

In studies that examined effects of prenatal marijuana exposure, many of the pregnant women also used alcohol and tobacco in addition to marijuana. Even though other drugs were used in conjunction with marijuana, there is evidence of an association between heavy prenatal marijuana exposure and deficits in some cognitive function. There have been two prospective longitudinal birth cohort studies following individuals prenatally exposed to marijuana from birth until adulthood: The Ottawa Prenatal Prospective Study (OPPS; Fried et al., 1980), and the Maternal Health Practices and Child Development Project (MHPCD; Day et al., 1985). Both longitudinal studies report that heavy prenatal marijuana use is associated with decreased performance on tasks assessing memory, verbal and quantitative reasoning in 4-year-olds (Fried and Watkinson, 1990) and in 6 year olds (Goldschmidt et al., 2008). In subsequent studies with the OPPS cohort, deficits in sustained attention were reported in children ages 6 and 13–16 years (Fried et al., 1992; Fried, 2002) and deficits in executive neurological function were observed in 9- and 12-year-old children (Fried et al., 1998). DEA further notes that with the MHPCD cohort, follow-up studies reported an increased rate of delinquent behavior (Day et al., 2011) and decreased achievement test scores (Goldschmidt et al., 2012) at age 14. When the MHPCD cohort was followed to age 22, there was a marginal (p = 0.06) increase in psychosis with prenatal marijuana exposure and early onset of marijuana use (Day et al., 2015).

Association of Marijuana Use With Psychosis

There has been extensive research to determine whether marijuana usage is associated with development of schizophrenia or other psychoses, and the HHS indicated that the available data do not suggest a causative link between marijuana and the development of psychosis (HHS, 2015; Minozzi et al., 2010). As mentioned in the HHS review (HHS, 2015), numerous large scale longitudinal studies demonstrated that subjects who used marijuana do not have a greater incidence of psychotic diagnoses compared to non-marijuana users (van Os et al., 2002; Fergusson et al., 2005; Kuepper et al., 2011). Further, the HHS commented that when analyzing the available data examining the association between marijuana and psychosis, it is critical to differentiate whether the patients in a study are already diagnosed with psychosis or if the individuals have a limited number of symptoms associated with psychosis without qualifying for a diagnosis of the disorder.

As mentioned by the HHS, some of the studies examining the association between marijuana and psychosis utilized non-standard methods to categorize psychosis and these methods did not conform to the criteria in the Diagnostic and Statistical Manual (DSM–5) or the International Classification of Diseases (ICD–10) and would not be appropriate for use in evaluating the association between marijuana use and psychosis. For example, researchers characterized psychosis as ''schizophrenic cluster'' (Maremmani et al., 2004), ''subclinical psychotic symptoms'' (van Gastel et al., 2012), ''pre-psychotic clinical high risk'' (van der Meer et al., 2012), and symptoms related to ''psychosis vulnerability'' (Griffith-Lendering et al., 2012).

The HHS discussed an early epidemiological study conducted by Andreasson et al. (1987), which examined the link between psychosis and marijuana use. In this study, about 45,000 18- and 19-year-old male Swedish subjects provided detailed information on their drug-taking history and 274 of these subjects were diagnosed with schizophrenia over a 14-year period (1969–1983). Out of the 274 subjects diagnosed with psychosis, 21 individuals (7.7%) had used marijuana more than 50 times, while 197 individuals (72%) never used marijuana. As presented by the authors (Andreasson et al., 1987), individuals who claimed to take marijuana on more than 50 occasions were 6 times more likely to be diagnosed with schizophrenia than those who had never consumed the drug. The authors concluded that marijuana users who are vulnerable to developing psychoses are at the greatest risk for schizophrenia. In a 35 year follow up to the subjects evaluated in Andreasson et al. (1987), Manrique-Garcia et al. (2012) reported similar findings. In the follow up study, 354 individuals developed schizophrenia. Of those, 32 individuals (9%) had used marijuana more than 50 times and were 6.3 times more likely to develop schizophrenia. 255 of the 354 individuals (72%) never used marijuana.

The HHS also noted that many studies support the assertion that psychosis from marijuana usage may manifest only in individuals already predisposed to development of psychotic disorders. Marijuana use may precede diagnosis of psychosis (Schimmelmann et al., 2011), but most reports indicate that prodromal symptoms of schizophrenia are observed prior to marijuana use (Schiffman et al., 2005). In a review examining gene-environmental interaction between marijuana exposure and the development of psychosis, it was concluded that there is some evidence to support that marijuana use may influence the development of psychosis but only for susceptible individuals (Pelayo-Teran et al., 2012).

Degenhardt et al. (2003) modeled the prevalence of schizophrenia against marijuana use across eight birth cohorts in individuals born during 1940 to 1979 in Australia. Even though there was an increase in marijuana use in the adult subjects over this time period, there was not an increase in diagnoses of psychosis for these same subjects. The authors concluded that use of marijuana may increase schizophrenia only in persons vulnerable to developing psychosis.

Cardiovascular and Autonomic Effects

The HHS stated that acute use of marijuana causes an increase in heart rate (tachycardia) and may increase blood pressure (Capriotti et al., 1988; Benowitz and Jones, 1975). There is some evidence that associates the increased heart rate from Δ^9-THC exposure with excitation of the sympathetic and depression of the parasympathetic nervous systems (Malinowska et al., 2012). Tolerance to tachycardia develops with chronic exposure to marijuana (Jones, 2002; Sidney, 2002).

Prolonged exposure to Δ^9-THC results in a decrease in heart rate (bradycardia) and hypotension (Benowitz and Jones, 1975). These effects are thought to be mediated through peripherally located, presynaptic CB1 receptor inhibition of norepinephrine release with possible direct activation of vascular cannabinoid receptors (Wagner et al., 1998; Pacher et al., 2006).

As stated in the HHS recommendation (HHS, 2015), marijuana exposure causes orthostatic hypotension (fainting-like feeling; sudden drop in blood pressure upon standing up) and tolerance can develop to this effect upon repeated, chronic exposure (Jones, 2002). Tolerance to orthostatic hypotension is potentially related to plasma volume expansion, but tolerance does not develop to supine hypotensive effects (Benowitz and Jones, 1975).

Marijuana smoking, particularly by those with some degree of coronary artery or cerebrovascular disease, poses risks such as increased cardiac work, increased catecholamines and carboxyhemoglobin, myocardial infarction and postural hypotension (Benowitz and Jones, 1981; Hollister, 1988; Mittleman et al., 2001; Malinowska et al., 2012). However, electrocardiographic changes were minimal after administration of large cumulative doses of Δ^9-THC (Benowitz and Jones, 1975)

The DEA notes two recent reports that reviewed several case studies on marijuana and cardiovascular complications (Panayiotides, 2015; Hackam, 2015). Panayiotides (2015) reported that approximately 25.6% of the cardiovascular cases from marijuana use resulted in death from data provided by the French Addictovigilance Network during the period of 2006–2010. Several case studies on marijuana usage and cardiovascular events were discussed and it was concluded that although a causal link cannot be established due to not knowing exact amounts of marijuana used in the cases and confounding variables, the available evidence supports a link between marijuana and cardiotoxicity. Hackham (2015) reviewed 34 case reports or case series reports of marijuana and stroke/ischemia in 64 stroke patients and reported that in 81% of the cases there was a temporal relationship between marijuana usage and stroke or ischemic event. The author concluded that collective analysis of the case reports supports a causal link between marijuana use and stroke.

Respiratory Effects

The HHS stated that transient bronchodilation is the most typical respiratory effect of acute exposure to marijuana (Gong et al., 1984). In a recent

longitudinal study, information on marijuana use and pulmonary data function were collected from 5,115 individuals over 20 years from 4 communities in the United States (Oakland, CA; Chicago, IL; Minneapolis, MN; Birmingham, AL) (Pletcher et al., 2012). Of the 5,115 individuals, 795 individuals reported use of only marijuana (without tobacco). The authors reported that occasional use of marijuana (7 joint-years for lifetime or 1 joint/day for 7 years or 1 joint/week for 49 years) does not adversely affect pulmonary function. Pletcher et al. (2012) further concluded that there is some preliminary evidence suggesting that heavy marijuana use may have a detrimental effect on pulmonary function, but the sample size of heavy marijuana users in the study was too small. Further, as mentioned in the HHS recommendation document (HHS, 2015), long-term use of marijuana may lead to chronic cough, increased sputum, as well as increased frequency of chronic bronchitis and pharyngitis (Adams and Martin, 1996; Hollister, 1986).

The HHS stated that the evidence that marijuana may lead to cancer of the respiratory system is inconsistent, with some studies suggesting a positive correlation while others do not (Lee and Hancox, 2011; Tashkin, 2005). The HHS noted a case series that reported lung cancer occurrences in three marijuana smokers (age range 31–37 years) with no history of tobacco smoking (Fung et al., 1999). Furthermore, in a case-control study (n = 173 individuals with squamous cell carcinoma of the head and neck; n = 176 controls; Zhang et al., 1999), prevalence of marijuana use was 9.7% in controls and 13.9% in cases and the authors reported that marijuana use may dose-dependently interact with mutagenic sensitivity, cigarette smoking, and alcohol use to increase risk associated with head and neck cancers (Zhang et al., 1999). However, in a large clinical study with 1,650 subjects, no positive correlation was found between marijuana use and lung cancer (Tashkin et al., 2006). This finding held true regardless of the extent of marijuana use when both tobacco use and other potential confounding factors were controlled. The HHS concluded that new evidence suggests that the effects of smoking marijuana on respiratory function and cancer are different from the effects of smoking tobacco (Lee and Hancox, 2011).

The DEA further notes the publication of recent review articles critically evaluating the association between marijuana and lung cancer. Most of the reviews agree that the association is weak or inconsistent (Huang et al., 2015; Zhang et al., 2015; Gates et al., 2014; Hall and Degenhardt, 2014). Huang et al. (2015) identified and reviewed six studies evaluating the association between marijuana use and lung cancer and the authors concluded that an association is not supported most likely due to the small amounts of marijuana smoked in comparison to tobacco. Zhang et al. (2015) examined six case control studies from the US, UK, New Zealand, and Canada within the International Lung Cancer Consortium and found that there was a weak association between smoking marijuana and lung cancer in individuals who never smoked tobacco, but precision of the association was low at high marijuana exposure levels. Hall and Degenhardt (2014) noted that even though marijuana smoke contains several of the same carcinogens and co-carcinogens as tobacco smoke (Roth et al., 1998) and has been found to be mutagenic and carcinogenic in the mouse skin test, epidemiological studies have been inconsistent, but more consistent positive associations have been reported in case control studies. Finally Gates et al. (2014), reviewed the studies evaluating marijuana use and lung cancer and concluded that there is evidence that marijuana produces changes in the respiratory system (precursors to cancer) that could lead to lung cancer, but overall association is weak between marijuana use and lung cancer especially when controlling for tobacco use.

Endocrine System

Reproductive Hormones

The HHS stated that administration of marijuana to humans does not consistently alter the endocrine system. In a controlled human exposure study (n = 4 males), subjects were acutely administered smoked marijuana containing 2.8% Δ^9-THC or placebo and an immediate significant decrease in luteinizing hormone and an increase in cortisol was reported in the subjects that smoked marijuana (Cone et al., 1986). Furthermore, as cited by the HHS, two later studies (Dax et al., 1989; Block et al., 1991) reported no changes in hormone levels. Dax et al. (1989) recruited male volunteers (n = 17) that were occasional or heavy users of marijuana. Following exposure to smoked Δ^9-THC (18 mg/cigarette) or oral Δ^9-THC (10 mg three times per day for three days and on the morning of the fourth day), the subjects in that study showed no changes in plasma adrenocorticotropic hormone (ACTH), cortisol, prolactin, luteinizing hormone, or testosterone levels. Additionally, Block et al. (1991) compared plasma hormone levels amongst non-users as well as infrequent, moderate, and frequent users of marijuana (n = 93 men and 56 women) and found that chronic use of marijuana (infrequent, moderate, and frequent users) did not significantly alter concentrations of testosterone, luteinizing hormone, follicle stimulating hormone, prolactin, or cortisol.

The HHS noted that there is a discrepancy in the effect of marijuana on female reproductive system functionality between animals and humans (HHS, 2015). Female rhesus monkeys that were administered 2.5 mg/kg Δ^9-THC, i.m., during days 1–18 of the menstrual cycle had reduced progesterone levels and ovulation was suppressed (Asch et al., 1981). However, women who smoked marijuana (1 gram marijuana cigarette with 1.8% Δ^9-THC) during the periovulatory period (24–36 hours prior to ovulation) did not exhibit changes in reproductive hormone levels or their menstrual cycles (Mendelson and Mello, 1984). In a review article by Brown and Dobs (2002), the authors state that endocrine changes observed with marijuana are no longer observed with chronic administration and this may be due to drug tolerance.

Reproductive Cancers

The HHS stated that recent studies support a possible association between frequent, long-term marijuana use and increased risk of testicular germ cell tumors. In a hospital-based case-control study, the frequency of marijuana use was compared between testicular germ cell tumor (TGCT) patients (n = 187) and controls (n = 148) (Trabert et al., 2011). TGCT patients were more likely to be frequent marijuana users than controls with an odds ratio (OR) of 2.2 (95% confidence limits of 1.0–5.1) and were less likely to be infrequent or short-term users with odds ratios of 0.5 and 0.6, respectively in comparison to controls (Trabert et al., 2011). The DEA further notes that in two population-based case-control studies (Daling et al., 2009; Lacson et al., 2012), marijuana use was compared between patients diagnosed with TGCT and matched controls in Washington State or Los Angeles County. In both studies, it was reported that TCGT patients were twice as likely as controls to use marijuana. Authors of both studies concluded that marijuana use is associated with an elevated risk of TGCT (Daling et al., 2009; Lacson et al., 2012).

The HHS cited a study (Sarfaraz et al., 2005) demonstrating that WIN 55,212–2 (a mixed CB1/CB2 agonist) induces apoptosis (one form of cell death) in

prostate cancer cells and decreases expression of androgen receptors and prostate specific antigens, suggesting a potential therapeutic value for cannabinoid agonists in the treatment of prostate cancer, an androgen-stimulated type of carcinoma.

Other hormones (e.g. Thyroid, Appetite)

In more recent studies, as cited by the HHS, chronic marijuana use by subjects (n = 39) characterized as dependent on marijuana according to the ICD–10 criteria did not affect serum levels of thyroid hormones: TSH (thyrotropin), T4 (thyroxine), and T3 (triiodothyronine) (Bonnet, 2013). With respect to appetite hormones, in a pilot study with HIV-positive males, smoking marijuana dose-dependently increased plasma levels of ghrelin and leptin and decreased plasma levels of peptide YY (Riggs et al., 2012).

The HHS stated that Δ^9-THC reduces binding of the corticosteroid dexamethasone in hippocampal tissue from adrenalectomized rats and acute Δ^9-THC releases corticosterone, with tolerance developing to this effect with chronic administration (Eldridge ≤et al., 1991). These data suggest that Δ^9-THC may interact with the glucocorticoid receptor system.

Immune System

The HHS stated that cannabinoids alter immune function but that there can be differences between the effects of synthetic, natural, and endogenous cannabinoids (Croxford and Yamamura, 2005; Tanasescu and Constantinescu, 2010).

The HHS noted that there are conflicting results in animal and human studies with respect to cannabinoid effects on immune functioning in subjects with compromised immune systems. Abrams et al. (2003) examined the effects of marijuana and Δ^9-THC in 62 HIV–1-infected patients. Subjects received one of three treatments, three times a day: smoked marijuana cigarette containing 3.95% Δ^9-THC, oral tablet containing Δ^9-THC (2.5 mg oral dronabinol), or oral placebo. There were no changes in CD4+ and CD8+ cell counts, HIV RNA levels, or protease inhibitor levels in any of the treatment groups (Abrams et al., 2003). Therefore, use of cannabinoids showed no short-term adverse virologic effects in individuals with compromised immune systems. Conversely, Roth et al. (2005) reported that in immunodeficient mice implanted with human blood cells infected with HIV, exposure to Δ^9-THC *in vivo* suppresses immune function, increases HIV co-receptor expression, and acts as a cofactor to enhance HIV replication.

The DEA notes two recent clinical studies reporting a decrease in cytokine and interleukin levels following marijuana use. Keen et al. (2014) compared the differences in the levels of IL–6 (interleukin-6), a proinflammatory cytokine, amongst non-drug users (n = 78), marijuana only users (n = 46) and marijuana plus other drug users (n = 45) in a community-based sample of middle-aged African Americans (Keen et al., 2014). After adjusting for confounders, analyses revealed that lifetime marijuana only users had significantly lower IL–6 levels than the nonuser group. Further, Sexton et al. (2014) compared several immune parameters in healthy individuals and subjects with multiple sclerosis (MS) and found that the chronic use of marijuana resulted in reduced monocyte migration, and decreased levels of CCL2 and IL–17 in both healthy and MS groups.

The DEA also notes a review suggesting that Δ^9-THC suppresses the immune responses in experimental animal models and *in vitro* and that these changes may be primarily mediated through the CB2 cannabinoid receptor (Eisenstein and Meissler, 2015).

Factor 3: The State of the Current Scientific Knowledge Regarding the Drug or Substance

Chemistry

The HHS stated that marijuana, also known as *Cannabis sativa L.,* is part of the Cannabaceae plant family and is one of the oldest cultivated crops. The term ''marijuana'' is generally used to refer to a mixture of the dried flowering tops and leaves from *Cannabis.* Marijuana users primarily smoke the marijuana leaves, but individuals also ingest marijuana through food infused with marijuana and its extracts. *Cannabis sativa* is the primary species of *Cannabis* that is illegally marketed in the United States. Marijuana is one of three major derivatives sold as separate illicit products, the other two being hashish and hash oil. Hashish is composed of the dried and compressed cannabinoid-rich resinous material of *Cannabis* and is found as balls and cakes as well as other forms. Individuals may break off pieces and place them into a pipe to smoke. Hash oil, a viscous brown or amber colored liquid, is produced by solvent extraction of cannabinoids from *Cannabis* and contains approximately 50% cannabinoids. One to two drops of hash oil on a cigarette has been reported to produce the equivalent of a single marijuana cigarette (DEA, 2015).

Different marijuana samples are derived from numerous cultivated strains and may have different chemical compositions including levels of Δ^9-THC and other cannabinoids (Appendino et al., 2011). A consequence of having different chemical compositions in the various marijuana samples is that there will be significant differences in safety, biological, pharmacological, and toxicological profiles and therefore, according to the HHS, all *Cannabis* strains cannot be considered collectively because of the variations in chemical composition. Furthermore, the concentration of Δ^9-THC and other cannabinoids present in marijuana may vary due to growing conditions and processing of the plant after harvesting. For example, the plant parts collected such as flowers, leaves and stems can influence marijuana's potency, quality, and purity (Adams and Martin, 1996; Agurell et al., 1984; Mechoulam, 1973). Variations in marijuana harvesting have resulted in potencies ranging from a low of 1 to 2% up to a high of 17% as indicated by cannabinoid content. The concentration of Δ^9-THC averages approximately 12% by weight in a typical marijuana mixture of leaves and stems. However, some specifically grown and selected marijuana samples can contain 15% or greater Δ^9-THC (Appendino et al., 2011). As a result, the Δ^9-THC content in a 1 gram marijuana cigarette can range from as little as 3 milligrams to 150 milligrams or more. In a systematic review conducted by Cascini et al. (2012), it was reported that marijuana's Δ^9-THC content has increased significantly from 1979–2009.

Since there is considerable variability in the cannabinoid concentrations and chemical constituency among marijuana samples, the interpretation of clinical data with marijuana is complicated. A primary issue is the lack of consistent concentrations of Δ^9-THC and other substances in marijuana which complicates the interpretation of the effects of different marijuana constituents. An added issue is that the non-cannabinoid components in marijuana may potentially modify the overall pharmacological and toxicological properties of various marijuana strains and products.

Various *Cannabis* strains contain more than 525 identified natural constituents including cannabinoids, 21 (or 22) carbon terpenoids found in the plant, as well as their carboxylic acids, analogues, and transformation products (Agurell et al., 1984; 1986; Mechoulam, 1973; Appendino et al., 2011). To date,

more than 100 cannabinoids have been characterized (ElSohly and Slade, 2005; Radwan et al., 2009; Appendino et al., 2011), and most major cannabinoid compounds occurring naturally have been identified. There are still new and comparably more minor cannabinoids being characterized (Pollastro et al., 2011). The majority of the cannabinoids are found in *Cannabis.* One study reported accumulation of two cannabinoids, cannabigerol and its corresponding acid, in *Helichrysum* (*H. umbraculigerum*) which is a non-*Cannabis* source (Appendino et al., 2011).

Of the cannabinoids found in marijuana, Δ^9-THC (previously known as Δ^1-THC) and delta-8-tetrahydrocannabinol (Δ^8-THC, Δ^6-THC) have been demonstrated to produce marijuana's psychoactive effects. Psychoactive effects from marijuana usage have been mainly attributed to Δ^9-THC because Δ^9-THC is present in significantly more quantities than Δ^8-THC in most marijuana varieties. There are only a few marijuana strains that contain Δ^8-THC in significant amounts (Hively et al., 1966). Δ^9-THC is an optically active resinous substance that is extremely lipophilic. The chemical name for Δ^9-THC is (6a*R*-trans)-6a,7,8,10a-tetrahydro-6,6,9-trimethyl-3-pentyl-6*H*-dibenzo-[b,d]pyran-1-ol, or (–)-delta9-(trans)-tetrahydrocannabinol. The (–)-trans Δ^9-THC isomer is pharmacologically 6 to 100 times more potent than the (+)-trans isomer (Dewey et al., 1984).

Other relatively well-characterized cannabinoids present in marijuana include cannabidiol (CBD), cannabichromene (CBC), and cannabinol (CBN). CBD and CBC are major cannabinoids in marijuana and are both lipophilic. The chemical name for CBD is 2-[(1*R*,6*R*)-3-methyl-6-prop-1-en-2-ylcyclohex-2-en-1-yl]-5-pentylbenzene-1,3-diol and the chemical name for CBC is 2-methyl-2-(4-methylpent-3-enyl)-7-pentyl-5-chromenol. CBN is a minor naturally-occurring cannabinoid with weak psychoactivity and is also a major metabolite of Δ^9-THC. The chemical name for CBN is 6,6,9-trimethyl-3-pentyl-benzo[c]chromen-1-ol.

In summary, marijuana has several strains with high variability in the concentrations of Δ^9-THC, the main psychoactive component, as well as other cannabinoids and compounds. Marijuana is not a single chemical and does not have a consistent and reproducible chemical profile with predictable or consistent clinical effects. In the HHS recommendation for marijuana scheduling (HHS, 2015), it was recommended that investigators consult a guidance for industry entitled, *Botanical Drug Products,*[45] which provides information on the approval of botanical drug products. Specifically, in order to investigate marijuana in support of a New Drug Application (NDA), clinical studies under an Investigational New Drug (IND) application should include ''consistent batches of a particular marijuana product for [a] particular disease.'' (HHS, 2015). Furthermore, the HHS noted that investigators must provide data meeting the requirements for new drug approval as stipulated in 21 CFR 314.50 (HHS, 2015).

Human Pharmacokinetics

Pharmacokinetics of marijuana in humans is dependent on the route of administration and formulation (Adams and Martin, 1996; Agurell et al., 1984; Agurell et al., 1986). Individuals primarily smoke marijuana as a cigarette (weighing between 0.5 and 1 gram) or in a pipe. More recently, vaporizers have been used as another means for individuals to inhale marijuana. Marijuana may also be ingested orally in foods or as an extract in ethanol or other solvents. Pharmacokinetic studies with marijuana focused on evaluating the absorption, metabolism, and elimination profile of Δ^9-THC and other cannabinoids (Adams and Martin, 1996; Agurell et al., 1984; Agurell et al., 1986).

Absorption and Distribution of Inhaled Marijuana Smoke

There is high variability in the pharmacokinetics of Δ^9-THC and other cannabinoids from smoked marijuana due to differences in individual smoking behavior even under controlled experimental conditions (Agurell et al., 1986; Herning et al., 1986; Huestis et al., 1992a). Experienced marijuana users can titrate and regulate the dose by holding marijuana smoke in their lungs for an extended period of time resulting in increased psychoactive effects by prolonging absorption of the smoke. This property may also help explain why there is a poor correlation between venous levels of Δ^9-THC and the intensity of effects and intoxication (Agurell et al., 1986; Barnett et al., 1985; Huestis et al., 1992a). The HHS recommended that puff and inhalation volumes should be tracked in experimental studies because the concentration of cannabinoids can vary at different stages of smoking.

Δ^9-THC from smoked marijuana is rapidly absorbed within seconds. Psychoactive effects are observed immediately following absorption with measurable neurological and behavioral changes for up to 6 hours (Grotenhermen, 2003; Hollister, 1986; Hollister, 1988). Δ^9-THC is distributed to the brain in a rapid and efficient manner. Bioavailability of Δ^9-THC from marijuana (from a cigarette or pipe) ranges from 1 to 24% with the fraction absorbed rarely exceeding 10 to 20% (Agurell et al., 1986; Hollister, 1988). The low and variable bioavailability of Δ^9-THC is due to loss in side-stream smoke, variation in individual smoking behaviors and experience, incomplete absorption of inhaled smoke, and metabolism in lungs (Herning et al., 1986; Johansson et al., 1989). After cessation of smoking, Δ^9-THC venous levels decline within minutes and continue to decline to about 5% to 10% of the peak level within an hour (Agurell et al., 1986; Huestis et al., 1992a; Huestis et al., 1992b).

Absorption and Distribution of Orally Administered Marijuana

Following oral administration of Δ^9-THC or marijuana, onset of effects start within 30 to 90 minutes, peak after 2 to 3 hours and effects remain for 4 to 12 hours (Grotenhermen, 2003; Adams and Martin, 1996; Agurell et al., 1984; Agurell et al., 1986). Dose titration of Δ^9-THC from orally ingested marijuana is difficult for users in comparison to smoked or inhaled marijuana due to the delay in the onset of effects. Oral bioavailability of Δ^9-THC, either in its pure form or in marijuana, is low and variable with a range from 5% to 20% (Agurell et al., 1984; Agurell et al., 1986). There is also inter- and intra-subject variability of orally administered Δ^9-THC under experimental conditions and even under repeated dosing experiments (HHS, 2015). The HHS noted that in bioavailability studies using radiolabeled Δ^9-THC, Δ^9-THC plasma levels following oral administration of Δ^9-THC were low relative to plasma levels after inhaled or intravenously administered Δ^9-THC. The low and variable bioavailability of orally administered Δ^9-THC is due to first pass hepatic elimination from blood and erratic absorption from stomach and bowel (HHS, 2015).

Metabolism and Excretion of Cannabinoids From Marijuana

Studies evaluating cannabinoid metabolism and excretion focused on Δ^9-THC because it is the primary psychoactive component in marijuana.

Δ^9-THC is metabolized via microsomal hydroxylation and oxidation to both active and inactive

[45] Available at *http://www.fda.gov/Drugs/default.htm* under Guidance (Drugs).

metabolites (Lemberger et al., 1970; Lemberger et al., 1972a; Lemberger et al., 1972b; Agurell et al., 1986; Hollister, 1988). Metabolism of Δ^9-THC is consistent among frequent and infrequent marijuana users (Agurell et al., 1986). The primary active metabolite of Δ^9-THC following oral ingestion is 11-hydroxy-Δ^9-THC which is equipotent to Δ^9-THC in producing marijuana-like subjective effects (Agurell et al., 1986; Lemberger and Rubin, 1975). Metabolite levels following oral administration may be greater than that of Δ^9-THC and may contribute greatly to the pharmacological effects of oral Δ^9-THC or marijuana.

Plasma clearance of Δ^9-THC approximates hepatic blood flow at a rate of approximately 950 ml/min or greater. Rapid clearance of Δ^9-THC from blood is primarily due to redistribution to other tissues in the body rather than to metabolism (Agurell et al., 1984; Agurell et al., 1986). Outside of the liver, metabolism in most tissues is considerably slow or does not occur. The elimination half-life of Δ^9-THC ranges from 20 hours to between 10 and 13 days (Hunt and Jones, 1980). Lemberger et al. (1970) reported that the half-life of Δ^9-THC ranged from 23–28 hours in heavy marijuana users and up to 60 to 70 hours in naïve users. The long elimination half-life of Δ^9-THC is due to slow release of Δ^9-THC and other cannabinoids from tissues and subsequent metabolism. Inactive carboxy metabolites of Δ^9-THC have terminal half-lives of 50 hours to 6 days or more and serve as long-term markers in urine tests for marijuana use.

Most of the absorbed Δ^9-THC dose is eliminated in the feces and about 33% in urine. The glucuronide metabolite of Δ^9-THC is excreted as the major urine metabolite along with 18 non-conjugated metabolites (Agurell et al., 1986).

Research Status and Test of Currently Accepted Medical Use for Marijuana

According to the HHS, there are numerous human clinical studies with marijuana in the United States under FDA-regulated IND applications. Results of small clinical exploratory studies have been published in the medical literature. Approval of a human drug for marketing, however, is contingent upon FDA approval of a New Drug Application (NDA) or a Biologics License Application (BLA). According to the HHS, the FDA has not approved any drug product containing marijuana for marketing.

The HHS noted that a drug may be found to have a medical use in treatment in the United States for purposes of the CSA if the drug meets the five elements described by the DEA in 1992. Those five elements ''are both necessary and sufficient to establish a prima facie case of currently accepted medical use'' in treatment in the United States.'' (57 FR 10499, 10504 (March 26, 1992)). This five-element test, which the HHS and DEA have utilized in all such analyses for more than two decades, has been upheld by the Court of Appeals. *ACT,* 15 F.3d at 1135. The five elements that characterize ''currently accepted medical use'' for a drug are summarized here and expanded upon in the discussion below:

1. The drug's chemistry must be known and reproducible;

2. There must be adequate safety studies;

3. There must be adequate and well-controlled studies proving efficacy;

4. The drug must be accepted by qualified experts; and

5. Scientific evidence must be widely available.

In its review (HHS, 2015), the HHS evaluated the five elements with respect to the currently available research for marijuana. The HHS concluded that marijuana does not meet any of the five elements—all of which must be demonstrated to find that a drug has a ''currently accepted medical use.'' A brief summary of the HHS's evaluation is provided below.

Element #1: The drug's chemistry must be known and reproducible.

''The substance's chemistry must be scientifically established to permit it to be reproduced into dosages which can be standardized. The listing of the substance in a current edition of one of the official compendia, as defined by section 201(j) of the Food, Drug and Cosmetic Act, 21 U.S.C. 321(j), is sufficient generally to meet this requirement.'' 57 FR 10499, 10506 (March 26, 1992).

As defined by the CSA, marijuana includes all species of the genus *Cannabis,* including all strains therein.[46] Chemical constituents including Δ^9-THC and other cannabinoids vary significantly in marijuana samples derived from different strains (Appendino et al., 2011). As a result, there will be significant differences in safety, biological, pharmacological, and toxicological parameters amongst the various marijuana samples. Due to the variation of the chemical composition in marijuana samples, it is not possible to reproduce a standardized dose when considering all strains together. The HHS does advise that if a specific *Cannabis* strain is cultivated and processed under controlled conditions, the plant chemistry may be consistent enough to derive reproducible and standardized doses.

Element #2: There must be adequate safety studies.

''There must be adequate pharmacological and toxicological studies, done by all methods reasonably applicable, on the basis of which it could fairly and responsibly be concluded, by experts qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, that the substance is safe for treating a specific, recognized disorder.'' 57 FR 10499, 10506 (March 26, 1992).

The HHS stated that there are no adequate safety studies on marijuana. As indicated in their evaluation of Element #1, the considerable variation in the chemistry of marijuana complicates the safety evaluation. The HHS concluded that marijuana does not satisfy Element #2 for having adequate safety studies such that medical and scientific experts may conclude that it is safe for treating a specific ailment.

Element #3: There must be adequate and well-controlled studies of efficacy.

''There must be adequate, well-controlled, well-designed, well-conducted and well-documented studies, including clinical investigations, by experts qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, on the basis of which it could be fairly and responsibly concluded by such exports that the substance will have the intended effect in treating a specific, recognized disorder.'' 57 FR 10499, 10506 (March 26, 1992).

As indicated in the HHS's review of marijuana (HHS, 2015), there are no adequate or well-controlled studies that prove marijuana's efficacy. The FDA independently reviewed (FDA, 2015) publicly available clinical studies on marijuana published prior to February 2013 to determine if there were appropriate studies to determine marijuana's efficacy (please refer to FDA, 2015 and HHS, 2015 for more

[46] Although the CSA definition of marijuana refers only to the species ''Cannabis sativa L.,'' federal courts have consistently ruled that all species of the genus cannabis are included in this definition. *See United States* v. *Kelly,* 527 F.2d 961, 963–964 (9th Cir. 1976) (collecting and examining cases). The Single Convention (article 1, par. 1(c)) likewise defines the ''cannabis plant'' to mean ''any plant of the genus Cannabis.'' As explained above in the attachment titled ''Preliminary Note Regarding Treaty Considerations,'' 21 U.S.C. 811(d)(1) provides that, where a drug is subject to control under the Single Convention, the DEA Administrator must control the drug under the schedule he deems most appropriate to carry out such treaty obligations, without regard to the findings required by 21 U.S.C. 811(a) or 812(b) and without regard to the procedures prescribed by 21 U.S.C. 811(a) and (b).

details). After review, the FDA determined that out of the identified articles, including those identified through a search of bibliographic references and 566 abstracts located on PubMed, 11 studies met the *a priori* selection criteria, including placebo control and double-blinding. FDA and HHS critically reviewed each of the 11 studies to determine if the studies met accepted scientific standards. FDA and HHS concluded that these studies do not ''currently prove efficacy of marijuana'' for any therapeutic indication due to limitations in the study designs. The HHS indicated that these studies could be used as proof of concept studies, providing preliminary evidence on a proposed hypothesis involving a drug's effect.

Element #4: The drug must be accepted by qualified experts.

''[A] consensus of the national community of experts, qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, accepts the safety and effectiveness of the substance for use in treating a specific, recognized disorder. A material conflict of opinion among experts precludes a finding of consensus.'' 57 FR 10499, 10506 (March 26, 1992).

The HHS concluded that there is currently no evidence of a consensus among qualified experts that marijuana is safe and effective in treating a specific and recognized disorder. The HHS indicated that medical practitioners who are not experts in evaluating drugs cannot be considered qualified experts (HHS, 2015; 57 FR 10499, 10505). Further, the HHS noted that the 2009 American Medical Association (AMA) report entitled, ''Use of Cannabis for Medicinal Purposes'' does not conclude that there is a currently accepted medical use for marijuana. HHS also pointed out that state-level ''medical marijuana'' laws do not provide evidence of such a consensus among qualified experts.

Element #5: The scientific evidence must be widely available.

''In the absence of NDA approval, information concerning the chemistry, pharmacology, toxicology, and effectiveness of the substance must be reported, published, or otherwise widely available, in sufficient detail to permit experts, qualified by scientific training and experience to evaluate the safety and effectiveness of drugs, to fairly and responsibly conclude the substance is safe and effective for use in treating a specific, recognized disorder.'' 57 FR 10499, 10506 (March 26, 1992).

The HHS concluded that the currently available data and information on marijuana is not sufficient to allow scientific scrutiny of the chemistry, pharmacology, toxicology, and effectiveness. In particular, scientific evidence demonstrating the chemistry of a specific *Cannabis* strain that could provide standardized and reproducible doses is not available.

Petitioners' Major Comments in Relation to Factor 3 and the Government's Responses

(1) The petitioner states on page 2 of the petition, *''Marijuana has accepted medical use in the United States. Thirteen states accept the safety of marijuana for medical use . . . . Marijuana has been accepted as having medical use by dozens of professional medical and nursing organizations throughout the U.S. . . . Even the American Medical Association has now accepted the safety and efficacy of cannabinoid medicines and supports removal of marijuana from schedule I of the CSA in order to support further research.''*

As noted above, the HHS concluded that there is currently no evidence of a consensus among qualified experts that marijuana is safe and effective in treating a specific and recognized disorder, as required by the established standards. HHS pointed out that state-level ''medical marijuana'' laws do not provide evidence of such a consensus among qualified experts. HHS also indicated that medical practitioners who are not experts in evaluating drugs cannot be considered qualified experts (HHS, 2015; 57 FR 10499, 10505).

Further, the HHS pointed out that the 2009 AMA report entitled, ''Use of Cannabis for Medicinal Purposes'' does not conclude that there is a currently accepted medical use for marijuana. Instead, the AMA, like several other professional and medical associations, recommended further testing with marijuana to determine its medicinal value. The AMA official policy on medicinal use of marijuana is as follows: ''*Our AMA urges that marijuana's status as a federal Schedule I controlled substance be reviewed with the goal of facilitating the conduct of clinical research and development of cannabinoid-based medicines, and alternative delivery methods. This should not be viewed as an endorsement of state-based medical cannabis programs, the legalization of marijuana, or that scientific evidence on the therapeutic use of cannabis meets the current standards for a prescription drug product.*'' (AMA, 2009). The DEA further notes that the 2013 AMA House of Delegates report states that, ''*cannabis is a dangerous drug and as such is a public health concern.''* (AMA, 2013).

(2) The petitioner asserts on page 3 of the petition that, *''Several recent studies of smoked marijuana have confirmed the safety and efficacy of smoked marijuana for medical use.''*

The HHS, in its scientific and medical evaluation, reviewed marijuana clinical studies evaluating therapeutic properties and concluded that there is not enough data to confirm the safety and efficacy of smoked marijuana for use in treating a specific and recognized disorder. Relevant to efficacy, for instance, the HHS concluded, for instance, that ''smoking marijuana currently has not been shown to allow delivery of consistent and reproducible doses,'' and that the bioavailability of the delta-9 -THC from marijuana in a cigarette or pipe can range from 1 percent to 24 percent with the fraction absorbed rarely exceeding 10 to 20%. Issues relating to the safety of smoked marijuana were discussed above in Factor 2.

(3) On page 3, the petitioner states that *''marijuana has been determined to be safe for use under medical supervision by the DEA's own administrative law judge.''*

As described above, in the absence of NDA or ANDA approval, DEA has established a five-element test for determining whether the drug has a currently accepted medical use in treatment in the United States. 57 FR 10499, 10506 (March 26, 1992)). *See also ACT,* 15 F.3d at 1135. In response to this petition, HHS concluded, and DEA agrees, that the scientific evidence is insufficient to demonstrate that marijuana has a currently accepted medical use under the five-element test. The evidence was insufficient in this regard also when the DEA considered petitions to reschedule marijuana in 1992 (57 FR 10499), in 2001 (66 FR 20038), and in 2011 (76 FR 40552). Little has changed since 2011 with respect to the lack of clinical evidence necessary to establish that marijuana has a currently accepted medical use. No studies have scientifically assessed the efficacy and full safety profile of marijuana for any specific medical condition.

Factor 4: Its History and Current Pattern of Abuse

Marijuana continues to be the most widely used illicit drug. In 2013, an estimated 24.6 million Americans age 12 or older were current (past month) illicit drug users. Of those, 19.8 million were current (past month) marijuana users. As of 2013, an estimated 114.7 million Americans age 12 and older had

used marijuana or hashish in their lifetime and 33.0 million had used it in the past year.

According to the NSDUH estimates, 3.0 million people age 12 or older used an illicit drug for the first time in 2014. Marijuana initiates totaled 2.6 million in 2014. Nearly half (46.8%) of the 2.6 million new users were less than 18 years of age. In 2014, marijuana was used by 82.2% of current (past month) illicit drug users. In 2014, among past year marijuana users age 12 or older, 18.5% used marijuana on 300 or more days within the previous 12 months. This translates into 6.5 million people using marijuana on a daily or almost daily basis over a 12-month period, a significant increase from the 3.1 million daily or almost daily users in 2006 and from the 5.7 million in just the previous year. In 2014, among past month marijuana users, 41.6% (9.2 million people) used the drug on 20 or more days in the past month, a significant increase from the 8.1 million in 2013.

Marijuana is also the illicit drug with the highest numbers of past year dependence or abuse in the U.S. population. According to the 2014 NSDUH report, of the 7.1 million persons aged 12 or older who were classified with illicit drug dependence or abuse, 4.2 million of them abused or were dependent on marijuana (representing 59.0% of all those classified with illicit drug dependence or abuse and 1.6% of the total U.S. non-institutionalized population aged 12 or older).

According to the 2015 Monitoring the Future (MTF) survey, marijuana is used by a large percentage of American youths, and is the most commonly used illicit drug among American youth. Among students surveyed in 2015, 15.5% of 8th graders, 31.1% of 10th graders, and 44.7% of 12th graders reported that they had used marijuana in their lifetime. In addition, 11.8%, 25.4%, and 34.9% of 8th, 10th, and 12th graders, respectively, reported using marijuana in the past year. A number of high school students reported daily use in the past month, including 1.1%, 3.0%, and 6.0% of 8th, 10th, and 12th graders, respectively.

The prevalence of marijuana use and abuse is also indicated by criminal investigations for which drug evidence was analyzed in federal, state, and local forensic laboratories, as discussed above in Factor 1. The National Forensic Laboratory System (NFLIS), a DEA program, systematically collects drug identification results and associated information from drug cases submitted to and analyzed by federal, state, and local forensic laboratories. NFLIS data shows that marijuana was the most frequently identified drug from January 2001 through December 2014. In 2014, marijuana accounted for 29.3% (432,989) of all drug exhibits in NFLIS.

The high consumption of marijuana is being fueled by increasing amounts of domestically grown marijuana as well as increased amounts of foreign source marijuana being illicitly smuggled into the United States. In 2014, the Domestic Cannabis Eradication and Suppression Program (DCE/SP) reported that 3,904,213 plants were eradicated in outdoor cannabis cultivation areas compared to 2,597,798 in 2000, as shown above in Table 3. Significant quantities of marijuana were also eradicated from indoor cultivation operations. There were 396,620 indoor plants eradicated in 2014 compared to 217,105 eradicated in 2000. As shown in Table 2 above, in 2014, the National Seizure System (NSS) reported seizures of 1,767,741 kg of marijuana.

Factor 5: The Scope, Duration, and Significance of Abuse

Abuse of marijuana is widespread and significant. As previously noted, according to the NSDUH, in 2014, an estimated 117.2 million Americans (44.2%) age 12 or older had used marijuana or hashish in their lifetime, 35.1 million (13.2%) had used it in the past year, and 22.2 million (8.4%) had used it in the past month. Past year and past month marijuana use has increased significantly since 2013. Past month marijuana use is highest among 18–21 year olds and it declines among those 22 years of age and older. In 2014, an estimated 18.5% of past year marijuana users age 12 or older used marijuana on 300 or more days within the past 12 months. This translates into 6.5 million persons using marijuana on a daily or almost daily basis over a 12-month period. In 2014, an estimated 41.6% (9.2 million) of past month marijuana users age 12 or older used the drug on 20 or more days in the past month (SAMHSA, NSDUH). Chronic use of marijuana is associated with a number of health risks (see Factors 2 and 6).

Furthermore, the average percentage of Δ^9-THC in seized marijuana has increased over the past two decades (The University of Mississippi Potency Monitoring Project). Additional studies are needed to clarify the impact of greater potency, but one study shows that higher levels of Δ^9-THC in the body are associated with greater psychoactive effects (Harder and Rietbrock, 1997), which can be correlated with higher abuse potential (Chait and Burke, 1994).

TEDS data show that in 2013, marijuana/hashish was the primary substance of abuse in 16.8% of all admissions to substance abuse treatment among patients age 12 and older. TEDS data also show that marijuana/hashish was the primary substance of abuse for 77.0% of all 12- to 14-year-olds admitted for drug treatment and 75.5% of all 15- to 17-year-olds admitted for drug treatment in 2013. Among the 281,991 admissions to drug treatment in 2013 in which marijuana/hashish was the primary drug, the average age at admission was 25 years and the peak age cohort was 15 to 17 years (22.5%). Thirty-nine percent of the 281,991 primary marijuana/hashish admissions (35.9%) were under the age of 20.

In summary, the recent statistics from these various surveys and databases (see Factor 1 for more details) demonstrate that marijuana continues to be the most commonly used illicit drug, with large incidences of heavy use and dependence in teenagers and young adults.

Factor 6: What, if Any, Risk There Is to the Public Health

In its recommendation, the HHS discussed public health risks associated with acute and chronic marijuana use in Factor 6. Public health risks as measured by emergency department visits and drug treatment admissions are discussed by HHS and DEA in Factors 1, 4, and 5. Similarly, Factor 2 discusses marijuana's pharmacology and presents some of the adverse health effects associated with use. Marijuana use may affect the physical and/or psychological functioning of an individual user, but may also have broader public impacts including driving impairments and fatalities from car accidents.

Risks From Acute Use of Marijuana

As discussed in the HHS review document (HHS, 2015), acute usage of marijuana impairs psychomotor performance including motor control and impulsivity, risk taking and executive function (Ramaekers et al., 2004; Ramaekers et al., 2006). In a minority of individuals using marijuana, dysphoria, prolonged anxiety, and psychological distress may be observed (Haney et al., 1999). The DEA further notes a recent review of acute marijuana effects (Wilkinson et al., 2014) that reported impaired neurological function including altered perception, paranoia, delayed response time, and memory deficits.

In its recommendation, HHS references a meta-analysis conducted by Li et al. (2012) where the authors concluded that psychomotor impairments associated with acute marijuana usage have also been

associated with increased risk of car accidents with individuals experiencing acute marijuana intoxication (Li et al., 2012; HHS, 2015). The DEA further notes more recent studies examining the risk associated with marijuana use and driving. Younger drivers (under 21) have been characterized as the highest risk group associated with marijuana use and driving (Whitehill et al., 2014). Furthermore, in 2013, marijuana was found in 13% of the drivers involved in automobile-related fatal accidents (McCartt, 2015). The potential risk of automobile accidents associated with marijuana use appears to be increasing since there has been a steady increase in individuals intoxicated with marijuana over the past 20 years (Wilson et al., 2014). However, a recent study commissioned by the National Highway Traffic Safety Administration (NHTSA) reported that when adjusted for confounders (*e.g.,* alcohol use, age, gender, ethnicity), there was not a significant increase in crash risk (fatal and nonfatal, n = 2,682) associated with marijuana use (Compton and Berning, 2015).

The DEA also notes recent studies examining unintentional exposures of children to marijuana (Wang et al., 2013; 2014). Wang et al. (2013) reviewed emergency department (ED) visits at a children's hospital in Colorado from January 1, 2005 to December 31, 2011. As stated by the authors, in 2000 Colorado passed Amendment 20 which allowed for the use of marijuana. Following the passage of ''a new Justice Department policy'' instructing ''federal prosecutors not to seek arrest of medical marijuana users and suppliers as long as they conform to state laws'' (as stated in Wang et al., 2013), 14 patients in Colorado under the age of 12 were admitted to the ED for the unintended use of marijuana over a 27 month period. Prior to the passage of this policy, from January 1, 2005 to September 30, 2009 (57 months), there were no pediatric ED visits due to unintentional marijuana exposure (Wang et al., 2013). The DEA also notes a larger scale evaluation of pediatric exposures using the National Poison Data System (Wang et al., 2014). That study reported that there were 985 unintentional marijuana exposures in children (9 years and younger) between January 1, 2005 to December 31, 2011. The authors stratified the ED visits by states with laws allowing medical use of marijuana, states transitioning to legalization for medical use, and states with no such laws. Out of the 985 exposures, 495 were in non-legal states (n=33 states), 93 in transitional states (n=8 states), and 396 in ''legal'' states (n=9 states). The authors reported that there was a twofold increase (OR = 2.1) in moderate or major effects in children with unintentional marijuana use and a threefold increase (OR = 3.4) in admissions to critical care units in states allowing medical use of marijuana, in comparison to non-legal states.

Risks Associated With Chronic Use of Marijuana

The HHS noted that a major risk from chronic marijuana use is a distinctive withdrawal syndrome, as described in the 2013 DSM–5. The HHS analysis also quoted the following description of risks associated with marijuana [cannabis] abuse from the DSM–5:

Individuals with cannabis use disorder may use cannabis throughout the day over a period of months or years, and thus may spend many hours a day under the influence. Others may use less frequently, but their use causes recurrent problems related to family, school, work, or other important activities (e.g., repeated absences at work; neglect of family obligations). Periodic cannabis use and intoxication can negatively affect behavioral and cognitive functioning and thus interfere with optimal performance at work or school, or place the individual at increased physical risk when performing activities that could be physically hazardous (e.g. driving a car; playing certain sports; performing manual work activities, including operating machinery). Arguments with spouses or parents over the use of cannabis in the home, or its use in the presence of children, can adversely impact family functioning and are common features of those with cannabis use disorder. Last, individuals with cannabis use disorder may continue using marijuana despite knowledge of physical problems (e.g. chronic cough related to smoking) or psychological problems (e.g. excessive sedation or exacerbation of other mental health problems) associated with its use. (HHS 2015, page 34).

The HHS stated that chronic marijuana use produces acute and chronic adverse effects on the respiratory system, memory and learning. Regular marijuana smoking can produce a number of long-term pulmonary consequences, including chronic cough and increased sputum (Adams and Martin, 1996), and histopathologic abnormalities in bronchial epithelium (Adams and Martin, 1996).

Marijuana as a ''Gateway Drug''

The HHS reviewed the clinical studies evaluating the gateway hypothesis in marijuana and found them to be limited. The primary reasons were: (1) Recruited participants were influenced by social, biological, and economic factors that contribute to extensive drug abuse (Hall and Lynskey, 2005), and (2) most studies testing the gateway drug hypothesis for marijuana use the determinative measure *any use of an illicit drug* rather than applying DSM–5 criteria for drug abuse or dependence (DSM–5, 2013).

The HHS cited several studies where marijuana use did not lead to other illicit drug use (Kandel and Chen, 2000; von Sydow et al., 2002; Nace et al., 1975). Two separate longitudinal studies with adolescents using marijuana did not demonstrate an association with use of other illicit drugs (Kandel and Chen, 2000; von Sydow et al., 2002).

It was noted by the HHS that, when evaluating the gateway hypothesis, differences appear when examining use versus abuse or dependence of other illicit drugs. Van Gundy and Rebellon (2010) reported that there was a correlation between marijuana use in adolescence and other illicit drug use in early adulthood, but when examined in terms of drug abuse of other illicit drugs, age-linked stressors and social roles were confounders in the association. Degenhardt et al. (2009) reported that marijuana use often precedes use of other illicit drugs, but dependence involving drugs other than marijuana frequently correlated with higher levels of illicit drug abuse. Furthermore, Degenhardt et al. (2010) reported that in countries with lower prevalence of marijuana usage, use of other illicit drugs before marijuana was often documented.

Based on these studies among others, the HHS concluded that although many individuals with a drug abuse disorder may have used marijuana as one of their first illicit drugs, this does not mean that individuals initiated with marijuana inherently will go on to become regular users of other illicit drugs.

Factor 7: Its Psychic or Physiological Dependence Liability

Physiological (Physical) Dependence in Humans

The HHS stated that heavy and chronic use of marijuana can lead to physical dependence (DSM–5, 2013; Budney and Hughes, 2006; Haney et al., 1999). Tolerance is developed following repeated administration of marijuana and withdrawal symptoms are observed as following discontinuation of marijuana usage (HHS, 2015).

The HHS mentioned that tolerance can develop to some of marijuana's effects, but does not appear to develop with respect to the psychoactive effects. It is believed that lack of tolerance to

psychoactive effects may relate to electrophysiological data demonstrating that chronic Δ^9-THC administration does not affect increased neuronal firing in the ventral tegmental area, a brain region that plays a critical role in drug reinforcement and reward (Wu and French, 2000). Humans can develop tolerance to marijuana's cardiovascular, autonomic, and behavioral effects (Jones et al., 1981). Tolerance to some behavioral effects appears to develop with heavy and chronic use, but not with occasional usage. Ramaekers et al. (2009) reported that following acute administration of marijuana, occasional marijuana users still exhibited impairments in tracking and attention tasks whereas performance of heavy users on the these tasks was not affected. In a follow-up study with the same subjects that participated in the study by Ramaekers et al. (2009), a neurophysiological assessment was conducted where event-related potentials (ERPs) were measured using electroencephalography (EEG) (Theunissen et al., 2012). Similar to the earlier results, the heavy marijuana users (n = 11; average of 340 marijuana uses per year) had no changes in their ERPs with the acute marijuana exposure. However, occasional users (n = 10; average of 55 marijuana uses per year) had significant decreases in the amplitude of an ERP component (categorized as P100) on tracking and attention tasks and ERP amplitude change is indicative of a change in brain activity (Theunissen et al., 2012).

The HHS indicated that down-regulation of cannabinoid receptors may be a possible mechanism for tolerance to marijuana's effects (Hirvonen et al., 2012; Gonzalez et al., 2005; Rodriguez de Fonseca et al., 1994; Oviedo et al., 1993).

As indicated by the HHS, the most common withdrawal symptoms in heavy, chronic marijuana users are sleep difficulties, decreased appetite or weight loss, irritability, anger, anxiety or nervousness, and restlessness (Budney and Hughes, 2006; Haney et al., 1999). As reported by HHS, most marijuana withdrawal symptoms begin within 24–48 hours of discontinuation, peak within 4–6 days, and last for 1–3 weeks.

The HHS pointed out that the American Psychiatric Association's (APA's) Diagnostic and Statistical Manual of Mental Disorders—5 (DSM–5) included a list of withdrawal symptoms following marijuana [cannabis] use (DSM–5, 2013). The DEA notes that a DSM–5 working group report indicated that marijuana withdrawal symptoms were added to DSM–5 (they were not previously included in DSM–IV) because marijuana withdrawal has now been reliably presented in several studies (Hasin et al., 2013). In short, marijuana withdrawal signs are reported in up to one-third of regular users and between 50% and 90% of heavy users (Hasin et al., 2013). According to DSM–5 criteria, in order to be characterized as having marijuana withdrawal, an individual must develop at least three of the seven symptoms within one week of decreasing or stopping the heavy and prolonged use (DSM–5, 2013). These seven symptoms are: (1) Irritability; anger or aggression, (2) nervousness or anxiety, (3) sleep difficulty, (4) decreased appetite or weight loss, (5) restlessness, (6) decreased mood, (7) somatic symptoms causing significant discomfort (DSM–5, 2013).

Psychological (Psychic) Dependence in Humans

High levels of psychoactive effects such as positive reinforcement correlate with increased marijuana abuse and dependence (Scherrer et al., 2009; Zeiger et al., 2010). Epidemiological marijuana use data reported by NSDUH, MTF, and TEDS support this assertion as presented in the HHS 2015 review of marijuana and updated by the DEA. According to the findings in the 2014 NSDUH survey, an estimated 9.2 million individuals 12 years and older used marijuana daily or almost daily (20 or more days within the past month). In the 2015 MTF report, daily marijuana use (20 or more days within the past 30 days) in 8th, 10th, and 12th graders is 1.1%, 3.0%, and 6.0%, respectively.

The 2014 NSDUH report stated that 4.2 million persons were classified with dependence on or abuse of marijuana in the past year (representing 1.6% of the total population age 12 or older, and 59.0% of those classified with illicit drug dependence or abuse) based on criteria specified in the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM–IV). Furthermore, of the admissions to licensed substance abuse facilities, as presented in TEDS, marijuana/hashish was the primary substance of abuse for; 18.3% (352,297) of 2011 admissions; 17.5% (315,200) of 2012 admissions; and 16.8% (281,991) of 2013 admissions. Of the 281,991 admissions in 2013 for marijuana/hashish as the primary substance, 24.3% used marijuana/hashish daily. Among admissions to treatment for marijuana/hashish as the primary substance in 2013, 27.4% were ages 12 to 17 years and 29.7% were ages 20 to 24 years.

Factor 8: Whether the Substance is an Immediate Precursor of a Substance Already Controlled Under the CSA

Marijuana is not an immediate precursor of another controlled substance.

Determination

After consideration of the eight factors discussed above and of the HHS's Recommendation, the DEA finds that marijuana meets the three criteria for placing a substance in schedule I of the CSA under 21 U.S.C. 812(b)(1):

1. Marijuana has a high potential for abuse.

The HHS concluded that marijuana has a high potential for abuse based on a large number of people regularly using marijuana, its widespread use, and the vast amount of marijuana that is available through illicit channels.

Marijuana is the most abused and trafficked illicit substance in the United States. Approximately 22.2 million individuals in the United States (8.4% of the United States population) were past month users of marijuana according to the 2014 NSDUH survey. A 2015 national survey (Monitoring the Future) that tracks drug use trends among high school students showed that by 12th grade, 21.3% of students reported using marijuana in the past month, and 6.0% reported having used it daily in the past month. In 2011, SAMHSA's Drug Abuse Warning Network (DAWN) reported that marijuana was mentioned in 36.4% of illicit drug-related emergency department (ED) visits, corresponding to 455,668 out of approximately 1.25 million visits. The Treatment Episode Data Set (TEDS) showed that 16.8% of non-private substance-abuse treatment facility admissions in 2013 were for marijuana as the primary drug.

Marijuana has dose-dependent reinforcing effects that encourage its abuse. Both clinical and preclinical studies have demonstrated that marijuana and its principle psychoactive constituent, Δ^9-THC, possess the pharmacological attributes associated with drugs of abuse. They function as discriminative stimuli and as positive reinforcers to maintain drug use and drug-seeking behavior. Additionally, use of marijuana can result in psychological dependence.

2. Marijuana has no currently accepted medical use in treatment in the United States.

The HHS stated that the FDA has not approved an NDA for marijuana. The HHS noted that there are opportunities for scientists to conduct clinical research with marijuana and there are active INDs for marijuana, but marijuana

does not have a currently accepted medical use in the United States, nor does it have an accepted medical use with severe restrictions.

FDA approval of an NDA is not the sole means through which a drug can be determined to have a ''currently accepted medical use'' under the CSA. Applying the five-part test summarized below, a drug has a currently accepted medical use if all of the following five elements have been satisfied. As detailed in the HHS evaluation and as set forth below, none of these elements has been fulfilled for marijuana:

i. The drug's chemistry must be known and reproducible

Chemical constituents including Δ^9-THC and other cannabinoids in marijuana vary significantly in different marijuana strains. In addition, the concentration of Δ^9-THC and other cannabinoids may vary between strains. Therefore the chemical composition among different marijuana samples is not reproducible. Due to the variation of the chemical composition in marijuana strains, it is not possible to derive a standardized dose. The HHS does advise that if a specific *Cannabis* strain is cultivated and processed under controlled conditions, the plant chemistry may be consistent enough to derive standardized doses.

ii. There must be adequate safety studies

There are not adequate safety studies on marijuana for use in any specific, recognized medical condition. The considerable variation in the chemistry of marijuana results in differences in safety, biological, pharmacological, and toxicological parameters amongst the various marijuana samples.

iii. There must be adequate and well-controlled studies proving efficacy

There are no adequate and well-controlled studies that determine marijuana's efficacy. In an independent review performed by the FDA of publicly available clinical studies on marijuana (FDA, 2015), FDA concluded that these studies do not have enough information to ''*currently prove efficacy of marijuana*'' for any therapeutic indication.

iv. The drug must be accepted by qualified experts

At this time, there is no consensus of opinion among experts concerning the medical utility of marijuana for use in treating specific recognized disorders.

v. The scientific evidence must be widely available

The currently available data and information on marijuana is not sufficient to address the chemistry, pharmacology, toxicology, and effectiveness. The scientific evidence regarding marijuana's chemistry with regard to a specific cannabis strain that could be formulated into standardized and reproducible doses is not currently available.

3. There is a lack of accepted safety for use of marijuana under medical supervision.

Currently, there are no FDA-approved marijuana products. The HHS also concluded that marijuana does not have a currently accepted medical use in treatment in the United States or a currently accepted medical use with severe restrictions. According to the HHS, the FDA is unable to conclude that marijuana has an acceptable level of safety in relation to its effectiveness in treating a specific and recognized disorder due to lack of evidence with respect to a consistent and reproducible dose that is contamination free. The HHS indicated that marijuana research investigating potential medical use should include information on the chemistry, manufacturing, and specifications of marijuana. The HHS further indicated that a procedure for delivering a consistent dose of marijuana should also be developed. Therefore, the HHS concluded that marijuana does not have an acceptable level of safety for use under medical supervision.

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Exhibit 9

Responses to Questions from Senator Gillibrand's Office

1. **According to the State Department's interpretation of the Single Convention on Narcotic Drugs, if a signatory's government licenses private businesses or other non-governmental institutions to cultivate cannabis for medical research, is that country in violation of the Single Convention?**

   If a party to the Single Convention issued multiple licenses for the cultivation of cannabis for medical and scientific purposes, that fact alone would not be a sufficient basis to conclude that the party was acting in contravention of the Convention.

   The Single Convention elaborates a process to control access to substances with narcotic properties and characteristics through a system of three graduated schedules, with Schedule I including the most restrictive controls, and Schedule III the least. A separate listing under "Schedule IV" is available for substances deemed to have no medical utility. Substances listed in schedule IV are not subject to additional controls other than those listed in schedule I. Note that while the U.S. has a similar system of controls, there are five schedules, with "Schedule I" equating to Schedule IV under the Single Convention.

   In addition to the controls applicable to a substance listed in schedule I, cannabis is subject to the controls set forth in Article 28 of the Single Convention, "Control of Cannabis." The Single Convention narrowly defines cannabis as the "cannabis plant" exclusive of leaves or seeds if separated from the plant. Controls applicable to "cannabis" do not apply to cannabis plants used exclusively for industrial purposes (fiber and seeds) or for horticultural purposes, nor do they apply to seeds or leaves separated from the plant. Article 28 refers to article 23, "National Opium Agencies:" "if a party permits the cultivation of the cannabis plant for the production of cannabis or cannabis resin, it shall apply thereto the system of controls as provided in article 23 respecting the control of opium poppy."

   With "cannabis" substituted for "opium," the Article 23 requirements are as follows:

   - The establishment of one or more government agencies to carry out the functions required in article 23 [Note: it can be argued that the agency or

agencies with responsibility for administering the controls are not part of the "system of controls" and thus this provision does not apply to cannabis.]

- The agency (or agencies) shall designate the areas in which, and the plots of land on which, cultivation of the [cannabis plant] for the purposes of producing [cannabis] shall be permitted; [Note: the use of the terms "areas" and "plots" would not support the conclusion that a single area or plot is mandated by the Convention.]
- Only cultivators licensed by the agency {or agencies) shall be authorized to engage in such cultivation; [Note: again, use of the term "cultivators" suggests that the Convention contemplated more than on cultivator could be licensed]
- Each license shall specify the extent of the land on which the cultivation is permitted;
- All cultivators of the [cannabis plant] are required to deliver their total crops to the government agency (or agencies) not later than four months after harvest;
- The agency (or agencies) have the exclusive right of importing, exporting, wholesale trading and maintaining stocks other than those held by manufacturers of [cannabis] alkaloids, medicinal [cannabis] or [cannabis] preparations. Parties need not extend this exclusive right to medicinal [cannabis] and [cannabis] preparations.

The Commentary to the Single Convention explains that "Licenses to grow the poppy for the production of opium [substitute "cannabis plant for the production of cannabis or cannabis resin"] may be issued to individual farmers or to corporate bodies." It continues, "the authorization of a state farm to cultivate [the cannabis plant for cannabis or cannabis resin] would be a license within the meaning of the subparagraphs under consideration."

Nothing in the text of the Single Convention, nor in the Commentary, suggests that there is a limitation on the number of licenses that can be issued, nor, on the other hand, is there a prohibition against member states imposing such a limitation. While the language is clear that a government agency (or agencies) is to exercise control over the cultivation of marijuana, this is done through the granting of licenses to cultivators. The Convention unambiguously states that a party is not required to extend the exclusive rights over importing, exporting, or maintaining stocks to medicinal opium or opium preparations, and by operation of Article 28, this provision applies

equally to the export, import, or maintenance of medicinal cannabis or cannabis preparations. Thus, where a party permits cannabis to be dispensed for medicinal uses, the Convention does not require that party to maintain exclusive rights over importing, exporting or maintaining stocks of medicinal cannabis. Although a number of states in the United States do authorize medicinal uses of marijuana, the federal government does not so this provision of Article 28 has no effect in the United States.

2. **Are countries that license multiple private businesses to cultivate cannabis, such as Canada, currently in violation of the Single Convention?**

As explained above, the Convention does not address the number of cultivation licenses that can be issued. If the sole factor to be evaluated was the number of licenses a party had issued, the United States would not be in a position to argue that the action was in contravention of the Single Convention. Moreover, we are not aware that the International Narcotics Control Board has highlighted the number of licenses as an issue of concern. That said, parties are under a general obligation, subject to the provisions of the Single Convention, to limit exclusively to medical and scientific purposes the production, manufacture, export, import, distribution of, trade in, use and possession of drugs. It would not be unreasonable for a government to determine that restricting access to a single license is the most effective way to permit access while limiting the opportunities for diversion.

Exhibit 10

Schedule I & II
Bulk Manufacturers & Importers

Drug Enforcement Administration
Pharmaceutical Training Seminar

Philadelphia, PA
April 12 – 15, 2016

San Antonio, TX
April 25– 28 2016

Persons Required to Register

- Law: 21 USC 822 (a) (1)
- "Every person who manufactures or distributes any controlled substance or list I chemical …shall obtain … a registration…

Persons Required to Register

- Law: 21 USC 822 (a) (2)
- "Every person who dispenses, or who proposes to dispense, any controlled substance, shall obtain from the Attorney General a registration…"

Registrations

- Manufacturer
- Distributor
- Importer
- Exporter
- Pharmacy
- Practitioner
- Researcher, NTP, Analytical Lab, Teaching Institution

4

Manufacturers

- Bulk Manufacturers
- Dosage Form Manufacturers
- Manufacturers Who Re-Package/Re-Label

Specific Registrations

- Bulk Manufacturers
  CI or CII Controlled Substances
- Importers
  CI or CII Controlled Substances

6

A055

Legal Definition 21 USC 802

The term **Bulk Manufacturer** means: the production, preparation, propagation, compounding, or processing of a drug or other substance, either directly or indirectly or by extraction from substances of natural origin, or independently by means of chemical synthesis or by a combination of extraction and chemical synthesis,

In Plain English

Produces the bulk controlled substance used for the preparation of saleable dosage units.

Synthesizer: Produces CS raw materials from basic chemicals.

Extractor: Derives a drug from an organic source. All narcotics are manufactured through extraction. Companies import raw material (Raw Opium/Cocoa Leaf) and extract the active ingredients which are the starting point for the further production of a variety of drugs.

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Importers

For purposes of this presentation, CI and CII importation applies ***only to*** Importer registrations and ***not to*** coincidental activities which are authorized for researcher and analytical laboratory registrations pursuant to 21 C.F.R. § 1301.13 (e) (1).

9

"Section 303"

On October 27, 1970, Section 303 was passed into law by Congress.

303 was the number used by Congress to track the legislation.

Once passed by Congress, Section 303 was placed into 21 USC 823.

Therefore: "Section 303 Investigations"
"Section 303 Registrants"

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Legal Citations
United States Code

- 21 USC 823(a)

Legislates the registration of CI & CII bulk manufacturers and includes the six (6) "public interest" factors which must be examined and considered prior to granting the registration.

The Denial of A Registration

- 21 USC 824

Legislates the conditions under which a registration to manufacture, distribute, or dispense a controlled substance may be denied, suspended, or revoked.

Legal Citations
United States Code

- 21 USC 958

Legislates the Registration and/or Denial of CI & CII Importers.

Code of Federal Regulations

- 21 C.F.R. § 1301.33 (Manufacturers)
- 21 C.F.R. § 1301.34 (Importers)

- Establishes the regulations which govern the approval and renewal processes for CI & CII bulk manufacturer and importer applications.

Activity which is *NOT* allowed

DEA grants Importer registrations and allows the importation of CI & CII controlled substances to "provide for the medical, scientific, or other legitimate needs **of the United States**." 21 USC 952(a)(2).

The statute does not allow an importer to import a CI or CII controlled substance for the purpose of exporting it.

Importation is authorized only for its domestic use in the United States.

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21 USC 823
Registration Requirements

Manufacturers of controlled substances in Schedule I and II

(a) The Attorney General shall register an applicant to manufacture controlled substances in Schedule I or II if he determines that such registration is consistent with the public interest and with United States obligations under international treaties, conventions, or protocols in effect on May 1, 1971.

In determining the public interest, the following factors shall be considered:

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21 USC 823
Registration Requirements

Manufacturers of controlled substances in Schedule I and II

1) Maintenance of effective controls against diversion of particular controlled substances and any controlled substance in Schedule I or II compounded therefrom into other than legitimate medical, scientific, research, or industrial channels, by limiting the importation and bulk manufacture of such controlled substances to a number of establishments which can produce an adequate and uninterrupted supply of these substances under adequately competitive conditions for legitimate medical, scientific, research, and industrial purposes;

21 USC 823
Registration Requirements

2) Compliance with applicable State and local law;

3) Promotion of technical advances in the art of manufacturing these substances and the development of new substances;

4) Prior conviction record of applicant under Federal and State laws relating to the manufacture, distribution, or dispensing of such substances;

21 USC 823
Registration Requirements

5) Past experience in the manufacture of controlled substances, and the existence in the establishment of effective control against diversion; and

6) Such other factors as may be relevant to and consistent with the public health and safety.

"The 303 Process"

The Section 303 Process is initiated upon receipt by DEA Headquarters of a

-New Application for Registration

-Renewal Application

-Request to Modify a Registration

The Review Includes:

- DEA Field Investigation
- DEA HQs Analysis and Review
- Publication in the Federal Register
- And any other additional information as deemed necessary (21 C.F.R. § 1301.15)

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Reviewing the Application

- The review process is required to ensure compliance with the requirements of
  21 C.F.R. §§ 1301.33 and 1301.34.

- The DEA field office does not have the authority to approve or modify a registration subject to a 303 investigation.

- In regards to a Section 303: A request to add a new drug code is considered an "application."

Processing the Application

1) Application forms are submitted to the Registration Section at DEA headquarters.

2) The Registration Section processes the fees and reviews the application for completeness.

3) If it is a new application (as a Bulk Manufacturer or an Importer) the Registration Unit places it in a "Pending/Hold" status.

Processing the Application (continued)

4) The application is then forwarded to the Regulatory Section for processing under the Section 303 (21 USC 823) guidelines.

5) Upon receipt of the new or renewal application from the Registration Unit, or upon the receipt of a written request to add a drug code, the Staff Coordinator/Program Analyst reviews the application. If it is a renewal application, the drug codes are compared to those for which the registrant is already authorized.

Processing the Application (continued)

6) If the renewal application contains new drug codes, or if the application is for a new registration, the Staff Coordinator or Program Analyst will contact the firm by fax to obtain responses to the standardized *Bulk Manufacturer Questions* or *Importer Questions*.

The questions are incorporated at the end of this presentation.

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Processing the Application (continued)

7) After the registrant responds to the questions, the responses, and all of the results from the investigation and analysis, are reviewed by various sections at DEA HQs.

When all sections have found no legal (public interest) reason to deny the application, a Notice of Application is prepared for signature by the Deputy Assistant Administrator, Office of Diversion Control. Once signed, the Notice is transmitted to the Office of the Federal Register for publication.

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Processing the Application (continued)

8) The CFR requires a comment period during which other bulk manufacturers of the same basic classes of controlled substances can file comments and objections to the proposed registration.

The comment period for CI & CII bulk manufacturer registrations is 60 days. For CI & CII importers it is 30 days. The comment period commences the date the Notice of Application is published in the Federal Register.

Processing the Application (continued)

9) With the preparation of the Notice of Application, an electronic investigative tasking has already been sent to the DEA field division office responsible for the applicant/registrant.

The field office will conduct an investigation of the applicant/registrant which includes the six public interest factors in 21 USC 823 (a)(1-6).

A report must be written and submitted to the Regulatory Unit as part of the review process on the application.

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Processing the Application (continued)

10) When the comment period for the Notice of Application closes, the Staff Coordinator or Program Analyst will determine whether or not any comments or objections to the proposed registration were received.

Processing the Application (continued)

11) If **NO** comments or objections have been received, and if the review process of the applicant's request has been completed by DEA, and found to be consistent with the public interest and with the United States obligations under international treaties, then a Notice of Registration will be prepared for the Deputy Assistant Administrator's signature. Once signed, it will be transmitted to the Office of the Federal Registrar and published.

Completion of the Process

When the Notice of Registration is published, the Staff Coordinator notifies the Registration Unit and asks that the action on the application be completed. The Registration Unit then makes any modifications which have been requested, and renews the application.

The registrant's updated DEA certificate is electronically generated and mailed.

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THIS IS A *PROCESS*, NOT A *SINGLE ACTION*.
IT IS NOT UNCOMMON FOR
THIS PROCESS TO TAKE 4-6 MONTHS TO
COMPLETE.

PLEASE CONTACT THE STAFF COORDINATOR
OR PROGRAM ANALYST IF YOU NEED AN
UPDATE ON THE STATUS OF YOUR
APPLICATION/
REQUEST.

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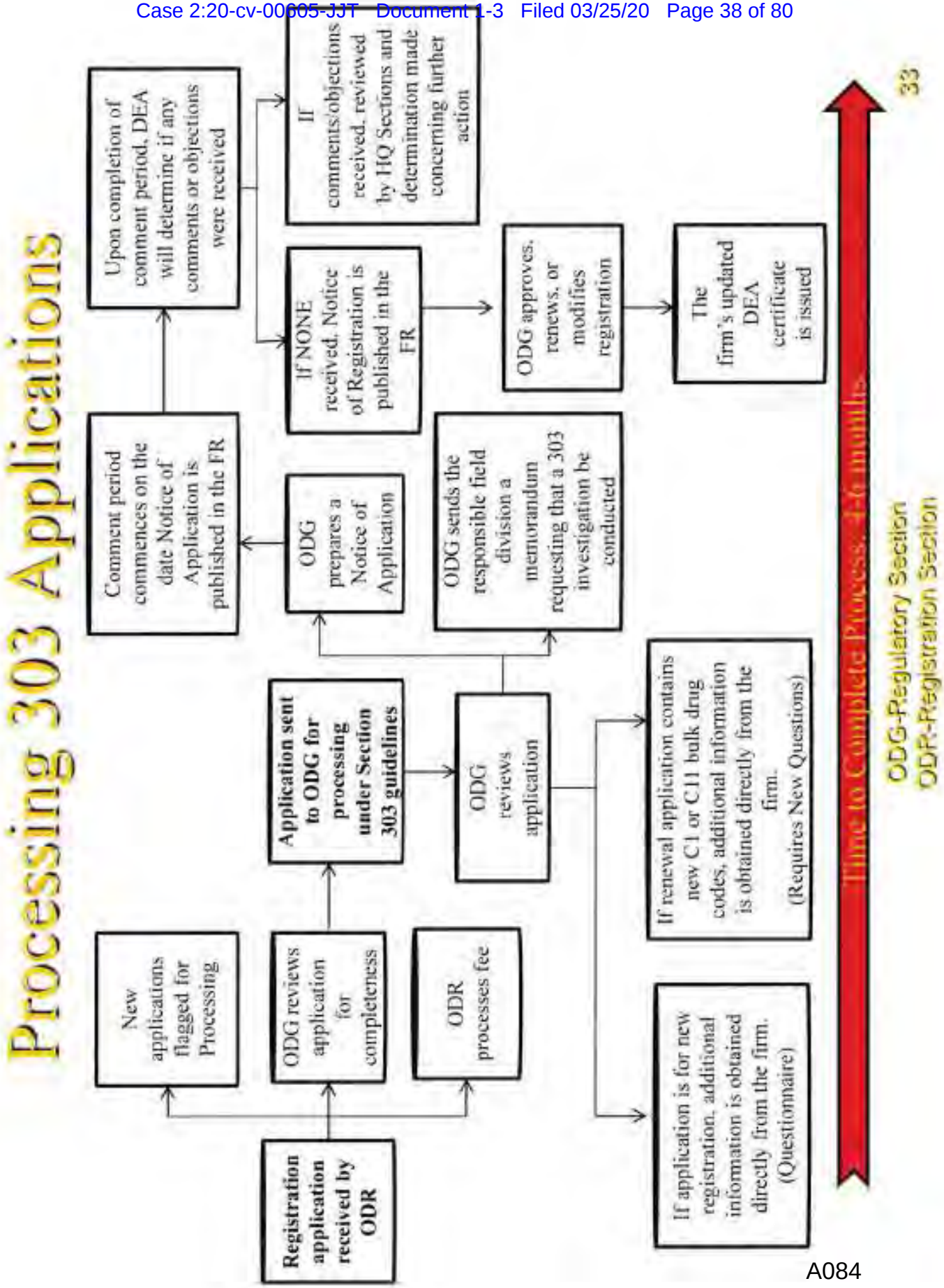
A083


Processing 303 Applications
Registration application received by ODR
New applications flagged for Processing
ODG reviews application for completeness
ODR processes fee
Application sent to ODG for processing under Section 303 guidelines
ODG reviews application
ODG prepares a Notice of Application
Comment period commences on the date Notice of Application is published in the FR
Upon completion of comment period, DEA will determine if any comments or objections were received
If NONE received, Notice of Registration is published in the FR
IF comments/objections received, reviewed by HQ Sections and determination made concerning further action
ODG sends the responsible field division a memorandum requesting that a 303 investigation be conducted
If application is for new registration, additional information is obtained directly from the firm. (Questionnaire)
If renewal application contains new C1 or C11 bulk drug codes, additional information is obtained directly from the firm. (Requires New Questions)
ODG approves, renews, or modifies registration
The firm's updated DEA certificate is issued
Time to Completed Process: 4-6 months
ODG-Regulatory Section
ODR-Registration Section
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A084

INDUSTRY EFFORTS THAT HELP KEEP THE PROCESS MOVING

- ✓ Maintain copies of your application(s) and all other documents for registration and renewal.
- ✓ Review your applications before you mail them.
- ✓ Check √ (Circle) the drug codes you intend to manufacture in bulk as requested on the application. DEA will *not* presume you want the same codes that you previously requested. If the codes are not Checked (Circled), they will not be included on the FR Notice.

INDUSTRY EFFORTS THAT HELP KEEP THE PROCESS MOVING

- ✓ Include all drug codes pending approval on your renewal application.
- ✓ Retain a copy of the Importer and Bulk Manufacturer Questions. When you have complete responses to the questions, you will know the time is right to request that the drug code(s) be added to your registration.

INDUSTRY EFFORTS THAT HELP KEEP THE PROCESS MOVING

- ✓ Submit your Application/Request ASAP
- ✓ Applications are mailed out 120 days in advance of the expiration date. Applications can also be completed on-line 120 days in advance of the expiration date.
- ✓ Be aware of the expiration date(s) on your registrations. If the expiration date is nearing (or has passed) and you have not received a renewal application, call the Registration Unit for assistance.

INDUSTRY EFFORTS THAT HELP KEEP THE PROCESS MOVING

- ✓ If your registration has expired, and you have submitted a renewal application, you may contact the Staff Coordinator or Program Analyst and request an "extension letter" that you can provide to your suppliers and customers for verification purposes or
- ✓ E-mail or fax a copy of your application to ODGR/Regulatory Unit/DEA Headquarters
- ✓ E-mail or fax a copy of your responses to our questions about your Manufacturer/Importer registration.

21 C.F.R. § 1301.36 (i)

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BULK MANUFACTURER QUESTIONS CI & CII CONTROLLED SUBSTANCES

The following questions pertain to your company's request to bulk manufacture CI and/or CII controlled substances (CS).

Please provide detailed responses to the following questions for <u>each</u> drug code that your company has proposed to manufacture in bulk.

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BULK MANUFACTURER QUESTIONS CI & CII CONTROLLED SUBSTANCES

1) What is the purpose for the bulk manufacture of the CS?

2) Specifically describe the production process, from start to finish, for each CS.

3) What materials will be used to manufacture the CS and in what quantities?

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BULK MANUFACTURER QUESTIONS CI & CII CONTROLLED SUBSTANCES (CONTINUED)

4) Please provide the name, address, method of shipment and method of delivery for each supplier from which your firm intends to procure materials for the manufacture of the CS.

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A091

BULK MANUFACTURER QUESTIONS CI & CII CONTROLLED SUBSTANCES (CONTINUED)

5) Does your company have a firm commitment from each supplier of raw material? What is the time period of this agreement and what quantity of raw material will each supplier be able to supply? **Please attach copies of commitment letters from each supplier.**

6) What quantity of each CS does your company anticipate producing in bulk?

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BULK MANUFACTURER QUESTIONS CI & CII CONTROLLED SUBSTANCES (CONTINUED)

7) Who are your current and prospective customers (name/address) for each CS?

A) What product (active pharmaceutical ingredient – API, dosage units, materials for clinical research, etcetera) does your company intend to sell to each customer listed?

B) What quantity of each substance has the customer indicated it would purchase?

BULK MANUFACTURER QUESTIONS CI & CII CONTROLLED SUBSTANCES (CONTINUED)

C) For what purpose would the customers purchase the CS (i.e., dosage form development, clinical trials, drug master file submissions)? Again, please be specific as it relates to each customer and each CS identified above.

Please attach copies of letters of interest from the prospective customers.

BULK MANUFACTURER QUESTIONS CI & CII CONTROLLED SUBSTANCES (CONTINUED)

8) What are your company's future plans with regard to the manufacture of controlled substances? Please provide as much detail as possible, including time line, and discuss any plans to expand your production facility, add new equipment, conduct research and development, run initial batches, and list FDA approvals needed.

BULK MANUFACTURER QUESTIONS CI & CII CONTROLLED SUBSTANCES (CONTINUED)

9) When does your company anticipate selling each of the CS as commercial product?

10) Do you currently have any other CS registrations from the Drug Enforcement Administration? If so, please include the DEA number (s), business activity, drug schedules, and expiration date(s) in your response.

IMPORTER QUESTIONS
CI & CII CONTROLLED SUBSTANCES

The following questions pertain to your request to import CI and/or CII controlled substances (CS).

Please provide detailed responses to the following questions for each CI and/or CII drug code that you (your firm) has requested authority to import.

IMPORTER QUESTIONS
CI & CII CONTROLLED SUBSTANCES
(continued)

1) What type of CS does your firm intend to import: bulk or dosage units?

2) What is the purpose for the importation of the CS: narcotic raw material for bulk manufacture, clinical trials, research, analytical purposes, distribution.

IMPORTER QUESTIONS
CI & CII CONTROLLED SUBSTANCES
(continued)

3) Why is a foreign source of supply being used instead of a domestic source?

4) What is the name, address, method of shipment and method of delivery for each supplier of CS your company proposes to import?

IMPORTER QUESTIONS
CI & CII CONTROLLED SUBSTANCES
(continued)

5) Does your company have a firm commitment from the supplier/suppliers of each substance proposed for importation?
   a) What is the time period of the commitment?
   b) What quantity is involved?
   c) Letters of Commitment?

6) What quantity of each CS does your company anticipate importing on an annual basis?

IMPORTER QUESTIONS
CI & CII CONTROLLED SUBSTANCES
(continued)

7) Who are your current and prospective customers? Please provide a list of names, addresses, and DEA numbers for each CS.

Please attach copies of letters of intent from these customers.

IMPORTER QUESTIONS
CI & CII CONTROLLED SUBSTANCES
(continued)

8) Will the controlled substances you propose to import be used to manufacture controlled substances? If so, how and in what quantity are they to be manufactured?

9) Does your company have previous experience handling CS? Please Explain.

IMPORTER QUESTIONS
CI & CII CONTROLLED SUBSTANCES
(continued)

10) Does your company have previous experience in the importation of CS? Please explain.

11) When does your company anticipate selling a commercial product?

IMPORTER QUESTIONS
CI & CII CONTROLLED SUBSTANCES
(continued)

12) Please provide a written description of what resources your company has committed to the establishment of your importation business as regards to these drug codes.

Do do you plan to or have you already made any changes to:

- Physical plant
- Security system
- Production equipment
- Recordkeeping system

What is your proposed time frame for completion of those activities?

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IMPORTER QUESTIONS
CI & CII CONTROLLED SUBSTANCES
(continued)

13) Do you currently have any other controlled substance registrations from the Drug Enforcement Administration? If so, please provide the registration number(s), business activity, drug schedules, and expiration date.

Regulatory Unit (ODGR)

Abby Hayes, Acting Unit Chief/ODGR
Phone (202) 307-8910
Abby.F.Hayes@usdoj.gov

Marquita Brown, Program Analyst
Phone (202) 353-1199
Marquita.L.Brown@usdoj.gov

Fax number (202) 307-8101

Registration Unit (ODRR)
1-800-882-9539

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Exhibit 11

US Senator Orrin Hatch

Press releases are archived according to their release date. For press releases by topic, please see the Issue Positions page.

Apr 12 2018

Hatch, Harris Call on Sessions, DOJ to Stop Blocking Medical Marijuana Research

"We write to request that you enable the Drug Enforcement Administration (DEA) to fulfill its charter of lawfully registering manufacturers of the controlled substance of marijuana for research without delay. Research on marijuana is necessary to resolve critical questions of public health and safety, such as learning the impacts of marijuana on developing brains and formulating methods to test marijuana impairment in drivers."

Washington, DC—US Senators Orrin Hatch (R-UT) and Kamala Harris (D-CA), both members of the Senate Judiciary Committee, sent a letter today to US Attorney General Jeff Sessions urging the Drug Enforcement Administration (DEA) to cease efforts to slow medical marijuana research, following reports that the Department of Justice was blocking medical marijuana research efforts by delaying approvals for manufacturers growing research-grade medical marijuana.

Expanded research has been called for by President Trump's Surgeon General, the Secretary of Veterans Affairs, the FDA, the CDC, the National Highway Safety Administration, the National Institute of Health, the National Cancer Institute, the National Academies of Sciences, and the National Institute on Drug Abuse. There are currently two bipartisan bills before the Senate Judiciary Committee that would streamline the cumbersome process for researchers to receive federal permission to study marijuana.

Department of Veterans' Affairs is aware that many veterans have been using marijuana to manage the pain of their wartime wounds. America's heroes deserve scientifically-based assessments of the substance many of them are already self-administering. By allowing expanded research, the Department of Justice will aid legislators in making sound decisions, help law enforcement in developing critical public safety guidance, and ensure that citizens have the benefit of informed, evidence-based policy."

The full letter is included below:

The Honorable Jeff Sessions

Attorney General of the United States

U.S. Department of Justice

950 Pennsylvania Avenue, N.W.

Washington, D.C. 20540

Dear Attorney General Sessions:

We write to request that you enable the Drug Enforcement Administration (DEA) to fulfill its charter of lawfully registering manufacturers of the controlled substance of marijuana for research without delay. Research on marijuana is necessary to resolve critical questions of public health and safety, such as learning the impacts of marijuana on developing brains and formulating methods to test marijuana impairment in drivers.

To date, it has been federal practice that only one manufacturer — the University of Mississippi — is licensed to produce marijuana for federally-sanctioned research. Historically, as the DEA has noted, that single manufacturer could meet the minimal demand for research. However, the DEA changed its policy nearly two years ago because, as it explained, "There is growing public interest in exploring the possibility that marijuana or its chemical constituents may be used as potential treatments for certain medical conditions," and the DEA — along with the Food and Drug Administration (FDA) and the National Institutes of Health (NIH)

As of August 11, 2016, 354 individuals and institutions were approved by the DEA to conduct expansive research on marijuana and its related components. Those researchers needed access to a federally compliant expanded product line—they needed to study different types of marijuana and across various delivery mechanisms. Accordingly, a diverse, DEA-vetted market of suppliers of research-grade marijuana would be critical. Since the DEA's Federal Register Notice on August 12, 2016, at least 25 manufacturers have formally applied to produce federally-approved research-grade marijuana.

Last August, The Washington Post reported that you have been blocking these efforts: "The Justice Department under Attorney General Jeff Sessions has effectively blocked the Drug Enforcement Administration from taking action on more than two dozen requests to grow marijuana to use in research."

When asked by Senator Hatch at a Judiciary Committee oversight hearing to clarify DOJ's role in processing these applications, you said, "I think it would be healthy to have some more competition in the [federally-approved research-grade marijuana] supply, but I'm sure we don't need 26 new suppliers." Nevertheless, the supply needed for research is clearly not meeting the demand. There are currently two bipartisan bills before the Senate Judiciary Committee that would streamline the obtuse process for researchers to receive federal permission to study marijuana. Those bills and the strong popular support they have received are indicative of the nation's demand for marijuana to be thoroughly researched.

We write this letter because research on marijuana is necessary for evidence-based decision making, and expanded research has been called for by President Trump's Surgeon General, the Secretary of Veterans Affairs, the FDA, the CDC, the National Highway Safety Administration, the National Institute of Health, the National Cancer Institute, the National Academies of Sciences, and the National Institute on Drug Abuse. In order to facilitate such research, scientists and lawmakers must have timely guidance on whether, when, and how these manufacturers' applications will be resolved.

The benefits of research are unquestionable. Research will give law enforcement guidance to do their jobs:protecting drivers on the roads, protecting kids in schools, and maintaining law and order. Ninety-two percent of veterans support federal research on

administering.

By allowing expanded research, the Department of Justice will aid legislators in making sound decisions, help law enforcement in developing critical public safety guidance, and ensure that citizens have the benefit of informed, evidence-based policy.

Nineteen months have elapsed since the DEA announced its request for expanded marijuana research. To ensure that the DOJ resolves these applications in a timely fashion, allowing the DEA to fulfill its charter, we request that by May 15, 2018, you provide:

- *Notice of the date that the Department of Justice expects to complete its review of these applications so that the DEA may grant these new suppliers a license to produce marijuana for federally approved research;*

- *Notice to applicants of the timeline for resolution and the status of their applications;*

- *Notice of actions you have taken to review applications since October 18, 2017, when you testified before the Judiciary Committee that competition among federally-approved marijuana producers would be "healthy;" and*

- *A commitment to resolve applications by August 11, 2018, at the latest (exactly two years since the DEA announced its policy change).*

Permalink: https://www.hatch.senate.gov/public/index.cfm/2018/4/hatch-harris-call-on-sessions-doj-to-stop-blocking-medical-marijuana-research

Exhibit 12

United States Senate
WASHINGTON, DC 20510

July 25, 2018

The Honorable Jeff Sessions
Attorney General
U.S. Department of Justice
950 Pennsylvania Avenue, NW
Washington, DC 20530-0001

Dear Attorney General Sessions:

We write to encourage you to finalize your review of applications submitted to the Drug Enforcement Administration (DEA) for licenses to manufacture marijuana for scientific research. Our nation's need for meaningful federally sanctioned research is critical. Research and medical communities should have access to research-grade materials to answer questions around marijuana's efficacy and potential impacts, both positive and adverse. Finalizing the review of applications for marijuana manufacturing will assist in doing just that.

For nearly fifty years, the University of Mississippi has had the sole contract with the National Institute on Drug Abuse (NIDA) to grow cannabis for research purposes. To expand the number of manufacturers, the DEA submitted a notice in the Federal Register on August 11, 2016, soliciting applications for licenses to manufacture marijuana for research purposes. Under this notice, DEA explained its legal authority to "increase the number of entities registered under the Controlled Substances Act (CSA) to grow (manufacture) marijuana to supply legitimate researchers in the United States."[1] However, almost two years have passed since the DEA's notice without any new schedule I marijuana manufacturer registrations.

On April 25, 2018, during testimony before the Senate Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies, in response to questioning you stated: "We are moving forward and we will add, fairly soon . . . additional suppliers of marijuana under the Controlled [Substances Act]."[2] In a prior hearing, you testified: "It would be healthy to have some more competition in the [marijuana] supply."[3]

Additional registered marijuana manufacturers in the United States will assist not only in expanding legitimate research opportunities, but also will act in a way that allows for the United States' continued compliance with the United Nations' Single Convention on Narcotics Drugs. Specifically, in DEA's August 2016 notice, the agency explained, "DEA believes it would be consistent with the purposes of articles 23 and 28 of the Single Convention for DEA to register

[1] https://www.federalregister.gov/documents/2016/08/12/2016-17955/applications-to-become-registered-under-the-controlled-substances-act-to-manufacture-marijuana-to.
[2] "Attorney General Sessions on Justice Department Budget Request," C-SPAN, 25 April 2018, https://www.c-span.org/video/?444368-1/attorney-general-declines-resign-mueller-rosenstein-fired.
[3] "Justice Department Oversight Hearing," C-SPAN, 18 Oct. 2017, https://www.c-span.org/video/?434413-1/attorney-general-interviewed-special-counsel.

marijuana growers outside of the [National Institute on Drug Abuse]-contract system to supply researchers, provided the growers agree that they may only distribute marijuana with prior, written approval from DEA."

To prevent further delays in approving the at least twenty-six pending DEA applications for licenses to manufacture marijuana for research purposes, we ask you to respond to the following questions and requests by August 10, 2018:

1) What is the currents status of the twenty-six marijuana manufacturer applications?

2) What steps have both DEA and DOJ taken to review the twenty-six marijuana manufacturer applications currently pending?

3) By what date do you estimate the DEA will have completed its review of the twenty-six marijuana applications and commence registration of new marijuana manufacturers?

4) Please share DOJ's analysis of the Single Convention and if the opinion of the Justice Department is the same or similar to that of DEA's.

5) If there are legal barriers to licensing multiple schedule I marijuana manufacturers under the Single Convention, please identify and explain them.

Thank you for your attention to this matter.

Sincerely,

BRIAN SCHATZ
United States Senator

CHUCK GRASSLEY
United States Senator

CORY GARDNER
United States Senator

KIRSTEN GILLIBRAND
United States Senator

AMY KLOBUCHAR
United States Senator

CHRISTOPHER A. COONS
United States Senator

ORRIN HATCH
United States Senator

TIM KAINE
United States Senator

Exhibit 13

Congress of the United States
Washington, DC 20510

August 30, 2018

The Honorable Robert Wilkie
Secretary of Veterans Affairs
810 Vermont Ave. NW
Washington, DC 20420

Dear Secretary Wilkie,

We are writing today to encourage you to use your authority as the Secretary of Veterans Affairs to conduct a rigorous clinical trial into the safety and efficacy of medicinal cannabis for veterans with post-traumatic stress disorder (PTSD) and chronic pain so that we can better understand the potential benefits or dangers of medicinal cannabis.

The Department of Veterans Affairs (VA) is already conducting multiple small-scale studies into the potential health benefits of medicinal cannabis, and we believe VA has the authority, ability and capacity to carry out such a study. Many of our nation's veterans already use medicinal cannabis, and they deserve to have full knowledge of the potential benefits and side effects of this alternative therapy.

According to a recent New York Times article published on July 25, veterans in Northern California are lining up to receive free marijuana, often without a doctor's prescription or understanding of any potentially harmful drug interactions. These veterans primarily get their health care from VA, but because of restrictive regulations, VA doctors are barred from recommending and, until recently, discussing, medicinal cannabis. The pervasive lack of research makes their jobs even more difficult, leaving VA clinicians flying blind, without concrete recommendations to provide veterans. VA doctors deserve to be fully informed about medicinal cannabis so that they can provide fact-based guidance to their patients.

Without rigorous, Department-led research into the safety and efficacy of medicinal cannabis for treating veterans with PTSD and chronic pain, both VA doctors and veterans will remain in the dark about this potentially beneficial alternate treatment. In fact, many veterans state that cannabis is better at reducing and controlling their pain than prescription painkillers and opioids. While in the midst of a deadly opioid epidemic, it is irresponsible to turn a blind eye to a possible substitute to harmful opioids. Additionally, one study in New Mexico found that patients using cannabis experienced a 75 percent reduction in their Clinician Administered Posttraumatic Scale score compared to patients not using cannabis to treat their PTSD symptoms.

Many veterans with these invisible wounds are suffering, and the pharmaceuticals prescribed to them are not providing meaningful relief. VA already has the authority to conduct studies into the benefits and side effects of medicinal cannabis, and is in fact already conducting two small-scale studies. We strongly encourage VA to take its cues from veterans, who, according to The American Legion's survey of its membership, overwhelmingly support research into medicinal cannabis.

We, and all of our nation's veterans, look forward to your prompt response.

Sincerely,

Jon Tester
Ranking Member
Senate Committee on Veterans' Affairs

David P. Roe, M.D.
Chairman
House Committee on Veterans' Affairs

Tim Walz
Ranking Member
House Committee on Veterans' Affairs

Dan Sullivan
United States Senator
Senate Committee on Veterans' Affairs

Exhibit 14

Congress of the United States
Washington, DC 20515

August 31, 2018

The Honorable Jefferson Sessions
Attorney General
U.S. Department of Justice (DOJ)
950 Pennsylvania Avenue, NW
Washington, DC 20530-0001

Dear Attorney General Sessions:

In light of the fact that August 11, 2018 marked two years since the Drug Enforcement Administration (DEA) stated that they would accept registrations for manufacturers of marijuana for research usage, we write to encourage you to finalize your review of the submitted applications.

As we expressed to you nearly four months ago, in our letter dated April 30, 2018, compliant manufacturers are attempting to provide state and federal governments and medical professionals with rigorous research on cannabis' effects, both adverse and therapeutic, but their applications to do so have not been assessed. Our nation needs scientific research to analyze the medical applications of cannabis so we may determine appropriate federal marijuana policy in accordance with federal law. It is good policy, it is simply the right thing to do, and it falls within our national controlled substances regulatory framework.

As a bipartisan group of Members of Congress, we feel obliged to make clear our position on marijuana research:

1. The production of marijuana for compliant research should be apolitical.

2. Lawmakers, regulators, law enforcement officials and patients must be able to draw from a robust body of scientific research to make informed decisions about marijuana usage.

3. The need for expanded marijuana research in the United States is critical and urgent.

To prevent further delays in approving pending DEA applications for licenses to manufacture marijuana for research purposes, we ask you to respond to the following questions at your earliest convenience:

1. What is the current status of the twenty-six marijuana manufacturer applications?

2. In the past twelve months, excluding Schedule I Bulk Manufacturer registrations for marijuana, how many new DEA registrations has DOJ reviewed?

3. What steps have both the DEA and DOJ taken to review the twenty-six marijuana manufacturer applications currently pending?

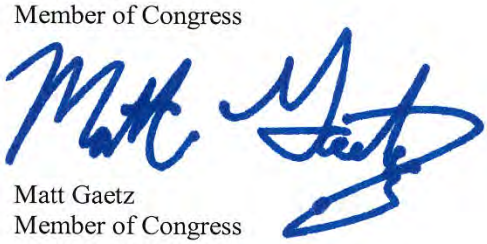
4. By what date do you estimate the DEA will have completed its review of the twenty-six marijuana applications and commence registration of new marijuana manufacturers?

We look forward to your department addressing these questions and swiftly registering additional producers of marijuana for research. Thank you for your attention to this matter.

Sincerely,

Carlos Curbelo
Member of Congress

Jimmy Panetta
Member of Congress

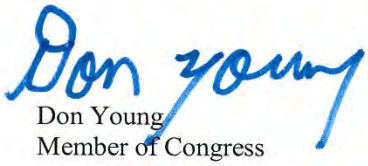


Matt Gaetz
Member of Congress

Earl Blumenauer
Member of Congress

Dana Rohrabacher
Member of Congress

Steve Cohen
Member of Congress



Don Young
Member of Congress

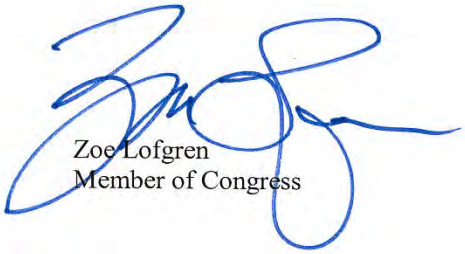
Charlie Crist
Member of Congress

Tom Garrett
Member of Congress

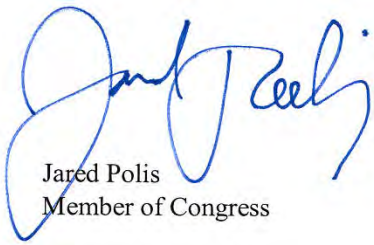
Eleanor Holmes Norton
Member of Congress

Ryan Costello
Member of Congress

Anna G. Eshoo
Member of Congress



Zoe Lofgren
Member of Congress



Jared Polis
Member of Congress

Exhibit 15

Congress of the United States
Washington, DC 20515

September 28, 2018

The Honorable Uttam Dhillon
Acting Administrator
Drug Enforcement Administration
8701 Morrissette Drive
Springfield, VA 22152

The Honorable Jeff Sessions
Attorney General
United States Department of Justice
950 Pennsylvania Avenue, NW
Washington, DC 20530

Dear Acting Administrator Dhillon and Attorney General Sessions:

Considering the recent decision by the Drug Enforcement Administration (DEA) to approve the importation from Canada of marijuana for research, we write with deep concern and with questions over the delay in approving additional approved domestic manufacturers of cannabis for this same purpose.

Cannabis offers breakthrough possibilities to help alleviate suffering and disease, but more research is needed. Currently, there is only one legal domestic supplier of marijuana for research purposes. Many have raised concerns about the cannabis it manufactures, however, such as the quality of the product. In August 2016, DEA adopted a new policy so as to increase the number of domestic manufacturers in order to increase the amount of cannabis supply and facilitate research.

Further, on October 18, 2017, you, Attorney General Sessions, testified before the Senate Judiciary Committee. In response to a question from Senator Orrin Hatch about federally-approved manufacturers of research cannabis, you stated "I think it would be healthy to have some more competition in the supply." We agree. Fortunately, over two dozen American companies have filed applications to manufacture cannabis products for research purposes.

Unfortunately, in the two years since DEA's new policy, no additional manufactures have been approved. There have been several unsuccessful attempts to ascertain the cause of this delay, most recently a July 25, 2018 letter from a bipartisan group of Senators and an August 31 letter from a bipartisan group of Representatives.

The need for additional domestic manufacturers of marijuana for research purposes was illustrated a few days ago by DEA. On Tuesday, September 18, it granted approval to the University of California San Diego's *Center for Medical Cannabis Research* to import capsules of THC and CBD from a Canadian company, Tilray Inc., for purposes of medical research. The one manufacturer in the U.S. does not offer capsules of cannabis compounds. If there were other domestic manufacturers, they might offer this option.

On April 18, 2017, President Trump issued an executive order to "Buy American and Hire American." Despite the Department of Justice (DOJ) and DEA possessing over two dozen applications from qualified domestic manufacturers, however, DEA approved the importation of cannabis products from Canada. Adding insult to injury, one application to produce research

cannabis was submitted by a campus within the University of California system — and one campus of that system will be the eventual recipient of Tilray, Inc.'s THC and CBD products.

We should note that just recently the House Judiciary Committee approved by voice vote the *Medical Cannabis Research Act*. This bill would require there be at least three domestic suppliers of cannabis for research purposes. There is strong and bipartisan interest in Congress in increasing the number of manufacturers in the U.S. of cannabis for research. While Congress will act if the Administration does not, the Administration could make this goal a reality much more quickly if it approved some of the pending applications.

With that in mind, and considering the news of the need to import cannabis products from Canada for U.S. research, we would like answers to the following questions, some of which have been asked by some of us previously:

1. What is the current status of the twenty-six cannabis manufacturer applications? How long has each been pending before DOJ and DEA?

2. What steps have the DEA and DOJ taken to review the cannabis manufacturer applications currently pending? What are the reasons these applications have not been approved?

3. When do you estimate the DEA and DOJ will complete their review of all of the cannabis manufacturing applications and begin approving some as new manufacturers?

4. In the past twelve months, excluding Schedule I Bulk Manufacturer registrations for cannabis, how many other DEA registrations has DOJ reviewed?

We look forward to working with the Administration to see that our domestic need for cannabis for research can be met by American institutions. Your prompt response would be greatly appreciated. Thank you for your time and consideration.

Sincerely,

Matt Gaetz
Member of Congress

Eric Swalwell
Member of Congress

Cc: Dr. Nora D. Volkow, Director, National Institute on Drug Abuse

Earl Blumenauer
Member of Congress

Steve Cohen
Member of Congress
M.C.

Peter DeFazio
Member of Congress

Pramila Jayapal
Member of Congress

Zoe Lofgren
Member of Congress

Seth Moulton
Member of Congress

Eleanor Holmes Norton
Member of Congress

Jimmy Panetta
Member of Congress

Chellie Pingree
Member of Congress

Jared Polis
Member of Congress

Dana Rohrabacher
Member of Congress

Darren Soto
Member of Congress

Exhibit 16

United States Senate
WASHINGTON, DC 20510

March 28, 2019

The Honorable William Barr
Attorney General
U.S. Department of Justice
950 Pennsylvania Avenue, NW
Washington, DC 20530-0001

Dear Attorney General Barr:

We write to express our opposition to any attempt to reinterpret the United States' obligations under the United Nations' Single Convention on Narcotics of 1961 (Single Convention), which governs the international regulation of controlled substances like marijuana. We have concerns that any changes will unnecessarily hinder the advancement of research on the effects of marijuana for medicinal or therapeutic purposes.

While the Single Convention contained a research exception for the production of controlled substances, the treaty intended to limit the production and distribution of the controlled substances outside of the direct oversight and supervision of the federal government. However, after years of limited research on the effects of medical marijuana, and after many states had moved forward with legalization, the Drug Enforcement Administration (DEA), in consultation with the National Institute on Drug Abuse (NIDA) and the Food and Drug Administration, reassessed their need to provide an adequate supply of research-grade marijuana.

On August 12, 2016, the DEA issued a request for applications to manufacture marijuana for research purposes.[1] In the agency's analysis of the Single Convention, the DEA outlined five conditions for the lawful cultivation of marijuana under Articles 23 and 28 of the treaty. The DEA, as the agency delegated with carrying out the functions of the Single Convention, must:

1. Designate the areas in which, and the plots of land on which, cultivation of the cannabis plant for the purpose of producing cannabis shall be permitted;
2. License cultivators authorized to cultivate cannabis;
3. Specify through such licensing the extent of the land on which the cultivation is permitted;
4. Purchase and take physical possession of all cannabis crops from all cultivators as soon as possible, but not later than four months after the end of the harvest; and
5. Have the exclusive right of importing, exporting, wholesale trading and maintaining stocks of cannabis.

[1] 21 CFR Part 1301, https://www.federalregister.gov/documents/2016/08/12/2016-17955/applications-to-become-registered-under-the-controlled-substances-act-to-manufacture-marijuana-to.

Historically, this operated as a single contract with the National Institute on Drug Abuse (NIDA), through which the federal government was able to maintain a monopoly of the wholesale distribution of the cultivated marijuana. However, to increase the supply of the research-grade marijuana, the DEA revised its oversight and supervisory role. As the agency explained:

> DEA believes it would be consistent with the purposes of articles 23 and 28 of the Single Convention for DEA to register marijuana growers outside of the [National Institute on Drug Abuse]-contract system to supply researchers, provided the growers agree that they may only distribute marijuana with prior, written approval from DEA.

We agree with DEA's analysis that the registration scheme meets the federal government's obligations under the Single Convention. Furthermore, the registration of new manufacturers of research-grade marijuana meets a real need in our country to advance the science behind medical marijuana. No additional changes to our interpretation of the Single Convention are needed to meet this goal.

We believe the licensed production of marijuana for research is critically important. After over two and a half years of delay, it is imperative that you advance the process for registering new manufacturers of research-grade marijuana. We thank you for your consideration of our concerns, and we look forward to the opportunity to work with you this issue.

Sincerely,

BRIAN SCHATZ
United States Senator

CORY A. BOOKER
United States Senator

cc: Uttam Dhillon
Acting Administrator
U.S. Drug Enforcement Administration

Exhibit 17

United States Senate
WASHINGTON, DC 20510

April 2, 2019

The Honorable William Barr
Attorney General
U.S. Department of Justice
950 Pennsylvania Avenue, NW
Washington, DC 20530-0001

Dear Attorney General Barr:

We write to follow up on previous inquires about the status of pending applications submitted to the Drug Enforcement Administration (DEA) for licenses to manufacture marijuana for scientific research. These inquiries were made in a previous letter sent to then-Attorney General Jeff Sessions encouraging the Department of Justice to finalize its review of the applications. The Department has not responded to the letter, sent on July 25, 2018. Inquiries were also made by both Senator Chuck Grassley[1] and Ranking Member Dianne Feinstein[2] in questions for the record for your confirmation hearing, to which you responded by committing to review the letter and the status of the pending applications. We are encouraged by your comments, and we look forward to working with the Department on this issue.

Our nation's need for meaningful federally sanctioned research is critical. Research and medical communities should have access to research-grade materials to answer questions around marijuana's efficacy and potential impacts, both positive and adverse. Finalizing the review of applications for marijuana manufacturing will assist in doing just that.

For nearly fifty years, the University of Mississippi has had the sole contract with the National Institute on Drug Abuse to grow cannabis for research purposes. To expand the number of manufacturers, the DEA submitted a notice in the Federal Register on August 11, 2016, soliciting applications for licenses to manufacture marijuana for research purposes. Under this notice, DEA explained its legal authority to "increase the number of entities registered under the Controlled Substances Act (CSA) to grow (manufacture) marijuana to supply legitimate researchers in the United States."[3] However, over two year and a half years have passed since the DEA's initial notice without any new schedule I marijuana manufacturer registrations.

On April 25, 2018, during testimony before the Senate Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies, in response to questioning, Sessions stated: "We are moving forward and we will add, fairly soon . . . additional suppliers of marijuana under

[1] "Questions for the Record, William P. Barr, Nominee to be United States Attorney General: Questions from Senator Grassley," https://www.judiciary.senate.gov/imo/media/doc/Barr%20Responses%20to%20Grassley%20QFRs1.pdf.
[2] "Questions for the Record, William P. Barr, Nominee to be United States Attorney General: Questions from Senator Feinstein," https://www.judiciary.senate.gov/imo/media/doc/Barr%20Responses%20to%20Feinstein%20QFRs1.pdf.
[3] https://www.federalregister.gov/documents/2016/08/12/2016-17955/applications-to-become-registered-under-the-controlled-substances-act-to-manufacture-marijuana-to.

the Controlled [Substances Act]."[4] In a prior hearing, Sessions testified: "It would be healthy to have some more competition in the [marijuana] supply."[5]

To prevent further delays in approving the pending DEA applications for licenses to manufacture marijuana for research purposes, we ask you to respond to the following questions and requests by April 23, 2019:

1) What is the current status of each marijuana manufacturer application?

2) What steps have both DEA and DOJ taken to review each marijuana manufacturer application currently pending?

3) By what date do you estimate the DEA will have completed its review of all the marijuana manufacturer applications and commence registration of new marijuana manufacturers?

4) Please share DOJ's analysis of the Single Convention and if the opinion of the Justice Department is the same or similar to that of DEA's.

5) If there are legal barriers to licensing multiple schedule I marijuana manufacturers under the Single Convention, please identify and explain them.

6) What impact, if any, did the enactment of the 2018 Farm Bill have on the pending applications? If any of the pending applications were to manufacture hemp-derived CBD for research purposes, does DOJ intend to notify those applicants that a bulk manufacturer registration is no longer needed? If so, when? If not, why not?

In your response to Senator Grassley, you said: "I support the expansions of marijuana for manufacturers for scientific research consistent with law," and in your response to Senator Feinstein, in reference to the pending applications, you said: "If confirmed, I can commit to reviewing the matter." We look forward to working with you on this effort, and we thank you for your attention to this matter.

Sincerely,

BRIAN SCHATZ
United States Senator

DIANNE FEINSTEIN
United States Senator

[4] "Attorney General Sessions on Justice Department Budget Request," C-SPAN, 25 April 2018, https://www.c-span.org/video/?444368-1/attorney-general-declines-resign-mueller-rosenstein-fired.
[5] "Justice Department Oversight Hearing," C-SPAN, 18 Oct. 2017, https://www.c-span.org/video/?434413-1/attorney-general-interviewed-special-counsel.

LISA MURKOWSKI
United States Senator

CORY GARDNER
United States Senator

CHRISTOPHER A. COONS
United States Senator

TIM KAINE
United States Senator

Exhibit 18

Congress of the United States
Washington, DC 20515

May 7, 2019

The Honorable William Barr
Attorney General
United States Department of Justice
950 Pennsylvania Avenue, NW
Washington, DC 20530

The Honorable Uttam Dhillon
Acting Administrator
Drug Enforcement Administration
8701 Morrissette Drive
Springfield, VA 22152

Dear Attorney General Barr and Acting Administrator Dhillon:

We write to urge you to do more to speed research on the medicinal benefits of cannabis.

Some of us have written to the Department of Justice (DOJ) and Drug Enforcement Administration (DEA) before on the topic of cannabis, and we write again because the matter is of such importance. There is tremendous evidence that cannabis has the power to treat a variety of medical ailments; that is why 33 states and the District of Columbia have made it legal for that purpose.

In fact, the federal government recognizes the healing properties of cannabis as well. So far the Food and Drug Administration (FDA) has approved one compound produced by the plant and two compounds which are synthetic substances mimicking ones produced by the plant, all known as cannabinoids, for medical use. More research is needed, however, to make additional products available.

Unfortunately, the federal government stands in the way. The application process to research cannabis is one that is arduous and long. First, one who wishes to engage in this research must at the very least work with three separate federal entities – the National Institute on Drug Abuse (NIDA), DEA, and FDA. Approval is required by DEA, which involves a site inspection, and FDA. This is not including any involvement by governments at the state or local level.

Second, there is only one federally-approved grower of cannabis for research in the United States – the University of Mississippi. Researchers must wait to be provided the cannabis to begin their work. Beyond any delays in time this adds, the cannabis itself is generally regarded has having poor quality. The University of Mississippi also does not offer cannabinoids.

It is thus not surprising that those who want to research cannabis are frustrated. Some wait months or even years to have their applications approved. And then they have to deal with raw materials that do not always lend themselves to proper research.

We recognize DEA has taken concrete steps to improve research prospects, but they do not go far enough. Specifically, we applaud DEA for improving its application process for research by putting it entirely online in early 2018. But, as John Hudak, a senior fellow at the Brookings Institution, told *Rolling Stone* in February 2018, that is just a "very small drop in the bucket" in terms of speeding up the process. And, we appreciate that DEA has increased its quota in 2019 for growing

cannabis for research purposes by more than five times, writing in the December 28, 2018 *Federal Register* notice approving the quota that it was due to "increased usage projections for federally approved research projects." But, that does not address any delays in receiving cannabis, its quality, or what is presented as materials for research options.

We urge you then to go beyond these steps and do whatever you can to speed up and improve the research application process. Please let us know what you are considering to change the application process so it moves more quickly and what additional resources from Congress would help in that regard.

One action which would be beneficial is to act on one of the 26 pending applications to grow cannabis for research purposes; these applicants could provide better raw materials for research. Some of us have written with questions about these applications previously; we never received a response. So, we would like to re-ask those questions here:

1. What is the current status of the 26 cannabis manufacturer applications? How long has each been pending before DOJ and DEA?

2. What steps have the DEA and DOJ taken to review the cannabis manufacturer applications currently pending? What are the reasons these applications have not been approved?

3. When do you estimate the DEA and DOJ will complete their review of all of the cannabis manufacturing applications and begin approving some as new manufacturers?

4. In the past 12 months, excluding Schedule I Bulk Manufacturer registrations for cannabis, how many other DEA registrations has DOJ reviewed?

We hope DOJ and DEA share our goal of bringing safe and effective medical treatments to those who are suffering as quickly as possible; we believe cannabis can be part of the solution, but we need more research to make that happen.

Thank you for reviewing our request, and we look forward to a prompt response.

Sincerely,

Eric Swalwell
Member of Congress

Matt Gaetz
Member of Congress

Steve Cohen
Member of Congress

Don Young
Member of Congress

Earl Blumenauer
Member of Congress

David P. Joyce
Member of Congress

Jimmy Panetta
Member of Congress

Zoe Lofgren
Member of Congress

Rodney Davis
Member of Congress

Ruben Gallego
Member of Congress

Tulsi Gabbard
Member of Congress

Jan Schakowsky
Member of Congress

Jesus G. "Chuy" Garcia
Member of Congress

Bobby L. Rush
Member of Congress

Barbara Lee
Member of Congress

Ro Khanna
Member of Congress

Debbie Dingell
Member of Congress

Diana DeGette
Member of Congress

Scott Peters
Member of Congress

J. Luis Correa
Member of Congress

Gilbert Ray Cisneros, Jr.
Member of Congress

Raul M. Grijalva
Member of Congress

Jared Huffman
Member of Congress

Donna E. Shalala
Member of Congress

Seth Moulton
Member of Congress

Eleanor Holmes Norton
Member of Congress

Dina Titus
Member of Congress

Henry C. "Hank" Johnson
Member of Congress

Peter A. DeFazio
Member of Congress

Rashida Tlaib
Member of Congress

Cc: Dr. Nora D. Volkow, Director, National Institute on Drug Abuse

Exhibit 19

COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 2019

WEDNESDAY, APRIL 25, 2018

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 2:32 p.m., in room SD–192, Dirksen Senate Office Building, Hon. Jerry Moran (Chairman) presiding.

Present: Senators Moran, Shelby, Alexander, Murkowski, Collins, Graham, Boozman, Capito, Lankford, Kennedy, Shaheen, Leahy, Feinstein, Coons, Schatz, Manchin, and Van Hollen.

U.S. DEPARTMENT OF JUSTICE

STATEMENT OF HON. JEFF SESSIONS, ATTORNEY GENERAL

OPENING STATEMENT OF SENATOR JERRY MORAN

Senator MORAN. Good afternoon. I call the hearing to order.

Mr. Attorney General, welcome to the committee, the Committee on Commerce, Justice, Science Appropriations Subcommittee. We're here to examine the Department of Justice's fiscal year 2019 budget request.

I am pleased to welcome you to this subcommittee. My colleagues and I are very much interested in hearing from you in your—hearing your testimony, considering your testimony today. Your input is not only helpful, but necessary, as we review the President's spending priorities for the Justice Department.

While this hearing is about the Department's fiscal year 2019 budget request, I would suspect that you will hear about a number of other issues unrelated to the Department's resource and funding needs. My focus in this hearing is to better understand your top funding priorities and to emphasize those that are important to our Nation.

The Department of Justice is responsible for, and involved in, many important national priorities. Arguably, the greatest responsibility includes keeping Americans safe, which carries a new meaning, given the growing national security threats of today, and upholding the rule of law. This requires that Congress adequately fund our Nation's law enforcement efforts, including counterterrorism and cybersecurity initiatives.

INVESTIGATION OF CONSPIRACY TO BOMB SOMALI IMMIGRANTS

In Kansas, the Department recently successfully investigated and convicted individuals who conspired to bomb residents of Somali immigrants to our State. The work done by the FBI, by the Liberal Kansas Police Department, the Seward County Sheriff's Office, the Ford County Sheriff's Office, the Garden City Police Department, the Dodge City Police Department, and the Finney County Sheriff's Office, along with the Kansas Highway Patrol and the Kansas Bureau of Investigation, and the United States Attorneys Office showed, in my mind, be a model for Federal and local partnerships. I trust the Department will seek to replicate the successes of these entities with the funds in this request.

FIX NICS AND STOP SCHOOL VIOLENCE ACT

The President's fiscal year 2019 budget proposal of 28.4 billion for the Department of Justice. I note that—however, I note that the many agencies and departments this budget request was created and produced before the recently enacted fiscal year 2018 bill, which was finalized and has recently become law. For example, both the Fix NICS Act and the Stop School Violence Act authorized important safety initiatives, but were signed into law in the 2018 omnibus after your fiscal year 2019 budget submission. As a cosponsor of both pieces of legislation, I look forward to hearing the Department's plan to implement these two important policies.

Furthermore, this administration has made it a priority to combat violent crime, which is reflected as one of the Department's highest priorities. Specifically, the administration seeks 109.2 million to enhance ongoing efforts to reduce violent crime and to combat transnational criminal organizations in the fiscal year 2019 budget request. For example, the Department requested increased funding to expand the Project Safe Neighborhood Initiative. Project Safe Neighborhood's main focus is the extradition of illegal firearms—I'm sorry, the eradication of illegal firearms and violent gang activity. The program is designed to improve police and community relations, which is strongly supported by many from law enforcement officials in my State of Kansas. The subcommittee looks forward to hearing more details about this program.

NATIONAL INTEGRATED BALLISTICS INFORMATION NETWORK

I also look forward to hearing about the impact of emerging technologies, such as those being utilized by the National Integrated Ballistics Information Network, known as NIBIN. NIBIN allows law enforcement officials to share ballistic intelligence across the United States, making law enforcement resources more efficient and effective.

EXECUTIVE OFFICE FOR IMMIGRATION REVIEW FUNDING

The Department and administration have also prioritized solving the problem of illegal immigration. The fiscal year 2019 request seeks 65.9 million in immigration-related programs, program enhancements to support border security and enforcement efforts. For example, the 2019 request outlines that this funding would hire 150 attorneys for the Executive Office for Immigration Review,

which oversees the Nation's immigration courts and the Board of Immigration appeals, and provide 25 million for technology improvements to transform current paper operating system to an electronic filing system.

OPIOIDS

The Department is also involved in helping to combat ongoing opioid epidemic. According to the Center for Disease Control and Prevention, opioid overdoses in the U.S. have surpassed motor vehicle accidents as the number-one cause of accidental death in the country. The crisis needs to be aggressively addressed, and I look forward to working with the Department to ensure adequate resources to—are provided to do just that.

LEGAL ORIENTATION PROGRAM AND HELP DESK

Last, Mr. Attorney General, I want to thank you for your attention and acknowledgment of a letter that Senator Shaheen and I sent to you exactly 1 week ago regarding the Executive Office of Immigration Review, Legal Orientation, and Immigration Help Desk Programs. We also spoke on the phone earlier this week, and I would appreciate it if you address this matter in more detail in this hearing. I know that you would agree that ensuring congressional direction is—ensuring that congressional direction is followed is extremely important.

Again, I thank you for your service as our Attorney General and the important testimony that we will hear from you today as our subcommittee begins its work on the fiscal year 2019 budget for the Department of Justice.

I now recognize the Senator from New Hampshire, Senator Shaheen, the Ranking Member.

STATEMENT OF SENATOR JEANNE SHAHEEN

Senator SHAHEEN. Thank you very much, Mr. Chairman. This is our first hearing together, and I look forward to working with you on this subcommittee.

I'm very pleased that Attorney General Sessions is here with us this afternoon. Thank you for being here, and thank you for taking time to speak with me last week on the phone.

I want to begin by thanking the 115,000 career employees of the Department of Justice. They are working hard every day to keep Americans safe from crime and terrorism. The breadth of issues that the Department handles on a daily basis is vast.

CONCERNS ABOUT PROPOSED CUTS

I do have a concern that, as I look at the budget proposal for fiscal year 2019, the Department has requested addressing these numerous missions with less funding, a reduction of $1.9 billion, which is 6.2 percent less than the level provided in the omnibus we passed last month. Now, while I was very pleased to see the funding levels preserved for lifesaving grant programs under the Office of Violence Against Women, I'm concerned about some of the drastic reductions and eliminations that have been proposed for other programs.

OPIOIDS

As you know very well, the Justice Department is on the front lines fighting the deadly, uncontrolled opioid epidemic. As Senator Moran said and as every Member of this subcommittee knows, this is an epidemic that we have seen across this country. It's also an epidemic that is still gaining strength.

I just met with a group of family members and the Addiction Policy Forum who spoke about the challenges that they face. They reminded me that we lost, as Senator Moran said, about 63,000 Americans last year to the opioid epidemic. And, for every one of those people lost, there is a family who is suffering and is experiencing that loss.

DEA AND 360 STRATEGY

So, I certainly support enforcement and prosecution efforts, but I believe they should be paired with prevention and treatment responses as well. This balanced approach is something that I've heard support for from police chiefs, from judges, and from other criminal justice professionals in New Hampshire. The critical need to help children and families grappling with the opioid crisis in their neighborhoods and within their own families is very real. Even the DEA has focused on a comprehensive approach to opioids with their three-fold 360 Strategy that targets enforcement, diversion control, and community outreach. Manchester, New Hampshire, which is our largest city—and I know, as Attorney General, you've already been there, and we appreciate that—was one of the first locations chosen for the 360 Program. The DEA has seen real success there, not only in tackling heroin and opioid trafficking, but by partnering with social service and other community groups, such as the Boys and Girls Club of Manchester, to provide prevention and education programs for young people that are so critical.

FENTANYL

New Hampshire has also been grappling with the dramatic rise of fentanyl, the synthetic opioid that's approximately 50 times more potent than heroin and 100 times more powerful than morphine. Unfortunately, New Hampshire leads this Nation in overdose deaths from fentanyl. Sadly, it's now spreading across the country, and it's something that has overwhelmed State crime labs, which are already backlogged with testing crime scene evidence.

CONCERNS ABOUT ELIMINATING COPS

We provided a total of $447 million for Justice grant programs, $299 million more than we provided in the fiscal year 2017 budget, to help communities respond to the opioid crisis with a balance of enforcement, treatment, and prevention programs. I'm interested to hear how the Department plans to expand these programs and what your fiscal year 2019 budget request will do. I'm concerned that, right now, it calls for eliminating key programs, like the COPS Anti-Heroin Task Forces, which we funded at $32 million. It calls for dramatic cuts in programs like the Coverdell Program, which we talked about, and I know is something that you care a lot about, because you authored that legislation.

BYRNE JAG

I'm also concerned about the continued hold on the fiscal year 2017 Byrne-JAG awards to our States. This program is the backbone for helping State and local law enforcement with crime prevention efforts across the country. I know that my police chiefs in New Hampshire are very frustrated, waiting to receive funding that they had expected months ago. According to Nick Willard, the police chief in Manchester, a city that responded to 800 overdose calls last year, he now has fewer police officers on the street conducting drug operations without their Byrne-JAG funding. I know you would agree that getting these grant awards to law enforcement for programs like this is critically important.

When we spoke last week, you indicated that once a decision was reached in the pending Seventh Circuit Court of Appeals case, that the Justice Department would release Byrne-JAG funding from fiscal year 2017. That Court did issue its decision on April 19, so I'm interested to know when these awards will be released. I'm concerned when I see that the Justice Department has filed yet another motion on Monday evening that will further delay these awards.

So, Mr. Attorney General, thank you again for being here. I look forward to your testimony and to our discussion today.

Senator MORAN. Senator Shaheen, thank you very much. In the newness of the moment of actually having the gavel in my hand, I failed to acknowledge my desire to work very closely with you and to make certain that this subcommittee does its work in a timely and a bipartisan way. I would tell you that the previous subcommittees that I've chaired, both of those bills have passed through the full committee with unanimous vote, and I look forward to seeing if we can't accomplish that in this arena, as well.

I also would say that I have a high priority of making certain that all 12 appropriation bills that our full Appropriations Committee will address march their way across the Senate floor, approved by the House, and signed by the President. I want the appropriations process to work, and I pledge to you to do everything I can to accomplish that goal.

In that regard, I'm honored to recognize the Chairman of the full committee, who has stated on so many occasions this committee is going to do its work. And I look forward to not only hearing Senator Shelby's remarks today, but, in particular, working with him to make sure that we accomplish our goals in this subcommittee.

The Senator from Alabama, the Chairman of the committee, is recognized.

STATEMENT OF SENATOR RICHARD C. SHELBY

Senator SHELBY. Thank you, Senator Moran.

I will be brief. I just want to welcome my former colleague, Jeff Sessions, the Attorney General of the United States, to this appropriation hearing. We will be working with the Justice Department to help fund the requisite programs. Of course, that includes the FBI, because it has to be done. And I hope, under Chairman Moran and Ranking Member Shaheen, that we can move this bill to the

floor as fast as possible, and not go from crisis to crisis, you know, in—with some certainty.

With that, I'm going to have a number of questions, but I'd like to do them for the record. And I would ask my—unanimous consent that my opening statement be made part of the record, Mr. Chairman.

Senator MORAN. Without objection, so ordered.

[The information follows:]

PREPARED STATEMENT OF SENATOR RICHARD C. SHELBY

Chairman Moran and Ranking Member Shaheen, I would like to thank you for calling this hearing to examine the President's fiscal year 2019 funding request for the Department of Justice.

I am also pleased to welcome my friend, Attorney General Sessions, to this subcommittee hearing. Your input is certainly helpful and necessary as we review the President's spending priorities for the new fiscal year.

In today's world, the Department of Justice serves a vital role in ensuring our country's national security and upholding the rule of law. As such, I am looking forward to working with Attorney General Sessions and all of my colleagues on the subcommittee in drafting a bill that funds the Department in an appropriate and sufficient manner.

Senator MORAN. I now have the honor of recognizing the Ranking Member of the full committee, the Senator from Vermont, Senator Leahy.

STATEMENT OF SENATOR PATRICK J. LEAHY

Senator LEAHY. Thank you, Mr. Chairman.

And I'm glad to hear what you said about regular order. Senator Shelby and I have been working closely on that. We had a long meeting, the two of us, with the Republican and Democratic leaders last night, and plot out ways to get most of the bills done within the fiscal year.

Attorney General Sessions, welcome. Finally, we have you in the Appropriations Committee. I'm sorry it's only your first appearance here in 16 months. Because we have to make appropriations, and we have to ask, after we make appropriations, how the funds are expended. And, in my years on this committee—and I think this can be said by Members of both sides of the aisle—we consider the oversight operations of this committee very important. And for the operations of your Department, there is an urgent need for oversight.

INTEGRITY AND INDEPENDENCE OF DOJ

I want to begin with one thing. While you and I may disagree on many policies, I've known you long enough to know if there's one area where you and I are in total agreement—total agreement—and that is that we care deeply about the integrity of the Justice Department. You and I have felt that way whether we've had a Republican or a Democratic President. We have both stated so many times in the Judiciary Committee our concern about the integrity of the Justice Department. And I worry that the walls intended to protect the independence and credibility of our law enforcement institutions are at the risk of crumbling. I am very concerned how the President's relentless and, I think, baseless attacks on senior DOJ and FBI leadership, including attacking you for your

recusal for the Russia investigation, something you were required to do—you just followed the law, and you did the right thing—is simply without precedent. And I believe it's wrong.

SPECIAL COUNSEL ROBERT MUELLER AND DEPUTY ATTORNEY GENERAL ROSENSTEIN

We've also learned that the President wanted to fire Special Counsel Robert Mueller last year. The President's allies are now going on television, apparently at the direction of the White House, to build a case for firing your second in command, Rod Rosenstein. Some of the President's allies in the Congress have, I think, irresponsibly even talked about impeaching Rod Rosenstein.

Now, I've been here 44 years. I've never seen such attacks. And again, that's attacks against people in Democratic or a Republican administration. I worry that they are being done to interfere with your Department, the Department of Justice, a place that you and I have always tried to protect the Department's ability to complete an investigation into how and with whom Russia attacked our democracy. And you're at the helm of a Justice Department under siege. This is your chance to talk to us about how you're going to protect it.

IMPORTANCE OF PROTECTING EQUAL RIGHTS FOR ALL

And, in that regard, don't let the Justice Department turn its back on its tradition being a guardian of equal justice for all, including the most vulnerable in our society, the most disadvantaged. We have to be careful. Civil rights, voting rights, immigration. In other words, giving equal protection to all, including the most vulnerable in our society.

So, Mr. Chairman, those are the areas I will question, because the Department of Justice is there for all of us, for every American. And I want to make sure the Attorney General has the tools and the ability to do that.

Senator MORAN. Senator Leahy, thank you very much.

We now will recognize our witness today. I welcome once again Attorney General Sessions to this subcommittee hearing. And I recognize you for your opening statement.

SUMMARY STATEMENT OF HON. JEFF SESSIONS

Attorney General SESSIONS. Thank you very much, Chairman Moran and Ranking Member Shaheen, distinguished Members of this subcommittee, friends, and former colleagues. Thank you for the opportunity to be with you.

I'm particularly pleased to be able to congratulate my former senior Senator for 20 years, Senator Shelby, for being chosen to Chair this historic committee. It is a tremendous honor, Senator Shelby. And my sincere congratulations to you. And you can know for sure how much I've appreciated our good relationship for 20 years.

IMPORTANCE OF WORKING WITH LOCAL LAW ENFORCEMENT AND FALLEN OFFICER

It's been an honor of a lifetime to serve as the Attorney General of the United States and to represent the men and women of the Department of Justice. You can be sure—really sure that I understand the importance of the office I hold, and I will strive to be worthy of it.

Every single day, the 115,000 men and women of the Department work to protect our national security against terrorist threats, reduce violent crime in our communities, stop deadly drug dealers and their organizations, and strengthen the rule of law. So, today I'd like to lay out some of the priorities reflected in our budget request.

First of all, the Department has rapidly moved to improve partnerships with the 85 percent of law enforcement officers who serve at the State, local, and Tribal levels. We know that we cannot succeed without them to make America safe.

And yesterday, we were once again reminded of the sacrifice we ask of our men and women in blue. Officer Crystal Almeida and Rogelio Santander responded to a routine call at a Home Depot in Dallas, but they did not return home. And today we mourn with the family of Officer Santander, and pray for the recovery of Officer Almeida. The men and women of law enforcement deserve our respect, they deserve our support, they deserve our commitment in our work to reduce crime.

SPIKE IN CRIME RATES AND INCREASED PROSECUTIONS

After two decades of declining crime in 2015 and 2016, the violent crime rate went up by nearly 7 percent. Assaults went up 10 percent, rape went up nearly 11 percent, murder increased in those 2 years more than 20 percent. That's the largest increases since 1968. President Trump, our Federal officers, our local law enforcement partners are determined that this crime rate rise will not continue.

Our prosecutions of illicit drugs, gun violators, violent crime, gangs, opioids, and immigration offenses are going to go up, too. In 2017, we brought cases against more violent criminals than any year in decades. We charged the most Federal firearms prosecutions in a decade. We convicted nearly 500 human traffickers and 1200 gang members. Your strong support, Congress's support for our work means that we can sustain our Project Safe Neighborhood Program, where our United States Attorneys will meet with your local community leaders and law enforcement leaders to develop crime reduction plans based on local needs. This is a program that has proven to be—to work. Scientifically, it's been analyzed. And I feel great support for it when I travel around the country. Indeed, there are some good signs in the preliminary data that the increases in murder and violent crime appear to have been slowed, and violent crime may have actually begun to decrease.

OPIOIDS AND OVERDOSES

We also embrace the President's goal of reducing prescription drugs sold in the United States by one-third over the next 3 years.

This is an important step in reducing addiction and overdose deaths. We are simply prescribing too many drugs in this country. This Department is going after drug companies, doctors, pharmacists, and others who violate the law. And we will use civil, criminal, and sound regulatory powers to do so. I've directed that every United States Attorneys Office establish an opioid coordinator to focus on this dramatic problem.

As Senator Shaheen noted, the largest cause of death for Americans under age 50 is overdose—drug overdoses. That is a stunning statistic. We've got to do something about it. We've already charged hundreds of people suspected of contributing to the ongoing opioid crisis, including over 50 doctors for opioid-related crime; some, very serious criminals. Sixteen of these doctors prescribed more than 20.3 million pills illegally.

ORGANIZED CRIME DRUG ENFORCEMENT TASK FORCES

Our Organized Crime Drug Enforcement Task Forces have also indicted more than 6,500 defendants in opioid-related investigations, and forfeited more than $150 million. With powerful drugs like fentanyl and heroin on our streets, we are—experience overdose deaths the likes of which we've never seen before. This must end. We are out of time. We have to see results now. And I truly believe we can make—change this dynamic.

DRUGS AND THE SOUTHERN BORDER

Amazingly, in the last month alone, the DEA seized a total of more than 90 kilograms, 2.2 pounds per kilogram, of suspected fentanyl in cases from Detroit to New York to Boston. Fentanyl is 50 times as powerful as heroin, and it's so powerful that an amount equivalent to a pinch of salt is powerful enough to be deadly. So, we must acknowledge that the vast majority of fentanyl, methamphetamine, heroin, and cocaine first come across our southern border. It almost all is coming across the southern border. And we are working with our Department of Homeland Security partners to reduce and ultimately end illegal immigration, which will also help us to take on transnational criminal organizations and reduce the drugs flowing across the border. We're streamlining and increasing prosecutions and targeting criminal aliens. Congress has provided us, thankfully, enough funding for 100 new immigration judges in the recent omnibus, which will help us keep up with the caseload.

LEGAL ORIENTATION PROGRAM AND EXECUTIVE OFFICE FOR IMMIGRATION REVIEW

Mr. Chairman, I'd like to address one matter that I know is important to the subcommittee, the Legal Orientation Program. You and Senator Shaheen both raised it with me. I reviewed the situation, and I have previously expressed some concerns about the program. And the Executive Office for Immigration Review has expressed its intent to pause two parts of the five-part program, pending the results of a formal review of the program. I recognize, however, that this subcommittee has spoken on this matter. And, out of deference to the subcommittee, I've ordered that there be no

pause while the review is being conducted, and I look forward to evaluating such findings as are produced and will be in communication with this subcommittee when they are available.

Our explicit goals for the Department of Justice are to reduce violent crime, reduce the surging increase in homicides, reduce overdose deaths, and to reduce prescription opioids. I believe these priorities are the priorities of the American people and, I believe, your priorities.

PRAISE OF U.S. LAW ENFORCEMENT

So, finally, let me say with all the strength that I can muster, no nation has a finer group of law officers than those who comprise the FBI, the DEA, the ATF, and United States Marshals Service. They are now, now in 24 hours a day in every corner of America, working courageously and faithfully to protect this Nation and our people. And when we face criticism, we're not going to be defensive. When questions arise, even if misplaced, we will take necessary action to establish that concerns are either not true or take strong action against any wrongdoing. This Department, above all others, can never get too big for its britches or think itself in any way as above the law that we must apply to others. We know the Government always wins when justice is done.

So, Mr. Chairman, I'm looking forward to discussing these matters with you and Members of the subcommittee.

[The statement follows:]

PREPARED STATEMENT OF HON. JEFFERSON B. SESSIONS III

Good afternoon, Chairman Moran, Ranking Member Shaheen and other distinguished Members of the subcommittee. I am honored to appear before you today to present the President's fiscal year 2019 budget for the Department of Justice.

Let me start by thanking you for your strong support for the Department in the recently completed fiscal year 2018 Omnibus Appropriations bill. President Trump's fiscal year 2019 budget proposal totals $28 billion for the Department of Justice to support Federal law enforcement and the criminal justice priorities of our State, local, and Tribal law enforcement partners. The request represents a comprehensive investment in the Justice mission and includes increases in funding to help us reduce violent crime, enforce the Nation's immigration laws, combat the opioid epidemic, and continue our priority commitment to national security.

The Department of Justice is facing a severe challenge. We must confront rising violent crime and surging homicide rates. Illicit drug production and supplies are up worldwide. Illicit drug prices are low, supplies are high, and purity is at record levels. This is true for the core dangerous drugs: fentanyl, heroin, methamphetamine, and cocaine. In addition, the Nation is beginning to make reductions in opioid prescriptions, and we must have further significant reductions in manufacturing and prescribing highly addictive opioids.

Our DOJ team, along with our Federal, State, and local partners, have high motivation and determination. We have been redeploying our resources this past year to focus directly on these problems. Let me say clearly, Mr. Chairman, you and this subcommittee have been strongly supportive. We are determined to use every new dollar you have worked to provide us to achieve the maximum benefit in our efforts against these deadly drugs.

The President has ordered us to support State and local law enforcement, dismantle transnational organized crime, and reduce crime. For the last year, we have aggressively carried out that agenda and have already seen notable successes that benefit the American people.

The key Department funding priorities include:

—*Combating Violent Crime.* The budget allocates an additional $109.2 million to support the President's initiatives to reduce violent crime by targeting the worst of the worst transnational criminal organizations, violent gangs, and drug traf-

fickers ravaging our Nation. A smart and sustained effort of this kind with our State and local partners will produce good results.

—*Drug Enforcement and the Opioid Crisis.* The budget requests $295 million to combat the opioid epidemic that is destroying lives and whole communities. It will allow us to target the drug trafficking organizations, the drug companies, pharmacists, and pharmacies that are moving too many prescription drugs into America.

—*Enforcing Immigration Laws.* This budget requests an additional $65.9 million to maintain the efficacy and efficiency of immigration enforcement and adjudication programs and processes. Of note, this budget requests 75 new immigration judges (IJs) and support staff. Our goal is to responsibly end the lawlessness in our system and offer a lawful system that works to advance the national interest.

—*State, Local, and Tribal Assistance.* The budget provides $3.9 billion in discretionary and mandatory funding for State, local, and Tribal law enforcement assistance, who comprise 85 percent of all law enforcement officers in America. Critical programs aimed at protecting the life and safety of State and local law enforcement personnel, including the Public Safety Partnership Program and the Project Safe Neighborhood Program, demonstrate our continuing commitment to supporting State, local and Tribal law enforcement.

—*Reprioritizing and Reshaping Resources for a More Efficient Department.* In line with the President's Executive order on a "Comprehensive Plan for Reorganizing the Executive Branch," we are committed to establishing a leaner Federal Government that reduces both bureaucracy and costs to the American taxpayer. The Department is proposing a number of initiatives to achieve savings, to reduce the size of government, and maximize agency performance.

COMBATING VIOLENT CRIME

Protecting the American people from violent crime is a top priority for the Department of Justice. Unfortunately, in recent years, crime has been on the rise in too many places across the country. FBI statistics show that, in 2015 and 2016, the United States experienced the largest increases in violent crime in a quarter-century.[1] Over those 2 years, violent crime increased by nearly 7 percent. Robberies, assaults, and rapes all increased, and homicide increased by a shocking 20 percent.

In 2017, the Department made some great strides, including the launch of the enhanced Project Safe Neighborhoods (PSN) initiative, which brings together all levels of law enforcement and the communities they serve to develop effective, locally based strategies to reduce violent crime. Led by our 94 United States Attorney's Offices, PSN task forces are hitting the streets across America to apprehend and bring violent criminals to justice. I am asking Congress for additional PSN funding for fiscal year 2019, totaling $140 million, because I believe nothing will be more effective at reducing violent crime.

Under this program, I am asking a great deal of our United States Attorneys. I am empowering them and holding them accountable for results. To put them in the best position to impact and reduce violent crime, I have directed the re-allocation of resources and will be enlisting and deploying 300 additional violent crime prosecutors across the United States this year. So far, the Department has brought cases against the greatest number of violent criminals in at least 25 years—since the Department began tracking a "violent crime" category. Although preliminary numbers for 2017 show a decrease, violent crime rates are still excessively high.[2]

The fiscal year 2019 budget also requests $109.2 million in program enhancements to reduce violent crime and combat transnational criminal organizations. These resources will enable the Department to dismantle the worst criminal organizations, target the most violent offenders, and protect the public. This includes increased funding for the Bureau of Alcohol, Tobacco, Firearms and Explosives' (ATF) National Integrated Ballistic Information Network (NIBIN) in order to centralize the correlation process that enables ballistic identification services for law enforcement partners in a more accurate, efficient and streamlined manner. Further, it supports expediting ATF's processing of National Firearms Act (NFA) applications, which will allow for technical advancements to ensure the most accurate and timely

[1] U.S. Dep't of Justice, Fed. Bureau of Investigation, *Crime in the United States, 2016:* Table 1 & n.6, https://ucr.fbi.gov/crime-in-the-u.s/2016/crime-in-the-u.s.-2016/tables/table-1; for data years prior to 1995, *see* U.S. Dep't of Justice, Fed. Bureau of Investigation, *UCR Data Tool,* https://www.ucrdatatool.gov/index.cfm.

[2] Press Release: Fed. Bureau of Investigation, FBI Releases Preliminary Semiannual Crime Statistics for 2017, (Jan. 23, 2018), https://www.fbi.gov/news/pressrel/press-releases/fbi-releases-preliminary-semiannual-crime-statistics-for-2017.

firearms registrations to support the enforcement of the NFA and provide certifications in support of criminal trials. Finally, it will provide ATF additional resources to provide assistance to cities with surging firearms violence by augmenting and enhancing ATF's regional Crime Gun Intelligence Centers.

It will also provide funding to the Organized Crime and Drug Enforcement Task Forces (OCDETF) with $4.6 million for the establishment of a Co-Located Strike Force to target those transnational criminal organizations that pose the greatest threat to our national security and the safety of American citizens. The Criminal Division (CRM) is also requesting $13 million for Mutual Legal Assistance (MLAT) Reform. This critical funding will support 37 attorneys and 35 paralegals who support prosecutors domestically and abroad by navigating foreign laws, treaties, and other requirements, to secure the return of fugitives to face justice and to obtain the evidence needed to convict them. The Office of International Affairs (OIA) often seek evidence needed to thwart terrorist plots or seek the removal of violent criminals hiding in America's cities. Finally, the U.S. Marshals Service, the oldest American Federal law enforcement agency tasked with apprehending dangerous and wanted fugitives, is seeking $7.3 million for the development and implementation of a comprehensive information technology (IT) integration project called the "Capture Initiative." This will consolidate operational data and improve business and mission capabilities at the headquarters and in the field, while ensuring their data is protected from cybersecurity risks.

DRUG ENFORCEMENT AND THE OPIOID CRISIS

The United States is in the midst of the deadliest drug epidemic in American history. According to the Centers for Disease Control and Prevention (CDC), more than 63,600 Americans died from drug overdoses in 2016, a 21 percent increase from the previous year.[3] Over 42,200, or approximately two-thirds, of these overdose deaths were caused by heroin, fentanyl, and prescription opioids. The President declared this scourge a National Public Health Emergency in October 2017, and the Department remains committed to doing its part to protect the American people from the impact of drugs and drug-related crime nationwide.

The fiscal year 2019 budget requests $295 million in program enhancements and transfers for the Drug Enforcement Administration (DEA) to combat the opioid crisis and bolster drug enforcement efforts. These resources will enable the Department to target those drug trafficking organizations most responsible for the opioid epidemic and drug-related violence in our communities, as well as ensure the life and safety of first responders who are on the front lines protecting the American people.

In fiscal year 2017, Congress funded the establishment of six heroin enforcement teams, comprised of DEA Special Agents and State and local task force officers. These teams have already begun to combat the trafficking in heroin, fentanyl analogues and the violence associated with drug trafficking that is ravaging our communities. DEA continues to aggressively pursue enforcement actions against international and domestic drug trafficking organizations, and in fiscal year 2019 we are seeking $31.2 million to fund an additional eight new heroin enforcement groups to be deployed to DEA Field Divisions that have identified heroin as the first or second greatest threat to their area. The funding will also increase the number of DEA Special Agents at Field Divisions to target the Mexican Transnational Criminal Organizations (TCOs) that pose the greatest drug threat to the United States.

Further, the fiscal year 2019 request also supports $9.7 million for DEA to expand its Fentanyl Signature Profiling Program (FSPP) as it works to link fentanyl seizures to international and domestic trafficking networks responsible for fueling the opioid crisis. It would also provide funding for DEA's drug identification technology and personal protective equipment for agents in the field to minimize exposure to deadly opioids during enforcement actions and allow DEA to convert the El Salvador Formally Vetted Unit to a Sensitive Investigative Unit (SIU).

Finally, the President's budget proposes to permanently transfer $254 million to DEA from the Office of National Drug Control Policy (ONDCP) for facilitating coordination of the High Intensity Drug Trafficking Areas (HIDTA) Program along with other drug enforcement assets. Transferring the HIDTA grants to DEA will enable us to focus on combating drug trafficking in areas where the threat is the greatest and where there is a coordinated law enforcement presence.

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[3] Hedegaard H, Warner M, Miniño A. Drug Overdose Deaths in the United States, 1999–2016. NCHS Data Brief, no 294. Hyattsville, MD: National Center for Health Statistics. 2017. Available from: https://www.cdc.gov/nchs/data/databriefs/db294.pdf.

ENFORCE IMMIGRATION LAWS

We are a strong, prosperous, and orderly nation and such a nation must have a lawful system of immigration. Let no one contend that we reject immigration and want to "wall off America" from all lawful immigration. We admit 1.1 million immigrants lawfully to permanent legal status—green card status—every year, the highest numbers in the world. Indeed, at this unprecedented rate we will soon have the largest percentage of non-native born in our Nation's history with the percentage continuing to rise every year thereafter. Thus, the good and decent people of this country are right to insist that this country should end the illegality, create a rational immigration flow, and protect the Nation from criminal aliens. It cannot be that someone who illegally crosses the border and 2 days later arrives in Sacramento, Dubuque, Louisville, or Central Islip is home free—never to be removed.

It cannot be the policy of a great nation to reward those who unlawfully enter its country with legal status, Social Security, welfare, food stamps, and work permits. Meanwhile those who engage in this process lawfully and patiently and wait their turn are disadvantaged. Our citizens, want our Government to think about their needs and to consider their interests. They have dreams too. Immigration law is the province of the Federal Government. This administration and this Justice Department are determined to make it work fairly and effectively for the people.

The fiscal year 2019 President's budget strengthens the Nation's security through stronger enforcement of the Nation's immigration laws. The Department is requesting $65.9 million in immigration-related program enhancements for fiscal year 2019, which will enhance border security and immigration enforcement. These investments will also improve our ability to conduct immigration hearings to help combat illegal immigration to the United States by expanding capacity, improving efficiency, and removing impediments to the timely administration of justice. This budget supports the Department's efforts, along with our partners at the Department of Homeland Security, to fix our immigration system.

The Executive Office of Immigration Review (EOIR) oversees the Nation's immigration courts and the Board of Immigrant Appeals. At the beginning of fiscal year 2018, there were nearly 650,000 cases pending nationwide, a 25 percent increase from fiscal year 2016 and by far the largest pending caseload before the agency, marking the eleventh consecutive year of increased backlogs. To maintain efficacy and efficiency of immigration enforcement and adjudication programs, the Department's request includes $39.8 million for 75 new immigration judges (IJs) and support staff. Further, $25 million is included in this request for EOIR to modernize its wholly paper-based case-related system to provide for electronic submission of all case-related information, establish Record of Proceedings (eROP), establish electronic case adjudicatory aids for IJs, improve its case management processes and end-to-end workflow, and eventually transition to a paperless courtroom.

STATE, LOCAL, AND TRIBAL ASSISTANCE

Federal law enforcement officers constitute only 15 percent of the total number of law enforcement officers nationwide; therefore, 85 percent of the officer support relies upon strong partnership with State and local law enforcement. The Department supports its partners in State and local law enforcement, who have critical intelligence about violent crime in their communities, and whose actions are crucial in the fight against violent crime and the opioid epidemic. The fiscal year 2019 budget continues its commitment to State, local and Tribal law enforcement by investing approximately $3.9 billion in discretionary and mandatory funding in programs to assist them. Funding has been prioritized to meet the most pressing law enforcement concerns—violent crime and opioid abuse—and to help the victims of crime.

We are also confronting the State and local jurisdictions that have undertaken to undo our immigration laws through so-called "sanctuary policies." Such policies undermine the moral authority of law and undermine the safety of the jurisdictions that adopt them. Police are forced to release criminal aliens back into the community—no matter what their crimes. Think about that: Police may be forced to release pedophiles, rapists, murderers, drug dealers, and arsonists back into the communities where they had no right to be in the first place. They should— according to law and common sense—be processed and deported. These policies hinder the work of Federal law enforcement; they are contrary to the rule of law, and they have serious consequences.

Sanctuary jurisdictions feign outrage when they lose Federal funds as a direct result of actions which contradict Federal law. Some have even decided to go to court so that they can keep receiving taxpayer-funded grants while continuing to impede Federal immigration enforcement. We intend to fight this resolutely. We cannot con-

tinue giving Federal grants to cities that actively undermine the safety of Federal law officers and intentionally frustrate efforts to reduce crime in their own cities. These jurisdictions that knowingly, willfully, and purposefully release criminal aliens back into their communities are sacrificing the lives and safety of American citizens in the pursuit of an extreme open borders policy. It is extreme, because if a jurisdiction will not deport someone who enters illegally and then commits another crime, then who will they deport?

This is not just a bad policy; it is a direct challenge to the laws of the United States. It places the lives of our fine law enforcement officers at risk; I cannot and will not accept this increased risk because certain elected officials want to make a statement. Our duty is to protect public safety and protect taxpayer dollars and I plan to fulfill those duties.

RESTRUCTURING INITIATIVES

The administration is committed to establishing a leaner, more productive Federal Government that reduces both, bureaucracy and costs to the American taxpayer. Since 2017, the Department of Justice has undertaken efforts to refocus resources and return our efforts to our core mission. To support the President's Executive order on reorganizing the executive branch, the Department of Justice has begun taking steps to streamline and improve its good stewardship of taxpayers' dollars. As part of the fiscal year 2019 President's budget, the Department is proposing a number of initiatives to achieve savings, to reduce the size of government, and maximize agency performance. Highlights of the restructuring initiatives include:

—The Bureau of Alcohol, Tobacco, Firearms and Explosives' (ATF) responsibilities related to alcohol and tobacco enforcement will transfer to the Department of Treasury's Alcohol and Tobacco Tax and Trade Bureau. ATF will retain its current enforcement responsibilities for firearms and explosives, while re-focusing their resources on violent crime. As part of that, ATF will pursue a workforce refresh effort, leveraging attrition from its retirement-eligible workforce to reinvigorate a cadre of Special Agents and Investigators to work on ATF's violent crime initiatives.

—The Bureau of Prisons (BOP) will shift to historical inmate-to-staff ratios. It will also close two Regional Offices and two stand-alone minimum-security prison camps, which is anticipated to achieve over $122 million in savings.

—Beginning in fiscal year 2018, the Department will merge administrative support and certain grant management staff for the three Department grant offices. These grants benefit our State and local partners who are on the front lines fighting crime and battling the opioid crisis. The Department plans to build one grants management system to streamline the grants process. As part of this effort in fiscal year 2019, the Department will consolidate the Office of Community Oriented Policing (COPS) into the Bureau of Justice Assistance at the Office of Justice Programs (OJP).

—The budget also proposes to transfer the Community Relations Service (CRS) to the Civil Rights Division, who will then be able to perform its community mediation work in a more centralized manner and at a greater savings to the taxpayer.

—Finally as previously noted, the HIDTA grant program will transfer from ONDCP to DEA. This change will eliminate redundancies within Federal organizations by reallocating this program, which supports States and communities fighting the scourge of illegal drugs, into the same agency leading the enforcement efforts in those communities.

CONCLUSION

Chairman Moran, Ranking Member Shaheen and Members of the subcommittee, it is my pleasure to highlight our efforts to be good stewards of the resources and authorities bestowed on us as we strengthen the Department's ability to ensure safety, equality, and justice for all Americans. As Attorney General, I am committed to making the Department of Justice run as efficiently and effectively as possible, without adding to the burden of the American taxpayer. I thank you for your past support of the Department's financial needs, and for the opportunity to present our fiscal year 2019 budget request. I look forward to working with you through the upcoming fiscal year to ensure that the Department of Justice remains on solid financial footing and can accomplish its multiple and varied missions effectively.

Senator MORAN. Mr. Attorney General, thank you very much.

Let me, first, use this as an opportunity to say how wholeheartedly I agree with your assessment of the law enforcement offi-

cials at the Department of Justice and across the country, and how worthy they are of our respect and support. And I appreciate the sentiments that you expressed on their behalf. And I would assume I join all my colleagues in indicating our full faith and belief in those who work every day to protect the lives and safety of Americans here at home. So, thank you for those strong words, and I commend you for them.

RULE OF LAW AND LEGAL ORIENTATION PROGRAM

Secondly, let me thank you for your response. As I indicated in my opening statement, Senator Shaheen and I corresponded with you in regard to the pause of the Legal Orientation Program. And I want to thank you for your recognition of congressional words, actions. They're—the pause would be in contravention of this subcommittee and the full Appropriations Committee, and actually Congress's direction that no pause occur. And I appreciate you again recognizing the rule of law and your support for Members of this subcommittee in our desire to see that program continue. So, thank you for the response that you gave us here today. I'm pleased to hear it.

Now, let me turn to my questions. Let me, first, say that opening statements by other Members of the subcommittee can be made part of your 7 minutes or could be made as a request by unanimous consent to be made part of the record.

CENSUS CITIZENSHIP QUESTION

Let me ask about the Census. Mr. Attorney General, this past December, the Department of Justice sent an official letter to the Census Bureau requesting that it reinstate a question on the citizenship status to the 2020 Census forms. This subcommittee also has jurisdiction over the funding of the Census. So, just let me give you the opportunity to explain why the Department made this request. And will you elaborate on how the data gathered would be used?

Attorney General SESSIONS. I would be pleased to discuss it, as much as I can. The matter is in litigation, so I have some handicap in discussing all matters that you might be interested in.

The Census, I believe it's common sense and would be appropriate to ask whether or not an individual being surveyed is a citizen of the United States, or not. It had previously been in the Census and remains a part of the annual survey that's done. So, I think that's where we are. It can help us in determining a number of issues, particularly in our Civil Rights Division. And they—our attorneys have compiled some legal reasons we think that would justify that question, and would be pleased to send that to you.

[The information follows:]

December 12, 2017

Dr. Ron Jarmin
Performing the Non-Exclusive Functions and Duties of the Director
U.S. Census Bureau
United States Department of Commerce
Washington, D.C. 20233–0001

Re: Request To Reinstate Citizenship Question On 2020 Census Questionnaire

Dear Dr. Jarmin:

The Department of Justice is committed to robust and evenhanded enforcement of the Nation's civil rights laws and to free and fair elections for all Americans. In furtherance of that commitment. I write on behalf of the Department to formally request that the Census Bureau reinstate on the 2020 Census questionnaire a question regarding citizenship, formerly included in the so-called "long form" census. This data is critical to the Department's enforcement of Section 2 of the Voting Rights Act and its important protections against racial discrimination in voting. To fully enforce those requirements, the Department needs a reliable calculation of the citizen voting-age population in localities where voting rights violations are alleged or suspected. As demonstrated below, the decennial census questionnaire is the most appropriate vehicle for collecting that data, and reinstating a question on citizenship will best enable the Department to protect all American citizens' voting rights under Section 2.

The Supreme Court has held that Section 2 of the Voting Rights Act prohibits "vote dilution" by State and local jurisdictions engaged in redistricting, which can occur when a racial group is improperly deprived of a single-member district in which it could form a majority. See *Thornburg v. Gingles,* 478 U.S. 30, 50 (1986). Multiple Federal courts of appeals have held that, where citizenship rates are at issue in a vote-dilution case, citizen voting-age population is the proper metric for determining whether a racial group could constitute a majority in a single-member district See, e.g., *Reyes v. City of Farmers Branch,* 586 F.3d 1019, 1023–24 (5th Cir. 2009); *Barnett v. City of Chicago,* 141 F.3d 699, 704 (7th Cir. 1998); *Negrn v. City of Miami Beach,* 113 F.3d 1563, 1567–69 (11th Cir. 1997); *Romero v. City of Pomona,* 883 F.2d 1418, 1426 (9th Cir. 1989), overruled in part on other grounds by *Townsend v. Holman Consulting Corp.,* 914 F.2d 1136, 1141 (9th Cir. 1990); see also *LULAC v. Perry,* 548 U.S. 399, 423–442 (2006) (analyzing vote-dilution claim by reference to citizen voting-age population).

The purpose of Section 2's vote-dilution prohibition "is to facilitate participation . . . in our political process" by preventing unlawful dilution of the vote on the basis of race. *Campos v. City of Houston,* 113 F.3d 544, 548 (5th Cir. 1997). Importantly, "[t]he plain language of section 2 of the Voting Rights Act makes clear that its protections apply to United States citizens." *Id.* Indeed, courts have reasoned that "[t]he right to vote is one of the badges of citizenship" and that "[t]he dignity and very concept of citizenship are diluted if noncitizens are allowed to vote." *Barnett,* 141 F.3d at 704. Thus, it would be the wrong result for a legislature or a court to draw a single-member district in which a numerical racial minority group in a jurisdiction was a majority of the total voting-age population in that district but "continued to be defeated at the polls" because it was not a majority of the citizen voting-age population. *Campos,* 113 F.3d at 548.

These cases make clear that, in order to assess and enforce compliance with Section 2's protection against discrimination in voting, the Department needs to be able to obtain citizen voting-age population data for census blocks, block groups, counties, towns, and other locations where potential Section 2 violations are alleged or suspected. From 1970 to 2000, the Census Bureau included a citizenship question on the so-called "long form" questionnaire that it sent to approximately one in every six households during each decennial census. See, e.g., U.S. Census Bureau, *Summary File 3: 2000 Census of Population & Housing*—Appendix B at B–7 (July 2007), *available at* https://www.census.gov/prod/cen2000/doc/sf3.pdf (last visited Nov. 22, 2017); U.S. Census Bureau, Index of Questions, *available at* https://www.census.gov/history/www/through__the__decades/index__of__questions/ (last visited Nov. 22, 2017). For years, the Department used the data collected in response to that question in assessing compliance with Section 2 and in litigation to enforce Section 2's protections against racial discrimination in voting.

In the 2010 Census, however, no census questionnaire included a question regarding citizenship. Rather, following the 2000 Census, the Census Bureau discontinued the "long form" questionnaire and replaced it with the American Community Survey (ACS). The ACS is a sampling survey that is sent to only around one in every 38

households each year and asks a variety of questions regarding demographic information, including citizenship. See U.S. Census Bureau, *American Community Survey Information Guide at 6, available at* https://www.census.gov/content/dam/Census/programs-surveys/acs/about/ACS Information Guide.pdf (last visited Nov. 22, 2017). The ACS is currently the Census Bureau's only survey that collects information regarding citizenship and estimates citizen voting-age population.

The 2010 redistricting cycle was the first cycle in which the ACS estimates provided the Census Bureau's only citizen voting-age population data. The Department and State and local jurisdictions therefore have used those ACS estimates for this redistricting cycle. The ACS, however, does not yield the ideal data for such purposes for several reasons:

—Jurisdictions conducting redistricting, and the Department in enforcing Section 2, already use the total population data from the census to determine compliance with the Constitution's one-person, one-vote requirement, see *Evenwel v. Abbott,* 136 S. Ct. 1120 (Apr. 4, 2016). As a result, using the ACS citizenship estimates means relying on two different data sets, the scope and level of detail of which vary quite significantly.

—Because the ACS estimates are rolling and aggregated into 1-year, 3-year, and 5-year estimates, they do not align in time with the decennial census data. Citizenship data from the decennial census, by contrast, would align in time with the total and voting-age population data from the census that jurisdictions already use in redistricting.

—The ACS estimates are reported at a 90 percent confidence level, and the margin of error increases as the sample size—and, thus, the geographic area—decreases. See U.S. Census Bureau, *Glossary: Confidence interval (American Community Survey), available at* https://www.census.gOv/glossary/#term__ConfidenceintervalAmericanCommunitySurvey (last visited November 22, 2017). By contrast, decennial census data is a full count of the population.

—Census data is reported to the census block level, while the smallest unit reported in the ACS estimates is the census block group. See *American Community Survey Data* 3, 5, 10. Accordingly, redistricting jurisdictions and the Department are required to perform further estimates and to interject further uncertainty in order to approximate citizen voting-age population at the level of a census block, which is the fundamental building block of a redistricting plan. Having all of the relevant population and citizenship data available in one data set at the census block level would greatly assist the redistricting process.

For all of these reasons, the Department believes that decennial census questionnaire data regarding citizenship, if available, would be more appropriate for use in redistricting and in Section 2 litigation than the ACS citizenship estimates.

Accordingly, the Department formally requests that the Census Bureau reinstate into the 2020 Census a question regarding citizenship. We also request that the Census Bureau release this new data regarding citizenship at the same time as it releases the other redistricting data, by April 1 following the 2020 Census. At the same time, the Department requests that the Bureau also maintain the citizenship question on the ACS, since such question is necessary, *inter alia,* to yield information for the periodic determinations made by the Bureau under Section 203 of the Voting Rights Act, 52 U.S.C. § 10503.

Please let me know if you have any questions about this letter or wish to discuss this request I can be reached at (202) 514–3452, or at Arthur.Gary@usdoj.gov.

Sincerely yours,

Arthur E. Gary
General Counsel
Justice Management Division

Senator MORAN. General, thank you very much.

COPS REALIGNMENT TO OJP

Let me turn to the Community Oriented Policing Services (COPS) Program. Your fiscal year 2019 request proposes transfer the COPS office of the—I'm sorry—the COPS office to the Department Office of Justice Programs. But, in executing this transfer, the program itself will take a $176 million reduction from fiscal year 2018 enacted levels. As you know, the COPS Program has received broad bipartisan support from this subcommittee in the

past. And, Attorney General, could you explain to me, to the subcommittee, why this restructuring is useful or necessary?

Attorney General SESSIONS. Well, it is popular with this subcommittee, and popular with the Congress. Most Presidents often have not been as supportive as the Congress has. So, once again, our budget is below the request you had asked. We do believe that we can save money and be—provide more money for the grants themselves by consolidating the COPS Program in the Bureau of Justice—Office of Justice Programs and its subcomponent, Bureau of Justice Statistics. They have the infrastructure, the teamwork, and the capability of managing grants. And we think that would be a nice step to improve productivity and efficiency. It would not undermine the program, in my view, in any way. It's very popular with our law enforcement officers. And we also are creating a circumstance and recommending that more of the money be available as a priority to school resource officers to deal with violence in schools.

Senator MORAN. Thank you for your response.

HIGH INTENSITY DRUG TRAFFICKING AREAS (HIDTA)

Let me turn to HIDTA, the High Intensity Drug Trafficking Areas. Your fiscal year 2019 request, you propose to transfer the HIDTA Program from the Office of National Drug Control Policy under the Executive Office of the President to the Drug Enforcement Administration. So, HIDTA initiatives provide assistance through Federal grants to State, local, and Tribal law enforcement agencies operating in areas determined to be critical drug trafficking regions of the United States, including, unfortunately, several in Kansas. Often, these HIDTA initiatives work hand in hand with the Drug Enforcement Administration. I understand there are a large number of special agents within the DEA that are solely dedicated to the HIDTA Program. While I understand the desire and rationale of supporting the transfer of this program to DEA, I also recognize the concerns, expressed by some of my colleagues and by certain law enforcement entities in Kansas, that this transfer may hamper an important and successful grant program by moving it to an agency with no grantmaking experience. Can you address these concerns and elaborate on why you believe that this programmatic shift is necessary?

Attorney General SESSIONS. Chairman Moran, the President challenged all of us to seek to improve the efficiency and productivity of the Government. You are correct that DEA and the HIDTA organization have worked closely together for many, many years—I guess, actually since the beginning. I remember when it was created. The—HIDTA reports through, or to, the ONDCP, the Office of National Drug Control Policy. That is a policy function. Bill Bennett was the first, I believe, Director. And it was supposed to coordinate the various Federal agencies that deal with drugs and to make sure that our budgets were properly constructed of all, whether it's State Department, Defense Department, or Health and Human Services, wherever money is being spent on drugs.

So, I think it is a better organizational structure, that that function of ONDCP remain as its priority, and the actual investigating and prosecuting cases be done through the DEA. But, the HIDTA

teams, the HIDTA people, the community leaders that form the councils that lead the HIDTAs, will remain in effect. The only difference would be that the grant money would come out of—be managed from DEA. And that would, we hope, engender an even closer relationship.

Senator MORAN. General, thank you.

Now my opportunity to recognize the Ranking Member of the subcommittee for her questioning.

Senator SHAHEEN. Thank you, Mr. Chairman.

LEGAL ORIENTATION PROGRAM

And thank you, Attorney General Sessions, for your decision on the Legal Orientation Program. I'm pleased to hear that you have responded to the concerns that Senator Moran and I raised.

METHODOLOGY OF THE EFFICIENCY STUDY

I would just point out that one of the other items in that letter was a request for information regarding the methodology of the efficiency study that is underway. I hope that information would be forthcoming to us as soon as that's available.

Attorney General SESSIONS. I will make sure that happens.

[The information follows:]

The Department of Justice has provided its methodology for the Legal Orientation Program (LOP) efficiency study to the Senate Appropriations Committee under separate cover.

Senator SHAHEEN. Thank you.

HIDTA AND DEA AND GRANTS

I wanted to follow up on Senator Moran's question about the HIDTA Program, because that has also been very important in New Hampshire. I'm sure, when you were there, you heard how helpful the program has been in addressing our opioid epidemic and actually capturing some of the drugs that have been coming across the border into New Hampshire. I appreciate your interest in efficiency, although I've heard from the folks who participate in HIDTA in New Hampshire that they are very happy where they are. But, as Senator Moran pointed out and as you acknowledged, the DEA is not a grant making agency. What is the DEA's plan for managing funding with this proposed move?

Attorney General SESSIONS. Well, we at the Department of Justice have tremendous experience in grant programs, in managing. We will be very supportive of DEA, which is our subordinate agency, in helping them to establish that kind of activity. But, again, I would say the actual funding, of course, will be Congress's decision. The leadership in the HIDTA community organizations would remain the same, but their grant money would be managed from DEA, which I do believe would help make that a tighter and better relationship. They'd still have their own independence and their own leadership teams. But, the—I think it could enhance the—that. And I do believe ONDCP probably never was created or expected to be a grant program of this kind.

COST OF GRANT MAKING MECHANISM

Senator SHAHEEN. Is there any assessment of what the cost of setting up that grant making mechanism would be within——

Attorney General SESSIONS. I believe——

Senator SHAHEEN [continuing]. The DEA?

Attorney General SESSIONS [continuing]. There is some expense in the initial setup, but I believe we can be able to do the grant program at certainly no more expense than currently exists, and maybe better, with our deep experience in grant making in the Department of Justice. So, it would go from the—basically, the White House ONDC office—ONDCP—to the Department of Justice.

Senator SHAHEEN. Well, I look forward to hearing more about that.

BYRNE JAG GRANTS

As I said in my opening statement, I am hearing from police chiefs throughout New Hampshire about their concern that the expected funding from the Byrne-JAG program has not yet been forthcoming. The Seventh Circuit released its decision on April 19, which held that the Justice Department exceeded its legal authority in placing conditions on Byrne-JAG. When you and I discussed this matter on the phone, you pointed out that, win or lose, those grants would go out. So, I just wondered what I should tell the police chiefs in New Hampshire about when they might expect funding.

COORDINATION WITH LOCAL, FEDERAL LAW ENFORCEMENT REGARDING IMMIGRANTS

Attorney General SESSIONS. Senator Shaheen, we intend to get that money out. Sooner is better than later. But, the litigation is an important piece of litigation, and we placed only the most minor of requirements on the grant program. We asked our State and local partners, "If you want to get the Byrne law enforcement grant"—we asked them to do two things. One was to, "Give us notice 48 hours before an illegal alien who you've arrested for some crime is released, and to allow us to pick that individual up at the detention facility rather than releasing them on the streets and having our ICE officers and others have to try to find a criminal that needs to be arrested." And that's a very dangerous thing, places law officers at risk. That's what the Homeland Security officials pleaded with us to ask for, so we pared it down to a minimal thing we ask of them. We didn't ask the police to interview people. We didn't ask them to go arrest people for us or anything like that. Only to give us notice before release and to allow us to pick the individual up, more—far more safely, at the detention facility.

Senator SHAHEEN. Well, this is a longstanding congressionally-mandated formula grant program. Why does DOJ think it can place conditions on this program which has been operating for so many years based on the mandate that Congress has given it? Could you also address whether you plan to hold funding for fiscal year 2018 in the same way that you've been holding it for fiscal year 2017?

Attorney General SESSIONS. Well, to the first part of your question, this is a statute Congress passed, 34 U.S.C. 10102(a)(6), and it says, "The Assistant Attorney General of OJP shall exercise such other powers and functions as may be vested in the Assistant Attorney General pursuant to this chapter or by delegation of the Attorney General, including placing special conditions on all grants and determining priority purposes for formula grants." So, we felt, when we went to court, that these minor conditions for receiving a Federal grant were very reasonable, and we're deeply disappointed that the court has not, at least to this moment, seen itself able to agree. And we'll, of course, abide by the law, but we do want to review the situation and see if we cannot improve it.

Senator SHAHEEN. I'm out of time, but just briefly, I know DOJ filed another motion with the Seventh Circuit on April 23. Do you expect to continue to go all the way up to the Supreme Court with your motions if you're denied again the Seventh Circuit?

Attorney General SESSIONS. I'll have to talk with our lawyers. They worked hard on this case. And we've not seen—so, one thing about it, it's one thing to deal with the merits, it's another matter to deal with a preliminary injunction. So, we have an injunction that I think went beyond the law, in the sense that—the case was first raised in Chicago. It has its own unique set of laws and policies. But, the judge issued an order, then bound the entire United States. Many of those are in—perfectly happy to comply with these requirements of the Department of Justice. So, it's a frustrating matter. It's a big deal. And I just would—I think—I have to say, I've been appreciative of our law enforcement leaders, who I think, by and large, agree that these minimum requirements are legitimate. So, they've been patient with us. But, I am worried about it. We're working hard to bring it to a conclusion.

Senator SHAHEEN. Thank you. I appreciate that. For States like New Hampshire, where we have no sanctuary cities, it puts us at a special disadvantage.

Senator MORAN. Senator, thank you.

I now recognize the Vice Chairman of the full committee, Senator Leahy.

Senator LEAHY. Thank you, Mr. Chairman.

ATTORNEY GENERAL RECUSAL AND MICHAEL COHEN INVESTIGATION

Attorney General, last week I sent you a letter regarding your commitment to recuse from "any existing or future investigations of any matters related in any way to the campaigns for President". Are you recused from the Federal investigation of the President's attorney, Michael Cohen, which reportedly involves matters directly related to the campaign, including possible campaign finance violations?

Attorney General SESSIONS. Senator Leahy, I am honoring the recusal in every case, in every matter that comes before the Department of Justice. I committed to that in my confirmation hearing, and I have honored that, and will continue to honor that. In——

Senator LEAHY. Did it include Cohen?

Attorney General SESSIONS. It is the policy of the Department of Justice that those who've recuse themselves not state the details of

it or any—or confirm the existence of a investigation, or the scope or nature of that investigation.

Senator LEAHY. I understand——

Attorney General SESSIONS. And so, I feel like, following the rules of the Department, which I'm trying to teach all of our people to do, that I should not answer that question. It would be inappropriate for me to do so.

Senator LEAHY. I know the question was not a surprise to you, and nor is your answer a surprise to me, but recusal here is not discretionary. It's required by Justice Department regulations when you have a "political relationship" with the President, which you've already acknowledged, and the President has a "specific and substantial interest" in the investigation. Now, the Federal judge granted the President's request to formally intervene in this matter, which is here in Judge Kimba Wood's order. And I'll be glad to give you a copy of this if you like. But, Judge Wood allows the President to formally intervene in this matter, so he is a member—or he is part of that investigation. And I would suggest he has a "specific and substantial interest". So, wouldn't—by Justice Department regulations, doesn't that require you to be recused?

Attorney General SESSIONS. Senator Leahy, it—I am required to be recused from any matter involving the substance of the cases—matters you raised in your opening statement, absolutely. And I will comply with that. But, to—it is not—it is the policy of the Department that if you get into discussing the details of those matters, you can reveal the existence, scope, or breadth, or nature of a matter, they would be inappropriate.

Senator LEAHY. And so——

Attorney General SESSIONS. So, I think the best answer for me, having given it some thought, is to say that I should not announce that. In fact, recusals that happen all the time in the Department are not made public, but they're internally binding.

Senator LEAHY. Have you sought any advice of career ethics officials about whether you should or should not recuse yourself in the Cohen matter?

Attorney General SESSIONS. I have sought advice on those matters, and I have not met with the top ethics person on it, but I can assure you I have not violated my recusal.

Senator LEAHY. And you do agree that the Justice Department regulations require recusal when you have a "political relationship" with somebody who has a "specific and substantial interest" in the investigation. That is basically the regulation, is it not?

Attorney General SESSIONS. That is the regulation, I believe, 600 some—part 1. But, that's the regulation that I felt required me——

Senator LEAHY. I know.

Attorney General SESSIONS [continuing]. To recuse myself.

ATTORNEY GENERAL RESIGNATION REGARDING FIRING OF DEPUTY ATTORNEY GENERAL ROSENSTEIN

Senator LEAHY. It was reported last weekend that you told the White House Counsel you would consider resigning as Attorney General if the President fired Deputy Attorney General Rosenstein. I'm not going to ask about that conversation. But, if the President were to improperly fire either the Deputy Attorney General who

supervises the Russia investigation or the Special Counsel, would you resign in opposition?

Attorney General SESSIONS. Senator Leahy, that calls for a speculative answer—or question calls for speculation. I just am not able to do that.

Senator LEAHY. And were you surprised by that question? You don't have to answer that. Your smile answers the question.

LEGAL ORIENTATION PROGRAM

And, lastly, on the—you've been asked about the Legal Orientation Program (LOP). Whatever study is being done there, that will be open and transparent, will it not?

Attorney General SESSIONS. We will do so. And, look, I have some doubts about that program. The committees believe in that program. We'll talk about it and—before any action occurs.

Senator LEAHY. Yes, because we have appropriated the money, and we have directed the program to go forward. So, I would hope that you do not take any action on it without being in touch with both the senior Republicans, senior Democrats of the committees that have instructed it.

Thank you, Mr. Chairman.

Senator MORAN. Mr. Vice Chairman, thank you very much.

Senator from Maine, Senator Collins.

Senator COLLINS. Thank you, Mr. Chairman. And let me, first, congratulate you. And I very much look forward to working with you and the Ranking Member.

ELDER FRAUD

Mr. Attorney General, before I turn to my questions, I want to thank you for your leadership on an issue that matters greatly to me. And that is fraud and scams that are directed against our senior citizens. You've really taken a leadership role on this. I know the Department announced, in February, that more than 250 defendants had been charged with scamming more than a million Americans, for a total amount in excess of a half a billion dollars. It's an issue we've been trying to get the Justice Department to pay attention to for years, and I very much appreciate your leadership.

I'd now like to turn to my questions, which may not be quite as pleasing to your ears as my thank you.

DEFERRED ACTION FOR CHILDHOOD ARRIVALS (DACA)

The administration has now lost its third Deferred Action for Childhood Arrivals (DACA) case in Federal court. That program and the fate of the group of young people for whom there is a pretty widespread consensus that we should try to help continues to be clouded by uncertainty. Given the repeated failures in court and the fact that the President has repeatedly indicated that border security remains a high priority for him, wouldn't it make sense for the administration to revisit the bipartisan DACA compromise that was proposed earlier this year, that received 54 votes on the Senate floor, which would have funded the President's border security program in its entirety while providing a pathway to citizenship for DACA young people who have good records?

Attorney General SESSIONS. Senator Collins, I do believe there is an opportunity for legislation by Congress. I served 20 years on your side of the table. My good—my feeling is that that's possible. I've said that in a number of hearings that I've been in since I've been Attorney General. So, I think that's possible.

I would say that two district courts, one in New York and California, did issue injunctions stopping the simple removal of the memoranda, really, is all it was, of the Homeland Security to enact DACA. DACA was, basically, rejected by Congress. Congress did not pass it. And the President had said repeatedly he could not do it on his own. But, once he—it was not passed in Congress, then the President got his Homeland Security team to enact this matter. I think it was unlawful. It's pretty much the finding of the Fifth Circuit in a related case involving DACA. And there was a court in Maryland that rejected this kind of injunction. So, three courts ruled on this DACA, two said it was not sustainable, and one said it was.

So, we believe that the right thing is legislation. I would like to see law—look, I'll be frank. My view is, a plan that will end the illegality along with some relief for the DACA young people is possible. It can be done. And the President has laid out a number of options, and it's been unfortunate that it hasn't come together.

Senator COLLINS. Well, Mr. Attorney General, many of us on this panel worked very hard to try to get that done and to put DACA in law. And I think that, had the Department of Homeland Security not issued a very misleading press release the night before the vote, accompanied by a veto threat by the President, we were there. At one point, I could count the 60 votes.

But, we want to legislate in that area. I agree with you that it should be legislated. And I hope that, with the court rulings, that there is an extra impetus for the administration to work with us. And it's also an opportunity for the President to get a very high priority of his in strengthening the border, which we also need to do.

Attorney General SESSIONS. Yes.

Senator COLLINS. So, I thank you.

Attorney General SESSIONS. Senators, I—just let me say, I think this is doable, but it cannot be done if we haven't fixed the illegal immigration flow. And my concern about the bill that you referred to was, it did not sufficiently close the loopholes and fix some of the problems that we have. If we could get that done, I think the possibility of a successful legislation would be greater. That's what the President said. And I think you—I think it could be done.

Senator COLLINS. Thank you, Mr. Chairman.

Senator MORAN. Senator from Hawaii, Senator Schatz.

Senator SCHATZ. Thank you, Mr. Chairman. Congratulations, Mr. Chairman. I'm looking forward to working with you. I will miss you on the MILCON VA Subcommittee, but I understand and forgive you.

CENSUS CITIZENSHIP QUESTION

But, Mr. Attorney General, thank you for being here. I want to follow up on a question that Chairman Moran asked about the citizenship question on the Census. Communities of color advocacies—

excuse me—advocacy organizations around the Census are, frankly, worried that the presence of that question is going to discourage participation in immigrant communities. And I understand that it's on the long form, and I understand that it's not without precedent that we're doing that. But, I have two questions for you. First, how do you respond to those communities of color who are worried that this will simply scare people to not respond to the Census at all, number one? And number two is, you've indicated that the Civil Rights Division wants the data, and I'm wondering why.

Attorney General SESSIONS. I'll be glad to send you the letter that they—we produced regarding this issue, detailing the advantages of it—having the information. I do note that it is being asked on the other survey. And I would suggest that—I've learned it's the 12th question on the form—the last question, I believe. It shouldn't scare people. They don't have to answer it. And—really—and so, I would think that that's a very reasonable thing. And I believe the concerns over it are overblown.

[The information follows:]

December 12, 2017

Dr. Ron Jarmin
Performing the Non-Exclusive Functions and Duties of the Director
U.S. Census Bureau
United States Department of Commerce
Washington, D.C. 20233–0001

Re: Request To Reinstate Citizenship Question On 2020 Census Questionnaire

Dear Dr. Jarmin:

The Department of Justice is committed to robust and evenhanded enforcement of the Nation's civil rights laws and to free and fair elections for all Americans. In furtherance of that commitment. I write on behalf of the Department to formally request that the Census Bureau reinstate on the 2020 Census questionnaire a question regarding citizenship, formerly included in the so-called "long form" census. This data is critical to the Department's enforcement of Section 2 of the Voting Rights Act and its important protections against racial discrimination in voting. To fully enforce those requirements, the Department needs a reliable calculation of the citizen voting-age population in localities where voting rights violations are alleged or suspected. As demonstrated below, the decennial census questionnaire is the most appropriate vehicle for collecting that data, and reinstating a question on citizenship will best enable the Department to protect all American citizens' voting rights under Section 2.

The Supreme Court has held that Section 2 of the Voting Rights Act prohibits "vote dilution" by State and local jurisdictions engaged in redistricting, which can occur when a racial group is improperly deprived of a single-member district in which it could form a majority. See *Thornburg v. Gingles,* 478 U.S. 30, 50 (1986). Multiple Federal courts of appeals have held that, where citizenship rates are at issue in a vote-dilution case, citizen voting-age population is the proper metric for determining whether a racial group could constitute a majority in a single-member district See, e.g., *Reyes v. City of Farmers Branch,* 586 F.3d 1019, 1023–24 (5th Cir. 2009); *Barnett v. City of Chicago,* 141 F.3d 699, 704 (7th Cir. 1998); *Negrn v. City of Miami Beach,* 113 F.3d 1563, 1567–69 (11th Cir. 1997); *Romero v. City of Pomona,* 883 F.2d 1418, 1426 (9th Cir. 1989), overruled in part on other grounds by *Townsend v. Holman Consulting Corp.,* 914 F.2d 1136, 1141 (9th Cir. 1990); see also *LULAC v. Perry,* 548 U.S. 399, 423–442 (2006) (analyzing vote-dilution claim by reference to citizen voting-age population).

The purpose of Section 2's vote-dilution prohibition "is to facilitate participation . . . in our political process" by preventing unlawful dilution of the vote on the basis of race. *Campos v. City of Houston,* 113 F.3d 544, 548 (5th Cir. 1997). Importantly, "[t]he plain language of section 2 of the Voting Rights Act makes clear that its protections apply to United States citizens." *Id.* Indeed, courts have reasoned that "[t]he right to vote is one of the badges of citizenship" and that "[t]he dignity and very concept of citizenship are diluted if noncitizens are allowed

to vote." *Barnett,* 141 F.3d at 704. Thus, it would be the wrong result for a legislature or a court to draw a single-member district in which a numerical racial minority group in a jurisdiction was a majority of the total voting-age population in that district but "continued to be defeated at the polls" because it was not a majority of the citizen voting-age population. *Campos,* 113 F.3d at 548.

These cases make clear that, in order to assess and enforce compliance with Section 2's protection against discrimination in voting, the Department needs to be able to obtain citizen voting-age population data for census blocks, block groups, counties, towns, and other locations where potential Section 2 violations are alleged or suspected. From 1970 to 2000, the Census Bureau included a citizenship question on the so-called "long form" questionnaire that it sent to approximately one in every six households during each decennial census. See, e.g., U.S. Census Bureau, *Summary File 3: 2000 Census of Population & Housing*—Appendix B at B–7 (July 2007), *available at* https://www.census.gov/prod/cen2000/doc/sf3.pdf (last visited Nov. 22, 2017); U.S. Census Bureau, Index of Questions, *available at* https://www.census.gov/history/www/through_the_decades/index_of_questions/ (last visited Nov. 22, 2017). For years, the Department used the data collected in response to that question in assessing compliance with Section 2 and in litigation to enforce Section 2's protections against racial discrimination in voting.

In the 2010 Census, however, no census questionnaire included a question regarding citizenship. Rather, following the 2000 Census, the Census Bureau discontinued the "long form" questionnaire and replaced it with the American Community Survey (ACS). The ACS is a sampling survey that is sent to only around one in every 38 households each year and asks a variety of questions regarding demographic information, including citizenship. See U.S. Census Bureau, *American Community Survey Information Guide at 6, available at* https://www.census.gov/content/dam/Census/programs-surveys/acs/about/ACS Information Guide.pdf (last visited Nov. 22, 2017). The ACS is currently the Census Bureau's only survey that collects information regarding citizenship and estimates citizen voting-age population.

The 2010 redistricting cycle was the first cycle in which the ACS estimates provided the Census Bureau's only citizen voting-age population data. The Department and State and local jurisdictions therefore have used those ACS estimates for this redistricting cycle. The ACS, however, does not yield the ideal data for such purposes for several reasons:

—Jurisdictions conducting redistricting, and the Department in enforcing Section 2, already use the total population data from the census to determine compliance with the Constitution's one-person, one-vote requirement, see *Evenwel v. Abbott,* 136 S. Ct. 1120 (Apr. 4, 2016). As a result, using the ACS citizenship estimates means relying on two different data sets, the scope and level of detail of which vary quite significantly.

—Because the ACS estimates are rolling and aggregated into 1-year, 3-year, and 5-year estimates, they do not align in time with the decennial census data. Citizenship data from the decennial census, by contrast, would align in time with the total and voting-age population data from the census that jurisdictions already use in redistricting.

—The ACS estimates are reported at a 90 percent confidence level, and the margin of error increases as the sample size—and, thus, the geographic area—decreases. See U.S. Census Bureau, *Glossary: Confidence interval (American Community Survey), available at* https://www.census.gOv/glossary/#term_ConfidenceintervalAmericanCommunitySurvey (last visited November 22, 2017). By contrast, decennial census data is a full count of the population.

—Census data is reported to the census block level, while the smallest unit reported in the ACS estimates is the census block group. See *American Community Survey Data* 3, 5, 10. Accordingly, redistricting jurisdictions and the Department are required to perform further estimates and to interject further uncertainty in order to approximate citizen voting-age population at the level of a census block, which is the fundamental building block of a redistricting plan. Having all of the relevant population and citizenship data available in one data set at the census block level would greatly assist the redistricting process.

For all of these reasons, the Department believes that decennial census questionnaire data regarding citizenship, if available, would be more appropriate for use in redistricting and in Section 2 litigation than the ACS citizenship estimates.

Accordingly, the Department formally requests that the Census Bureau reinstate into the 2020 Census a question regarding citizenship. We also request that the Census Bureau release this new data regarding citizenship at the same time as it releases the other redistricting data, by April 1 following the 2020 Census. At the same time, the Department requests that the Bureau also maintain the citizenship question on the ACS, since such question is necessary, *inter alia,* to yield informa-

tion for the periodic determinations made by the Bureau under Section 203 of the Voting Rights Act, 52 U.S.C. § 10503.

Please let me know if you have any questions about this letter or wish to discuss this request I can be reached at (202) 514–3452, or at Arthur.Gary@usdoj.gov.

Sincerely yours,

Arthur E. Gary
General Counsel
Justice Management Division

Senator SCHATZ. Okay. Let's move on.

OPIOID EPIDEMIC AND MEDICAL MARIJUANA

I really appreciate what you're doing on opioids, and I am especially pleased that this subcommittee and others are working in a bipartisan fashion to solve this problem. And I want you to interpret the following line of questioning not in an adversarial way.

I want to ask you about medical marijuana, and I want to tell you that I'm the son of a principal investigator, and I came to the question of medical marijuana with great skepticism. But, there are credible scientific studies that show that, where medical marijuana is legal, opioid overdose deaths have gone down. And these studies are published in the Journal of the American Medical Association and the RAND Corporation, with the input from the National Institute on Drug Abuse.

The opioid epidemic is a major crisis. And I'm wondering whether you think, given your history as a successful conservative politician with a certain set of beliefs about marijuana, in particular, whether, given two things happening at once—there's all kinds of new data that shows an inverse correlation between the availability of medical marijuana and opioid deaths and opioid prescriptions and opioid illegal activity, and your commitment to try to reduce this opioid epidemic—do you have at least an aperture to look at these data and reconsider your opposition to medical marijuana and marijuana in general?

Attorney General SESSIONS. Medical marijuana, as one physician told me, whoever heard of taking a medicine when you have no idea how much medicine you're taking and ingesting it in the fashion that it is, which is, in itself, unhealthy. However, I think there can be—there may well be some benefits from medical marijuana, and it's perfectly appropriate to study that. I do not believe, at this point, that—I think one study that suggested there's no—that there's some sort of inverse relationship between increased marijuana use and reducing of deaths. I did see that. I've asked my staff to take a look at it, because science is very important. And I don't believe that will be sustained, in the long run. The American Medical Association is absolutely resolutely opposed to marijuana use. I think so is the Pediatric——

Senator SCHATZ. Mr. Attorney General——

Attorney General SESSIONS [continuing]. Association. They've——

Senator SCHATZ. Sure. My final——

Attorney General SESSIONS [continuing]. Studied it over years. So, it's a matter of science. And——

Senator SCHATZ. Sure.

Attorney General SESSIONS [continuing]. I think we should——

Senator SCHATZ. My final question——

Attorney General SESSIONS [continuing]. Be free to discuss it.

Senator SCHATZ. My final question. The DEA, in August of 2016, called for applications to produce more federally-approved research-grade marijuana. Since then, the Department of Justice has received 25 applications, but none of them have been responded to either with an approval or denial. What is the status of those applications?

Attorney General SESSIONS. We are moving forward, and we will add—fairly soon, I believe, the paperwork and reviews will be completed, and then we will add additional suppliers of marijuana under the controlled circumstances. But, there is—a lot of people didn't know, I didn't know—a treaty—international treaty of which we are a member, that requires certain controls in that process. And the previous proposal violated that treaty. We've now gotten language I believe complies with the treaty and will allow this process to go forward.

Senator SCHATZ. If the Chair will indulge me, one final comment.

We're all evolving on this issue, some quicker than others, maybe some too quick. And I really believe that we have to do this in the proper way. I think there are good civil rights reasons for decriminalizing and for pursuing a Federalist approach around this. But, if we're narrowly addressing the question of whether or not this is medicine, then we do need the Department of Justice, the FDA, and everybody to work together to pursue that question, double-blind studies and all. And I also think that we need to understand we are in a humanitarian crisis when it comes to the opioid epidemic, which means that we may have to cast aside some of the things that we've believed all of our lives as it relates to other drugs and look at harm reduction. I appreciate you keeping an open mind along those lines.

Thank you.

Attorney General SESSIONS. Thank you, Senator Schatz.

Senator MORAN. Senator, thank you.

Senator from Oklahoma, Senator Lankford.

Senator LANKFORD. Thank you, Mr. Chairman.

Let me add to that conversation a little bit before we—before I jump into a line of questions.

MEDICAL MARIJUANA

I am one of the skeptical individuals that, so far, has not evolved on this issue of marijuana. I have a hard time believing that, if only more of our parents smoked more marijuana, our kids would be so much better and our families would be so much better, and employment would be so much better if more of our employees smoked more marijuana. I just have a hard time believing that.

And, as far as medicinal issues, this is an area the NIH has done active work on. And NIH is—currently has several billion dollars that the Appropriations Committee has allocated to them to be able to study pain medications that are nonaddictive, to try to address that. And that was entirely appropriate to do. We have an opioid epidemic. I'd rather not swap an opioid epidemic with addiction to marijuana and just say we solved the problem. We didn't solve the problem, long term.

And so, I'd love to be able to continue to maintain this. There are ways to be able to manage all kinds of different things to be able to manage pain. But, my preference would be that our Nation doesn't become more and more addicted to marijuana to be able to solve our opioid addiction.

ATF REORGANIZATION

With that, let me mention a couple of things. Budget related. You have made some recommendations on combining some entities and moving some things around, specifically with ATF. And I'd like to get a chance to talk to you a little bit more about that. What proposals are you making with ATF, in particular, to be able to work on some efficiencies?

Attorney General SESSIONS. Well, the Alcohol, Tobacco, and Firearms originally came out of the Department of Treasury. And when—because revenuers collected revenue, the old moonshining-chasing ATF guys collected—because you weren't paying taxes on your moonshine. So, that's the history of it. But, over the years, ATF has shifted far more to being the front-line agents on violent crime, bombs, explosives, arson, and firearms. So, that's where the trend has gone. So, this agreement, I think, is a smart one. It moves the tax part of ATF that still exists back to Treasury and keeps a leaner, more focused ATF on firearms and explosives in the Department of Justice.

BUREAU OF PRISONS AND COMPONENT REALIGNMENT

Senator LANKFORD. How long do you think it would take to make that transition?

Attorney General SESSIONS. I think we could do it within the year, and we would expect to, if Congress would approve it. ATF has accepted it. The—their leadership is supportive. So, I believe it's something that would be good, be efficient, and a smart realignment of resources.

Senator LANKFORD. Okay. Any other areas of realignment of resources that you'd recommend with DEA, ATF, FBI, any of those, as well, that you would recommend that are similar to that?

Attorney General SESSIONS. Well, we've made a number of recommendations for consolidation in the Bureau of Prisons. We've made some within some of the regional offices of Community Relations Service. We've had a number of other changes that we are proposing.

Senator LANKFORD. All right. Well——

Attorney General SESSIONS. We believe that every dollar that we can properly expend at the point of the spear effectively carrying out the taxpayer desire rather than feeding a bureaucracy is good for America. And that's our goal.

ATF AND FBI INVESTIGATIONS

Senator LANKFORD. Okay. That would be helpful.

Your predecessor, Eric Holder, and I had multiple conversations over several years about an issue between ATF and FBI and their processes of how they actually do an investigation. FBI has one set of processes, ATF has another set of processes. It came out most

evident during the Fast and Furious time period, around 2010 and 2011, when there was a close examination of the processes that ATF went through to be able to do that investigation for Fast and Furious, and the FBI agents immediately stepped out and said, "We would never be allowed to do what ATF did." So, during that time period, a lot of conversations that I had with Eric Holder was, Is there a study to be able to look at and try to figure out if these two processes need to be aligned, if ATF needs to have more similar structure to what FBI does? How does that work? Eric Holder, over and over again, told me, year after year, "We're going to take a look at it. We're going to take a look at it," but I don't think they ever did. I never got a report back to try to finalize that. Could you help us take a look at that again? This is not trying to hurt ATF, but trying to figure out, if we've got good, established processes, why do we have two different sets of processes in two different entities there?

Attorney General SESSIONS. I would be glad to discuss——

Senator LANKFORD. Great.

Attorney General SESSIONS [continuing]. That with you and see if—what kind of problems exist. I don't think there are any process—processes that should have justified Fast and Furious, where assault weapons are allowed to walk——

Senator LANKFORD. Right.

Attorney General SESSIONS [continuing]. As we call it, across the border to——

Senator LANKFORD. Well, that was the number-one thing I heard from FBI——

Attorney General SESSIONS. So, I don't know what—how that happened yet. I know you've dug into it as—probably as deeply as anybody in Congress. So, thank you for that.

Senator LANKFORD. Okay.

CRIME VICTIMS FUND

Let me ask one more strange question. Are we out of crime victim needs? So, the Crime Victims Fund is out there. It has about $10 billion sitting in it. Do we have that fully established, all crime victim issues are taken care of, and we don't need to allocate additional dollars towards that area?

Attorney General SESSIONS. No.

Senator LANKFORD. Well, that $10 billion has sat there and has been used as what's called a Changes in Mandatory Program, year after year.

Attorney General SESSIONS. CHIMPS.

Senator LANKFORD. And it's had this fake spending, year after year. I did notice, in your budget, that you're recommending that we not use that as a pay-for, that we set a ceiling on that spending, save that money for crime victims, and not try to shift that over to somewhere else.

Attorney General SESSIONS. Our budget would eliminate that procedure. It's something I've opposed, but it's stuck. It's been—perhaps as a Member of this subcommittee, something might happen. But, it is a—it's something that's continued for a long time. We propose fixing that problem.

Senator LANKFORD. Well, I met yesterday with a group of crime victims, and they had a real concern that that money is used, not for crime victims, but is used for a gimmick in Congress. And they'd love to see that money actually go to crime victim organizations and uses for that.

With that, I yield back.

Senator MORAN. Senator, thank you.

Senator Van Hollen.

Senator VAN HOLLEN. Thank you, Mr. Chairman. And congratulations to you. Look forward to working with you and the Ranking Member and others.

Mr. Attorney General, welcome.

DACA

And I want to associate myself with the comments of Senator Collins with respect to DACA. And that's obviously part of an ongoing discussion, but we've got to address this critical issue.

ROLE OF THE PARDON ATTORNEY

We all have an interest in protecting the integrity of the Justice Department. And, as a Member of the Senate Judiciary Committee, you made a statement at a hearing that I thoroughly agree with. And I'm quoting, "The power to pardon is a legitimate power. It is one that ought to be exercised with great care." And then you end it, saying, "I believe in the role of the Pardon Attorney," unquote. The Pardon Attorney is an office within the DOJ, is it not?

Attorney General SESSIONS. It is a position in the Department of Justice.

Senator VAN HOLLEN. And can you think of any pardon, during the 8 years of the Obama administration, that did not go through the Office of the Pardon Attorney?

Attorney General SESSIONS. I don't recall. I know the—a number did during the Clinton administration.

[The information follows:]

At the hearing on April 25, 2018, Senator Van Hollen asked: "[C]an you think of any pardon during the 8 years of the Obama administration that didn't—that did not go through the Office of the Pardon Attorney?" I was unable to recall during the hearing. I have since researched the matter and would like to supplement my testimony with the following answer:

> The Constitution provides the President with plenary power to grant clemency by way of commutation, pardon, or remission of restitution. The Office of the Pardon Attorney is a Department of Justice component that processes clemency applications for the President. There is, however, no requirement that the President only grant clemency to individuals whose applications have been processed by the Pardon Attorney. Senator Van Hollen asked whether President Obama pardoned any individuals whose applications were not processed by the Pardon Attorney. Based on information provided by the Pardon Attorney, it is my understanding that the Pardon Attorney did not process applications for four Iranians (Nima Golestaneh, Bahram Mechanic, Khosrow Afghahi, and Tooraj Faridi) who were pardoned by President Obama in January of 2016.

Senator VAN HOLLEN. I—starting with the Obama administration.

Attorney General SESSIONS. Okay.

Senator VAN HOLLEN. Two terms, 8 years.

Attorney General SESSIONS. I don't——

Senator VAN HOLLEN. I don't think there was one.

Attorney General SESSIONS. I don't know, actually.

Senator VAN HOLLEN. And I don't think there was a single pardon during the presidency of George W. Bush that did not go through the Office—the Pardon Office. And, you're right, the comment you made was in connection with pardons made by President Clinton. But, my question to you is, Do you stand by that statement that you made, back during that hearing, that the Pardon Attorney ought—the pardon power ought to be exercised with great care, and that you believe in the role of the Pardon Attorney in that process? Do you stand by that statement?

Attorney General SESSIONS. I don't think that statement needs modifying, but it's obviously in context that the President of the United States clearly has a constitutional power to——

Senator VAN HOLLEN. I understand, Senator.

Attorney General SESSIONS [continuing]. Execute pardons——

Senator VAN HOLLEN. I——

Attorney General SESSIONS. Let me finish.

Senator VAN HOLLEN. No——

Attorney General SESSIONS [continuing]. Execute pardons without inquiring of the Pardon Attorney.

Senator VAN HOLLEN. And I'm not——

Attorney General SESSIONS. It's been done very frequently in history.

Senator VAN HOLLEN. Well, Mr. Attorney General, I'm not——

Attorney General SESSIONS. But, we do have a——

Senator VAN HOLLEN. Mr. Attorney General—Mr. Chairman, if I could—Mr. Chairman—I'm not disputing the President's pardon authority. I'm——

Attorney General SESSIONS. Well——

Senator VAN HOLLEN [continuing]. Actually—I'm just quoting—

Attorney General SESSIONS. Well, let——

Senator VAN HOLLEN [continuing]. A statement you made that I agree with——

Attorney General SESSIONS. I'll——

Senator VAN HOLLEN [continuing]. With respect to the role of the Pardon Attorney. And, at the time, you made comments in the hearings, saying that not going through that process was an abuse of power. So, my question to you is whether or not you think not going through the Pardon Attorney is an abuse of the power—not an unauthorized power, but do you think it's an inappropriate use of that power?

Attorney General SESSIONS. I don't know that I used that phrase, "abuse of power," because it's clearly not. It's clearly within the power of the President to execute pardons without the Pardon Attorney. If you're doing a lot of pardons, and you want to have a lot of cases, and you want to have them reviewed by independent force, the Pardon Attorney provides a real asset to a chief executive before executing a pardon.

Senator VAN HOLLEN. Did the pardon of Sheriff Joseph Arpaio go through the Pardon Attorney Office?

Attorney General SESSIONS. I don't believe it did.

Senator VAN HOLLEN. Yes. Did the——

Attorney General SESSIONS. Certainly——

Senator VAN HOLLEN [continuing]. Pardon of Scooter Libby go through that——

Attorney General SESSIONS. The——

Senator VAN HOLLEN [continuing]. Office?

Attorney General SESSIONS. I don't believe it did.

Senator VAN HOLLEN. Okay. But, do you agree with what you said earlier, that that is the appropriate course of action for a pardon? I'm not asking you what the President's authority is. I'm asking you what you think the appropriate course of action is to make sure that the public has confidence in the integrity of the process.

Attorney General SESSIONS. There are opportunities that the Pardon Attorney can be utilized very effectively, and it has been, over time. But, I don't think it's in any way required that any President seek the opinion of——

Senator VAN HOLLEN. It's not a——

Attorney General SESSIONS [continuing]. The Pardon Attorney.

Senator VAN HOLLEN [continuing]. Requirement. I'm just—you're—I'm quoting from the statement you made, saying it was abuse of process in a particular case made by President Clinton.

Let me ask you about something else that I also think we agree on, in part, which——

Attorney General SESSIONS. Well, I would just say, the pardons President Clinton made were stunning, shocking, and unacceptable on the merits.

Senator VAN HOLLEN. And——

Attorney General SESSIONS. But, the two—Arpaio was 80-some years of age, and he was convicted of a misdemeanor.

Senator VAN HOLLEN. Mr. Attorney General, I'm not——

Attorney General SESSIONS. And Mr. Libby is a well known——

Senator VAN HOLLEN. In both cases——

Attorney General SESSIONS [continuing]. Circumstances of that case.

Senator VAN HOLLEN. In both cases, as you know, they did not go——

Attorney General SESSIONS. He contributed greatly to——

Senator VAN HOLLEN [continuing]. Through what you described was the appropriate process.

NATIONAL PUBLIC SAFETY PARTNERSHIP AND CITY OF BALTIMORE

Let me ask you about the National Public Safety Partnership, PSP, which is a program established by the administration to help fight violent crime, one that I support. The City of Baltimore was invited to apply in a letter from the Justice Department, back in 2017. The Justice Department said to the City, "We've concluded that your jurisdictions have levels of violence that exceed the national average, and that you're ready to receive the intensive assistance from the Department." Then they got these three criteria that were listed by the Department with respect to what you refer to as sanctuary cities. And the City's application was denied.

Here's what I want to say at this point in time. Baltimore City does not have jurisdiction over the detention centers in Baltimore City. That's a State of Maryland decision. So, we may have differences on the criteria you set out with. And, as Senator Shaheen said, the Seventh Circuit has reviewed this, and I think those deci-

sions are going to apply also to your criteria in the National Public Safety Partnership Program. But, setting that aside, I hope you'll work with me on this—Baltimore City. We have a violent crime problem, and the City of Baltimore does not have—the laws are State laws regarding DHS as—the access of the Department of Homeland Security to their jails. So, I'd just ask for your commitment to see if we can look for a way to see if they can qualify for the funds.

Attorney General SESSIONS. I would be glad to do that. We have had some—I think more than one—at least one circumstance in which the jail was run by somebody else other than the jurisdiction that appeared to be. So, that created a problem and actually led to the approval on the grant. So, I'll be glad to look at that.

Senator VAN HOLLEN. Thank you.

Senator MORAN. Senator, thank you.

Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman. And, to both you and the Ranking Member, know that I look forward to working with you as you execute this appropriations bill through your committee and move it onto the floor. Look forward to that commitment.

Mr. Attorney General, it's good to see you again. Thank you for the conversation last week.

MARIJUANA LEGALIZATION

I wanted to raise again with you the subject of marijuana. Alaska is one of those States that has moved forward, not only with the medical marijuana, but also the sale and cultivation of recreational use, a very aggressive State regulation. This was not something that I had supported through that statewide initiative. In fact, I worked against it. But, it was passed resoundedly through the State. My constituents expect me to work to represent them.

ALASKA H.J. RES. 21

Mr. Chairman, I'd like unanimous consent to enter into the record a resolution that was recently passed by the Alaska Legislature.

Senator MORAN. Without objection.

[The information follows:]

30-LS0820\J

SENATE CS FOR SS FOR HOUSE JOINT RESOLUTION NO. 21(JUD)

IN THE LEGISLATURE OF THE STATE OF ALASKA

THIRTIETH LEGISLATURE - SECOND SESSION

BY THE SENATE JUDICIARY COMMITTEE

Offered: 4/17/18
Referred: Rules

Sponsor(s): REPRESENTATIVES GUTTENBERG, Drummond, Tarr, Kawasaki, Kito, Gara, Parish, Lincoln, LeDoux

SENATORS Begich, Wielechowski, Egan, Gardner

A RESOLUTION

Urging the federal government to respect the authority of the state to regulate marijuana use, production, and distribution; and urging the federal government to reconsider its listing of marijuana as a schedule I controlled substance.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS art. I, sec. 22, Constitution of the State of Alaska, establishes a right to privacy, stating "The right of the people to privacy is recognized and shall not be infringed"; and

WHEREAS the Alaska Supreme Court held in Ravin v. State, 537 P.2d 494, 511 (Alaska 1975), that there is "no adequate justification for the state's intrusion into the citizen's right to privacy by its prohibition of possession of marijuana by an adult for personal consumption in the home . . . ."; and

WHEREAS the citizens of the state voted to legalize marijuana by way of Ballot Measure No. 2, an "Act to tax and regulate the production, sale, and use of marijuana," on November 4, 2014; and

WHEREAS the state has prioritized the federal marijuana enforcement objectives

stated in the August 29, 2013, memorandum from the United States Department of Justice to all United States Attorneys, including preventing the distribution of marijuana to minors, preventing revenue from the sale of marijuana from going to criminal enterprises, gangs, and cartels, preventing the diversion of marijuana from states where it is legal under state law in some form to other states, preventing state-authorized marijuana activity from being used as a cover or a pretext for the trafficking of other illegal drugs or other illegal activity, preventing violence and the use of firearms in the cultivation and distribution of marijuana, preventing drugged driving and the exacerbation of other adverse public health consequences associated with marijuana use, preventing the growing of marijuana on public land and the attendant public safety and environmental dangers posed by marijuana production on public land, and preventing marijuana possession or use on federal property; and

WHEREAS the state has implemented regulations under 3 AAC 306 that respect and support the federal priorities listed in the Department of Justice's August 29, 2013, memorandum; and

WHEREAS the American Medical Association supports public health-based strategies, rather than incarceration, for individuals possessing cannabis for personal use and urges the federal government to review its listing of marijuana as a schedule 1 controlled substance with the goal of facilitating clinical research and development of cannabinoid-based medicines and alternative delivery methods; and

WHEREAS, on August 1, 2017, Alaska Attorney General Jahna Lindemuth sent a letter to United States Attorney General Jeff Sessions stating that former federal policy, as articulated in the Department of Justice's August 29, 2013, memorandum, represented "a pragmatic approach that effectively created space for states to be responsive to their residents while also protecting federal priorities" and requesting the federal government to engage directly with states to discuss potential approaches before reaching any final decisions on changes to the Department of Justice's marijuana enforcement policies; and

WHEREAS, on January 16, 2018, Attorney General Lindemuth and the attorneys general of 18 other states, districts, and territories sent a letter urging the United States Congress to advance legislation to allow states that have legalized medical or recreational use of marijuana to bring legal marijuana-related commerce into the banking system; and

WHEREAS Alaska Governor Bill Walker and the governors of Colorado,

Washington, and Oregon sent a letter, dated April 3, 2017, urging United States Attorney General Jeff Sessions and United States Secretary of the Treasury Steve Mnuchin to engage with states where marijuana has been legalized before embarking on any changes to federal regulatory and enforcement systems; and

WHEREAS Alaska Governor Bill Walker sent letters to United States Attorney General Jeff Sessions, dated August 1, 2017, and August 14, 2017, stating the manner in which Alaska's regulatory framework governing state-licensed marijuana businesses addresses federal interests and urging the federal government to maintain policies that respect the state's authority; and

WHEREAS, on January 18, 2018, United States Senators Lisa Murkowski and Dan Sullivan joined with 14 other Senators from around the country in a letter to the Director of the United States Department of the Treasury's Financial Crimes Enforcement Network expressing continuing support for a 2014 Financial Crimes Enforcement Network guidance on Bank Secrecy Act expectations regarding marijuana-related businesses; and

WHEREAS United States Representative Don Young is cosponsoring H.R. 4779 (REFER Act of 2018), which would prohibit the United States Department of Justice from using federal funds to "detain, prosecute, sentence, or initiate civil proceedings against an individual, business or property, that is involved in the cultivation, distribution, possession, dispensation, or use of cannabis," when those activities are conducted in compliance with state law and local regulations; and

WHEREAS United States Attorney General Jeff Sessions' rescission of the Department of Justice's August 29, 2013, memorandum and other federal guidance on state marijuana policy demonstrates a need to address federal law;

BE IT RESOLVED that the Alaska State Legislature urges the federal government to respect the authority of the State of Alaska to regulate marijuana use, production, and distribution and forbear any federal interference in marijuana policy of states where marijuana has been legalized, and urges the United States Congress to address these issues while respecting states' rights; and be it

FURTHER RESOLVED that the Alaska State Legislature urges the federal government to reconsider its listing of marijuana as a federal schedule I controlled substance.

COPIES of this resolution shall be sent to the Honorable Donald J. Trump, President

of the United States; the Honorable Jeff Sessions, Attorney General of the United States; and the Honorable Lisa Murkowski and the Honorable Dan Sullivan, U.S. Senators, and the Honorable Don Young, U.S. Representative, members of the Alaska delegation in Congress.

Senator MURKOWSKI. This is H.J. Res. 21. It was passed unanimously out of both houses, and it urges the Federal Government to respect the authority of the State of Alaska to regulate marijuana use, production, and distribution, and generally respect States' rights.

Mr. Attorney General, we have talked about this in the aftermath of your decision to withdraw the Cole Memorandum. I had been disappointed with that, and expressed that I was concerned that the Department of Justice was less than a full partner with the States. I do understand that the White House has expressed support for legislation that will respect State supremacy when it comes to regulation, in the spirit of Federalism. I think that that—the comments that were made by my colleague from Hawaii, in terms of Members evolving on this, is important, but I do think, as we're seeing the States move forward, legislation like this is timely.

The States are telling us, though, that they need the Department of Justice to be a partner in the orderly administration of States' regulatory regimes, and not standing in the way as an obstacle. So, I would—I understand your position on this. Again, we've had many conversations. But, I would hope that we could have your assurance that, within the Department of Justice, that the Department will not be an obstacle to the consideration of this sort of legislation that may move forward.

Attorney General SESSIONS. Well, I can't make a commitment about what position we would take at this time, until we know exactly what's involved. But, it's not so much on a question of supremacy as a question of simple law. Alaska can pass laws about drugs that make certain drugs illegal that Washington does not make illegal and, therefore, can't be prosecuted in Federal court, but could be in Alaska. Likewise, the Federal Government has passed some laws regarding marijuana that I'm not able to remove from the books. The Congress—you—have passed them. They're on the books. And I just feel like that our priorities—look, I'll be frank—our priorities are fentanyl, heroin, methamphetamine, cocaine. People are dying by massive amounts as a result of those drugs. We have very few, almost zero—virtually zero small marijuana cases. But, if they're a big dealer and illegally acting and violating Federal law, we—our Federal agents may work that case. I don't feel like I'm able to give a pass, some protection, some sanctuary for it. That's maybe the only difference we have at this point on how——

Senator MURKOWSKI. And I——

Attorney General SESSIONS [continuing]. It will play out.

Senator MURKOWSKI [continuing]. I do understand that. Again, I recognize that, if there is a venue or an opportunity for us to advance legislation on this, that there is that open door for conversation about, truly, the inherent conflicts that we're seeing coming out of the States and working with—on the Federal level.

Let me ask you another——

Attorney General SESSIONS. I would be glad to do that.

TRIBAL JUSTICE PROGRAMS

Senator MURKOWSKI [continuing]. Another issue that I raised with you earlier. And this is regarding support for Tribal justice programs. In the fiscal year 2018 budget, we were able to include a funding stream for victims of violent—Victims of Crime Act funds for Tribes. It's a set-aside—it's a 5 percent set-aside. It's about $130 million to help for victims on Tribal lands. We had completed a study in Alaska—well, actually, it was a broader study, it was a 2016 study from the National Institute of Justice. More than four out of five Alaskan Native and American Indian women report having experienced violence in their lifetime. More than half report having experienced sexual violence in their lifetime. Nearly 40 percent have experienced violence in the past year, 14 percent who have experienced sexual violence in the last year. Our statistics when it comes to Alaskan Native women and American Indian women are horrible when it comes to domestic violence, when it comes to the sexual assault. And so, I think that we are making a small step forward with this small set-aside—small set-aside—and first time ever to see anything going towards those on Tribal lands and in Alaska, where we have different issues, in the sense of not having Indian country, but a recognition that we must address this. So, 5 percent, I would like to see that increased. I would hope that we'd be able to work with the Department of Justice to address this issue, because we have not made a difference in reducing these horrible statistics.

Attorney General SESSIONS. Senator Murkowski, thank you, actually, for raising that. I'm hearing—I heard that before I was confirmed. You and I talked about it. I've traveled the country, meeting with U.S. Attorneys. I hear it a lot in their districts. Just came back from Albuquerque, and we talked about the Navajo Tribal lands and the problems that they have.

This budget, the President's budget, actually is frugal compared to—it's a frugal budget, but it has more for Tribal issues than the—even your 2018 budget. And it does it the way you suggested, through set-asides. A 7 percent set-aside is recommended for the Office of Justice Programs. All those programs, 7 percent would be set aside for Tribal individuals and 5 percent of the Crime Victims Fund. I believe Congress has not yet got to those numbers.

But, I do agree with you that it is a very difficult situation, and Alaska has a particularly unusual situation without having specific Tribal lands that receive specific funds from the Government. So, I will be glad to continue to work with you on it.

Senator MURKOWSKI. Good. And that's why so many of these funds, whether it's the Byrne grants, the VAWA funding, the DNA backlog, the Victim of Crime Act, the Crimes Against Children, all of these grant fund opportunities are so significant for us. So——

Attorney General SESSIONS. I did——

Senator MURKOWSKI [continuing]. Put that on your list.

Attorney General SESSIONS. Let me—okay. I would note that, just yesterday, I had a meeting with your United States Attorney in—here in DC—Bryan Schroder. He's on our—my 15-member Attorney Generals Advisory Committee. And he and U.S. Attorney from Oklahoma—northern Oklahoma—chair the Subcommittee on

Indian Affairs. And they—we both talked about this specifically—they would like to see us do some things better than we have in the past. They're providing strong leadership. And I know he'll be glad to share his thoughts with you or your staff.

Senator MURKOWSKI. Good. They're good guys. Thank you.

Thank you, Mr. Chairman.

Senator MORAN. Thank you, Senator.

Senator from California, Senator Feinstein.

Senator FEINSTEIN. Thank you very much, Mr. Chairman.

And welcome back, Attorney General. I'm sure you've missed us terribly.

[Laughter.]

DEFERRED ACTION FOR CHILDHOOD ARRIVALS (DACA)

Senator FEINSTEIN. I want to follow up on something that Senator Collins said. Senator Collins and Senator Manchin essentially convened a large group of bipartisan Senators on the DACA situation to try to see if some proposal could be put together. Virtually everything went down on the floor. And, in conversations since, what I've learned is that, in negotiations with the President, Senator Schumer tried to consummate a deal, where the President essentially got what he wanted with respect to border security if the DACA bill went through. Well, that was clearly not successful. You referred to certain loopholes, in your conversation with Senator Collins. I'm wondering if you could be more precise, because we are really very interested and involved in trying to find a solution.

Attorney General SESSIONS. Well, thank you. Your support for this would be very important. I think there's a bipartisan opportunity to join together and say, once and for all, we believe we should have a lawful system of immigration, and we're going to support things that actually work to help achieve that. I've not so jokingly said, for years, Congress will pass anything on immigration, as long as it doesn't work. If it works, somehow it never passes. But, we've got the Flores consent decree that's been in place for 20 years, that's causing monumental problems, particularly in California. We have the situation where you say, as the critics say, magic words and you're in, backlog case systems, people get released on bail, they don't show up for their hearings, and all of that. There's a whole host of problems like that, that I think most of——

Senator FEINSTEIN. DACA——

Attorney General SESSIONS [continuing]. Members of Congress of both parties would probably work to fix.

Senator FEINSTEIN. Well, is it the number? In the number—in the bill that Senator Graham and Senator Durbin were cosponsors of, I think the total number was 3.3 million. Was that the problem——

Attorney General SESSIONS. That is a big——

Senator FEINSTEIN. I don't——

Attorney General SESSIONS [continuing]. Number. Yes, that's——

Senator FEINSTEIN [continuing]. Believe the problem——

Attorney General SESSIONS [continuing]. A problem.

Senator FEINSTEIN [continuing]. Was in the bill, because it was discussed and discussed and discussed, and then it all came a crop-

per in the votes. So, it would be very helpful if you could be helpful to us and just identify some specifics that we could look at and try to put something together.

Attorney General SESSIONS. Well, I think that's——

Senator FEINSTEIN. Would you do that?

Attorney General SESSIONS [continuing]. That's certainly a fair request, yes——

Senator FEINSTEIN. Okay.

Attorney General SESSIONS [continuing]. I will.

Senator FEINSTEIN. Okay.

BUMP STOCKS

Let me go on, then, to bump stocks. DOJ recently started the rulemaking process to ban bump stocks under the National Firearms Act. And I have it in my assault weapons bill, which has some 29–30 cosponsors right now. But, ATF has said, for years, it can't ban bump stocks because the National Firearms Act doesn't allow it. ATF repeated this position in April of 2017, and has repeatedly stated in public that ATF cannot ban bump stocks under current law. That's why we have proposed legislation to do so. How long do you expect this rulemaking to take? And if you find out what we found out, will you support a legal ban?

Attorney General SESSIONS. I would need to review the legislation, but we have done intensive legal research. It always seemed to me that a bump stock converts a gun to, effectively, a fully automatic weapon. How can this be a close call? However, I acknowledge that the lawyers at ATF did a lot research. It's a lot of complicated—it's a complicated matter. And they concluded it was not. And we've continued to review that. We believe we've changed that view in the Department of Justice. And we believe the regulation could be effective to solve the problem. And it's up for comment now, made public. Hopefully, that would move forward and would solve the problem.

Senator FEINSTEIN. By when do you expect the rulemaking will conclude?

Attorney General SESSIONS. I think it won't be much longer. I'm not sure, but I think in just a few months—90 days, I believe, is what's left on the——

Senator FEINSTEIN. Okay.

Attorney General SESSIONS [continuing]. Time.

Senator FEINSTEIN. Thank you.

FBI NATIONAL INSTANT CRIMINAL BACKGROUND CHECK SYSTEM (NICS) DATABASE

The Justice Department announced a policy change, 1 month ago, indicating that it would remove records of certain fugitives from the FBI's NICS gun background check databases. Now, previously, all fugitives were recorded in the NICS database so they couldn't buy guns. Now only fugitives who cross State lines are included in the database. I understand that local law enforcement organizations have strongly opposed the change. It's puzzling to me as to why the Department would do that, why you would want armed fugitives.

Attorney General SESSIONS. Well, the issue I'm most familiar with is the one involving whether or not a warrant for your arrest, and a person is, therefore, a fugitive if they're running from arrest, but haven't been convicted. The statute is pretty clear, you have to be convicted before you can have a gun—your Second Amendment right to possess a——

Senator FEINSTEIN. Even in the——

Attorney General SESSIONS [continuing]. Firearm.

Senator FEINSTEIN [continuing]. Case that the fugitive had committed a major felony?

Attorney General SESSIONS. Apparently, that is the law. In other words, you lose your right if you've——

Senator FEINSTEIN. These are——

Attorney General SESSIONS [continuing]. Been convicted——

Senator FEINSTEIN [continuing]. Fugitives who——

Attorney General SESSIONS [continuing]. Of——

Senator FEINSTEIN [continuing]. Crossed State lines. I don't understand what the Department sees is the need to do this.

Attorney General SESSIONS. Well, I am—I would just—

Senator FEINSTEIN. Why——

Attorney General SESSIONS [continuing]. Say I will review the State——

Senator FEINSTEIN [continuing]. Has me worried.

Attorney General SESSIONS [continuing]. Line question. I should know—be able to answer that, but I'm not able to. But, I do know the warrant problem is a product of statutory language.

Senator FEINSTEIN. Okay. I'm over my time.

Thank you, Mr. Chairman.

Senator MORAN. Thank you, Senator Feinstein.

Senator from Arkansas.

Senator BOOZMAN. Thank you, Mr. Chairman.

Senator MORAN. I—no, it's—I'm correct.

Senator BOOZMAN. Thank you, Mr. Chairman.

And thank you, Attorney General Sessions, for being here. And we do appreciate your hard work and the great job that you're doing.

Attorney General SESSIONS. Thank you.

BYRNE JAG GRANTS

Senator BOOZMAN. I'd like to talk a little bit about the Byrne JAG, also, in the sense that in Arkansas we are doing a good job of helping you in your efforts regarding following the law, you know, being helpful. As I go around the State, though, and I talk to my county sheriffs, I talk to my local law enforcement and individuals regarding the importance of this, this is not a whole lot of money, but it really is the difference in being able to stand up the Drug Task Force forces that they have. You know, these are small departments. I'm out and about as much as anybody, as were you when you were a Senator representing your folks. But, when you talk to the people that are on the ground, again, not having this funding really is making a big difference in a very negative way. Can you talk about, for those States, for those individuals that are doing a good job, when it's going to get released?

Attorney General SESSIONS. Senator Boozman, it's just maddening to us that people who totally support our ICE officers and allow them to do the minimal things they ask of local law enforcement can't get this money. So, what happened was, a suit was filed in Chicago that said that they may or may not be in violation of our grant conditions. And they not only wanted to block us from denying Chicago, they denied the whole—the judge issued a nationwide injunction. And Chicago's law and circumstances are unique. All these other people who comply with the Department of Justice, all the other people that have other and different laws and backgrounds, are enjoined by the same single Federal judge, one out of 600. Now the whole process is stopped. And law enforcement has been impacted. And we are determined to try to deal with this issue in an appropriate way.

It's painful for me not to see the money go out, particularly to the people who want to help us and work with us every day. But, they've been pretty supportive and understanding, I've got to say, although I know it's difficult for them. So, I hear you. We're working on it. It's a high priority of mine.

Senator BOOZMAN. Okay. We appreciate that. And it is important, an important issue.

DRUG COURTS

Another thing that I'd like to talk to you a little bit about is the—when we look at the fiscal year 2019 budget request, it will reduce the Drug Court funding by more than 40 percent, reduce Veterans Treatment Courts by 70 percent. When you look at the recidivism rate as a result of being in Drug Court, it's dramatically lower than those people being incarcerated. Also, when you put somebody in jail—they're required to work when they're in Drug Court, but when you put somebody in jail, not only are you—you're—the recidivism rate and all that, but also the family is going to wind up probably on some sort of public welfare assistance because you've lost an income earner. And so, I'd really appreciate it if you'd look at that and—just kind of review that, look at the statistics. I think those programs—if there's an answer, instead of reducing those programs, I think they should be increased dramatically.

Attorney General SESSIONS. Well, Congress works its will. And the—we have a tight budget, and we—but, I do agree with you, Senator Boozman. I helped initiate the——

Senator BOOZMAN. Right.

Attorney General SESSIONS [continuing]. Establishment of a Drug Court in Mobile, Alabama, in the early 1980s——

Senator BOOZMAN. Right.

Attorney General SESSIONS [continuing]. One of the first in the country. And it's still in existence. And I think it's a positive thing, in general. I've kept up with it over the years. It's—it deals with the kind of State cases that are often—are smaller offenders, addicted offenders, single mothers, single fathers, whatever, that it's just a difficult time. And some of them can work their way through that Drug Court and stay with their families and save the cost of incarceration.

Senator BOOZMAN. You're exactly right. And, again, have to work, have to stay clean, with a drug test, where the judge has the hammer, you know, to actually——

Attorney General SESSIONS. Right.

Senator BOOZMAN [continuing]. Put them in prison. So——

Attorney General SESSIONS. If they misbehave, the judge——

Senator BOOZMAN. Exactly.

Attorney General SESSIONS [continuing]. They come before the judge repeatedly, and he addresses them directly. It has a real impact.

Senator BOOZMAN. Well, thank you very much.

Thank you, Mr. Chairman——

Attorney General SESSIONS. Thank you.

Senator BOOZMAN [continuing]. Madam Chair.

Senator SHAHEEN [presiding]. Thank you, Senator Boozman.

Senator Manchin. Yes, Senator Manchin.

Senator MANCHIN. Thank you, Madam Chairman.

Thank you, Mr. Sessions. Good to have you here.

Let me say, first of all, I want to thank you. We had a major drug raid, and you all were very much involved in that and made it happen, and I personally want to thank you for the State of West Virginia. It was a major drug raid between Detroit and Huntington, West Virginia. You all led it, you were involved in it. We had all agencies working together. It made a big, big impression. It made a big help on us. So, thank you for that, sir.

Attorney General SESSIONS. Thank you.

BOP AUGMENTATION

Senator MANCHIN. Also, I want to say that the Bureau of Prisons routinely uses a process known as augmentation to assign custodial duties to noncorrectional staff—teachers, plumbers, fill gaps in staffing, and all that. At the Hazelton Federal Corrections Center—Hazelton Federal Corrections Center in West Virginia—there have been over 60 major security incidents since the beginning of this year, including one inmate—inmate's death earlier this month. Now, I shot—fought to ensure that the recently passed omnibus bill included language directing the Bureau of—to curtail its over-reliance on augmentation, people who then have these types of experiences, and instead hire additional full-time correctional staff before continuing to augment existing staff. So, despite all this, the Director of Bureau of Prisons, Mr. Mark Inch, sent a memo out last week stating that, "Augmentation is an important mechanism used by our agency to operate safely and efficiently." So, only thing I can ask, Mr. Sessions, is, What do we have to do to get Mr. Inch's attention in that and ask for some help?

Attorney General SESSIONS. Well, the augmentation has gone on for a long time, Senator Manchin.

Senator MANCHIN. Yes.

Attorney General SESSIONS. And it's established policy. And everybody that participates in augmentation is supposed to, and I believe is, also trained, and they—in the incarceration management, number one.

Senator MANCHIN. This is——

Attorney General SESSIONS. So, I think——

Senator MANCHIN. This is a tough one.
Attorney General SESSIONS [continuing]. That this really——
Senator MANCHIN. This is a tough prison.
Attorney General SESSIONS. What?
Senator MANCHIN. This is a tough prison, here.
Attorney General SESSIONS. Well, facts could be different——
Senator MANCHIN. Sure.
Attorney General SESSIONS [continuing]. In different situations, but the augmentation program, to eliminate that would be highly expensive. I mean, you would have to hire entirely new guard for one person to spend 2 hours through the lunchroom helping——
Senator MANCHIN. I gotcha.
Attorney General SESSIONS [continuing]. Keep an eye on things.
Senator MANCHIN. We're just understaffed. I think that's it, in a nutshell, in that prison, with the amount of population base we have. If you could just look into that, sir, and if your staff could give us the attention we need, then we'd be greatly appreciative, because they're having serious problems there. And the staff morale is low. We're having a hard time keeping people now because of the danger. That's all we're asking for.
Attorney General SESSIONS. All right.
Senator MANCHIN. And I know you will do that, and I appreciate it.

FBI AGENT/POLICE PAY AND BENEFITS DISPARITIES

I have another one, too, which is important. I'm proud to have FBI presence in Clarksburg, West Virginia. As you know, the NICS unit is there. This facility performs a wide variety of functions, such as housing the Criminal Justice Information System, where the FBI's National Instant Criminal Background Check System is located, working in conjunction with WVU, implementing the cutting-edge study of biometrics in the field of criminal justice, being a resource for law enforcement, cybersecurity, and combating cybercrime. In order to protect the important work conducted at these facilities, there are approximately 75 police officers assigned to the site in Clarksburg. Additionally, there are about 173 other officers serving at sites in Washington, DC, Quantico, Virginia, and New York City. Because of an inadvertent error committed while drafting the legislation intended to establish the FBI police force, these officers, these 70—they're not being—receiving the same pay and benefits that they are entitled to with what jobs they're doing. I think it's a snafu when all this was written.

I mentioned this to Director Wray yesterday, so he knows it and his staff has it, but I wanted to also put it on your radar screen, sir. So, I would just like to have the—you know, your help, if you will, on this, because it's just an unfairness in the system. We've been trying to correct—and this was done in 2002. We have the code, the section, everything else that—whoever you want us to work with on your staff, too, to check that out, I'd be happy to do.

Attorney General SESSIONS. Well, that's a reasonable request, and we'll follow up with Director Wray. And if we can be of assistance, we will.

OPIOID EPIDEMIC

Senator MANCHIN. The opioid addiction that we have—and we've talked about this before—trying to change the law back to where the DEA can do its job—you and I have talked about——

Attorney General SESSIONS. Right.

Senator MANCHIN. I think we've given—and you were telling me you need the language from us to do that. Or do you have the ability to change that?

Attorney General SESSIONS. I appreciate the conversations we've had on it. I thought we were—had reached an accord on the language. But, if not, I'll be glad to follow up and see if we can't get that done.

Senator MANCHIN. Yes. Okay.

Attorney General SESSIONS. I appreciate your interest and leadership on it.

Senator MANCHIN. Well, we're ground zero. West Virginia is number one. We had 909 deaths, out of a population of 1,800,000 people. So, we're just off the charts. And—but, your attention is going to be greatly appreciated, but it's helping immensely. This drug raid made a big difference. And we can do more.

Attorney General SESSIONS. U.S. Attorney Mike Stuart is——

Senator MANCHIN. Mike's——

Attorney General SESSIONS [continuing]. So excited. I got a letter from him, and it reminded me when I was young U.S. Attorney——

Senator MANCHIN. You got a——

Attorney General SESSIONS [continuing]. But he was on steroids, I told him, compared to me. He was so excited.

Senator MANCHIN. We've got a good guy there.

Attorney General SESSIONS. He is really fired up to do—make some changes there. And we're going to support him.

Senator MANCHIN. Yes, he's well liked. He's well liked, and he'll do a good job. We're really proud to have Mike.

Thank you, sir.

Attorney General SESSIONS. Thank you.

Senator MORAN [presiding]. Senator from South Carolina, Senator Graham.

Senator GRAHAM. Thank you, Mr. Chairman.

Mr. Attorney General, I think you're doing a very good job for the country, and many of us up here have your back, and I want you to know that.

Attorney General SESSIONS. Thank you.

BUDGET REDUCTION FOR FISCAL YEAR 2019

Senator GRAHAM. As to the budget, it's a 6-percent reduction over fiscal year 2018 levels. Do you think now is the time to reduce the Department of Justice's budget, given the threats we face?

Attorney General SESSIONS. Well, we submitted a frugal budget. It comes through the Office of Management and Budget, in trying to achieve a total number for the government.

Senator GRAHAM. Well, let me ask you——

Attorney General SESSIONS. I would just follow up to say it was submitted before the 2018——

Senator GRAHAM. Okay.

Attorney General SESSIONS [continuing]. Appropriations, and did, in fact, raise—spent—raise—helped us give us——
Senator GRAHAM. Yes.
Attorney General SESSIONS [continuing]. Some money extra.
Senator GRAHAM. So, the money you got extra, you think you can spend it wisely to make——
Attorney General SESSIONS. We're going to work very hard to do that.
Senator GRAHAM. Okay, thank you.
Attorney General SESSIONS. Absolutely.

THE WIRE ACT

Senator GRAHAM. All right. The Wire Act, I know you've recused yourself from reviewing the Wire Act. Is that correct?
Attorney General SESSIONS. That's correct.
Senator GRAHAM. I talked to Mr. Rosenstein about that, months ago. And Senator Feinstein—are very worried that this bizarre interpretation of the Wire Act by the Obama administration is going to lead to holy hell ungoverned spaces when it comes to Internet gambling. Could you please tell him to give me an answer. Or do I have to tell him?
Attorney General SESSIONS. Deputy Rosenstein?
Senator GRAHAM. Rosenstein, yes.
Attorney General SESSIONS. I will pass——
Senator GRAHAM. Okay.
Attorney General SESSIONS [continuing]. Along your——
Senator GRAHAM. Okay. Other than——
Attorney General SESSIONS [continuing]. Request.
Senator GRAHAM [continuing]. That one glitch, do you agree with me he's doing a good job?
Attorney General SESSIONS. He works every day to do the job that he is called upon to do that got dropped in his——
Senator GRAHAM. Do you have confidence in him?
Attorney General SESSIONS. I do have confidence in him.
Senator GRAHAM. I do, too. Thank you.

GUANTANAMO BAY

Guantanamo Bay (GITMO). The President issued an executive order saying he would use GITMO when appropriate. Do you agree with that?
Attorney General SESSIONS. Yes.
Senator GRAHAM. Do you think we're ever going to use it in my lifetime?
Attorney General SESSIONS. Nobody—well, you and I have spent a lot of time working on it together, since I've been Attorney General and before.
Senator GRAHAM. Right.
Attorney General SESSIONS. So—I don't know.
Senator GRAHAM. Well, I just would——
Attorney General SESSIONS. I'll just have to be honest with you.
Senator GRAHAM. You have been——
Attorney General SESSIONS. It could be, certainly, if——
Senator GRAHAM. Yes.

Attorney General SESSIONS [continuing]. We have a surge and——

Senator GRAHAM. Right.

Attorney General SESSIONS [continuing]. Arrest these——

Senator GRAHAM. Well, we've got 489 prisoners that we've captured from our operations around Raqqa. They're going to get out of jail. They're in a makeshift prison held by the Syrian Democratic Forces. It's not a nation-state, and these are really hardcore killers, some of them. Two of them are with the Beatles. You've heard of the Beatles, right? Not the rock group, but the beheaders.

Attorney General SESSIONS. I do know the Beatles.

Senator GRAHAM. Okay. Well, two of these people are in our custody. They're insisting on a fair process. I intend to give them one. But, they cut off the heads of an—of American citizens and our allies. And I know where you're at. I would appreciate it if you would push the administration to live up to the President's promise to use it wisely when it comes to GITMO. Would you please do that?

Attorney General SESSIONS. I will remain focused on that.

THE WAR ON TERROR

Senator GRAHAM. Okay. Now, when it comes to the war on terror, Raqqa may have been taken back, but we've got to hold it. From your point of view, the threat streams that you're aware of, are they growing regarding radical Islam threat toward the homeland?

Attorney General SESSIONS. We don't think there's been any significant reduction. I do believe General Mattis deserves credit for his tactics of crushing ISIS, and I think a lot fewer of them got out than perhaps they intended, which means there are fewer of them available to come to America to kill Americans. But, we'll—I think time will tell how many come out of that war zone and attack us.

Senator GRAHAM. Is this a priority——

Attorney General SESSIONS. There's definitely many that prefer to do that, and desire to do that.

Senator GRAHAM. Is this a priority of your Department, to make sure that we—we're up and running when it comes to these threats?

Attorney General SESSIONS. It is. The FBI may—almost a third of its budget is national security matters. I asked them, "Was that enough?" some time ago, and I was told the right answer.

Senator GRAHAM. So——

Attorney General SESSIONS. And the answer was, "Well, we've got enough, because we'll assign anybody doing anything to focus on terrorism if it's a threat to us. It's our number-one priority."

Senator GRAHAM. One of the tools they use to recruit out of area, out of theater, is the social media outlets, like Facebook and other social media devices. They use it actively to recruit. I know you're aware of a recent dustup with Cambridge Analytica, but a terrorist organization using social media to recruit terrorism in our own backyard, would you support Congress weighing in and trying to find some control over this?

Attorney General SESSIONS. Senator Graham, I think it's a growing, real problem. I—FBI has a great deal of insight into this program. We want to encourage them to be forthcoming about ideas

to deal with the future. But, you are correct, it needs more attention.

Senator GRAHAM. Congratulations on the CLOUD Act. It really helps our ally, Great Britain. And your office was terrific. Thank you.

Attorney General SESSIONS. And Senator Graham was the number-one advocate for that, which—it was one of our top priorities in Department of Justice, and will—and, without your help, it would not have passed.

Senator MORAN. Senator Coons.

Senator COONS. Thank you, Chairman Moran. And welcome to your new position here at CJS. I look forward to working with you and with Ranking Member Shaheen.

And, Mr. Attorney General, welcome. I enjoyed working with Senator Graham, and I'm glad we made progress on the CLOUD Act. I do think it was an important step forward.

I have three questions I'd like to ask, if I might. I think I'm the last man standing, so we'll work through them, if we could. And then, I think we're at the end.

Senator MORAN. As long as they occur within 5 minutes——

Senator COONS. I will do my——

Senator MORAN [continuing]. You're recognized.

[Laughter.]

Senator COONS [continuing]. Level best.

NICS DENIAL NOTIFICATION ACT

First, as you know, Attorney General, my home community of Wilmington has faced significant levels of gun violence, something the Department has worked with us on in the past. I've tried to find ways that we, in the Federal Government, can help local law enforcement confront this challenge. So, I'm working with Senator Toomey, of Pennsylvania. We have crafted and introduced a bill, the NICS Denial Notification Act, which recognizes that if someone who is a person prohibited—convicted felon, adjudicated mentally ill, convicted of domestic violence—goes into a gun shop, fills out their background check form, says, "Yes, I can buy a gun," and they're denied, that's information that would be helpful for local law enforcement to know. Would you agree that that's helpful for State and local law enforcement?

Attorney General SESSIONS. Yes, it could be.

Senator COONS. There were 120,000 NICS denials last year. The State of Pennsylvania, State of Virginia, they run it through the—the State police run it, so they know when there's a NICS denial, and they have prosecuted hundreds of people. My home State, and about 30 others, it's run independently of State law enforcement. All this bill would do is to require notification to State law enforcement when there is a denial of a NICS application. Do you think that would be a constructive step forward, in terms of empowering State and local law enforcement to take timely action, where a person prohibited is trying to get access to a weapon?

Attorney General SESSIONS. I would be pleased to review that. I'm aware that you are offering something of that nature, but I haven't studied it. I think it's got potential and would be pleased to do so. We also are directing our United States Attorneys to pros-

ecute more aggressively people who lie to get a gun. And some of those are caught on the—well, most of them are—NICS denials are, basically, people who have lied when they——

Senator COONS. That's right. The were lie-and-try——

Attorney General SESSIONS [continuing]. Seek it.

Senator COONS [continuing]. Offenses.

Attorney General SESSIONS. We call it the lie-and-try——

Senator COONS. Yes.

Attorney General SESSIONS [continuing]. That's correct.

Senator COONS. Well, I look forward to working with you on that.

HIGH INTENSITY DRUG TRAFFICKING AREA (HIDTA)

One other thing I wanted to ask is about HIDTA, the High-Intensity Drug Trafficking Areas Program under ONDCP. I worked hard to make sure New Castle County, Delaware, which is our northernmost county, was included in the Philadelphia/Camden HIDTA area. And I'm concerned about changes you're proposing to the program that, as I understand it, would lead it to focus on enforcement activities, but not combating addiction. HIDTA and other ONDCP programs have balanced enforcement with community efforts to try and fight addiction. Why reinvent the wheel when ONDCP, in my view, has already been providing needed assistance to communities across the country?

Attorney General SESSIONS. This has been a matter discussed for many years. We've been asked to reorganize the Government to make it more effective. The HIDTA investigative teams that are funded through this grant program have been a part of the ONDCP, the Office of Drug Control Policy. It was set up as a policy entity, and a little bit like the National Security Council that says, "We're spending all this money. Let's make sure all these departments are doing it the right—in a coordinated way." So, we think that ONDCP needs to focus back on that, and that the actual management in the field of task forces that prosecute and investigate drug use is better coordinated with the DEA. But, the HIDTA officials, the people of the local communities that serve on the HIDTA boards would be retained. The grant money would simply be managed by DEA. And I think it would create a closer working relationship.

Senator COONS. I look forward to looking into that further. We may disagree on exactly how to manage it, but I agree with you, it's a longstanding debate.

MICHAEL COHEN INVESTIGATION

Let me close with just a few questions about the U.S. Attorneys Office in the Southern District and the investigation of Michael Cohen. If I understood correctly your exchange with Senator Leahy earlier—I just want to make sure I understand. If you discover any connection between this investigation into Mr. Cohen and the ongoing investigation into allegations of Russian interference or anything related to the 2016 election, would you recuse yourself?

Attorney General SESSIONS. Yes.

Senator COONS. Thank you. And have you discussed that investigation into Mr. Cohen with anyone outside of DOJ, including the President?

Attorney General SESSIONS. I don't think in any significant—well, I'll just say this. The communications I might have to anyone in the White House, I believe are the kind of communications that should not be revealed. I believe I have the right to—and responsibility to maintain confidence in those. So, I just am not able to go down that road.

Senator COONS. So, in exerting executive privilege there—asserting executive privilege there, I'll move forward.

A last question. Has the President or anyone in the administration discussed with you the possibility of President Trump pardoning Michael Cohen?

Attorney General SESSIONS. I am not able to reveal the contents of any communications I might have with the President of the United States or his top staff.

Senator COONS. Given the previous conversation you had with Senator Van Hollen, it's my hope that, if President Trump proceeded to pardon Michael Cohen, in violation of longstanding policy, and did not consult with the Pardon Attorney, did not consult with DOJ, that you would express strong objection to that and would consider resigning if that step were taken. Hopefully, it will not come to that.

Thank you for the chance to question you today, and thank you for your service, Mr. Attorney General.

Attorney General SESSIONS. Thank you, Senator Coons.

Senator MORAN. Mr. Attorney General, we're about to conclude our hearing. We're going to have a quick round. I was hoping that Senator Coons would leave before I indicated the potential of a second round, but—Senator Coons, anything you want to add to what you've questioned the Attorney General?

Senator COONS. Thank you very much for the opportunity. No, I have completed my questions.

Senator MORAN. Very good.

I'll recognize Senator Shaheen.

Senator SHAHEEN. Thank you, Mr. Chairman.

TRIALS FOR INTERNATIONAL TERRORISM SUSPECTS

I want to follow up on the issue that Senator Graham raised about Guantanamo. He specifically mentioned the Beatles. On March 5, I sent the Justice Department a letter based on discussions that we had with the families of the Americans who were killed, we think, by the Beatles, one of whom was a constituent of mine, James Foley, but also included Steven Sotloff and Kayla Mueller. One of the things that we heard very strongly from the families of those Americans murdered by those terrorists—executed, really—is that they wanted to see that the people who killed them were brought to justice. They didn't feel like putting them in Guantanamo, where no one would know and other terrorists would not be able to see that they were brought to justice and held accountable for their deeds, was an appropriate way to deal with them. So, I wonder if today you can tell me if you, as the Attorney General, and the Justice Department will advocate with this administration that those terrorists be brought to justice either in some international venue or in civilian courts in the United States.

Attorney General SESSIONS. Well, I believe I can say with certainty they will be brought to justice. There has been a discussion. Senator Graham, for example, believes—and he's studied this for years; he's actually, on his military duty, spent time at prisons in——

Senator SHAHEEN. Right.

Attorney General SESSIONS [continuing]. Afghanistan and places, so he's an expert—but, he thinks the normal and best procedure is for people to be brought to Guantanamo, where they're not—they're—as prisoners of war, that they can be interrogated as normal prisoners of war, they're not provided attorneys, and they're not set for trial and don't get discovery and—of the government. And then, if a decision is made to bring them to the United States for trial or tried by military commission in Guantanamo, that's the best approach. I have advocated that with him in—when I was in the Senate. So, that's my general view of it.

We have had success bringing—trying a lot of these cases in Federal court. Even though the rules of evidence are stricter, the discovery rules require the government to produce more evidence, sometimes could tend to reveal the—how they got caught and our techniques of catching them, and our intelligence that way.

So there's no dispute about these individuals being brought to trial. I have been disappointed, frankly, that the British—they were British citizens, they renounced their citizenship, or rejected, had it pulled, but that they are not willing to try the cases, but tend to want to tell us how to try them. So—and they have certain evidence——

So, it's a complex matter. We are spending a good deal of time on it. I believe you can say with confidence that we expect to have these individuals tried and held accountable for their horrific acts.

Senator SHAHEEN. Thank you. As you point out, we've been successful in Federal court when we've brought those terrorist cases. In fact, we've been more successful in civilian courts than in military tribunals. I would urge you and the administration to take into account the wishes of the families, who lost their loved ones because of those terrorists, and not provide another opportunity for terrorists to be able to use Guantanamo as a recruiting tool. I certainly hope you will do that.

SPECIAL COUNCIL AND FIRING AUTHORITY

I would like to change the subject now. There have been a number of questions here regarding your recusal from issues relating to the 2016 presidential campaign and the work of Special Counselor Mueller. I have a couple of general questions that I hope you can answer despite your recusal from questions regarding the Mueller investigation.

Outside of misconduct, dereliction of duty, incapacity, conflict of interest, or other good cause, the conditions outlined in 28 C.F.R. 600, can the Attorney General, or his designee, fire a Special Counsel?

Attorney General SESSIONS. Well, let me just say this. I expected somebody would press this, but I am recused from that matter, and this thing—one matter at stake, and I'm recused from that. So, I believe it is not appropriate for me to opine or give my thoughts

at this point, given the fact that I'm recused. So, I appreciate your inquiry, but I think it is not appropriate for me to comment.

Senator SHAHEEN. Will you also not comment on whether, in your legal view, the President can fire a Special Counsel appointed under the same regulation?

Attorney General SESSIONS. I feel the same way about that question.

Senator SHAHEEN. Okay.

Mr. Chairman, if I can just ask one more question. I know I'm over my time.

Senator MORAN. Please continue.

CENSUS CITIZENSHIP QUESTION

Senator SHAHEEN. I want to go back to the Census questions. There have been some questions about the citizenship question that is to be included in the next Census. Now, my understanding is that the last time this question was included in the Census was in 1950. And so, I have a question about why now the Justice Department feels like it needs to include that question. The answer that I've been given is that it's used in enforcing the Voting Rights Act. Since we haven't used it since 1950, why is it necessary now? Does the Justice Department plan on using the information from the question for immigration enforcement?

Attorney General SESSIONS. Well, we've submitted a written statement about that. The matter is under litigation today, and I am reluctant—and it's really—wouldn't be appropriate for me to discuss the merits and argue the pros and cons about it, if you'll forgive me on that. But, we have a written document to the Census Bureau, and they are—we are representing them in court.

Senator SHAHEEN. Thank you, Mr. Chairman.

Senator MORAN. Thank you, Senator Shaheen.

Senator from Louisiana, Senator Kennedy.

Senator KENNEDY. Thank you, Mr. Chairman.

General, I think you're doing a wonderful job. I wanted to tell you that first.

Attorney General SESSIONS. Thank you.

Senator KENNEDY. You're a better man than I am. I can tell you, I—you've shown a lot of patience. You know, first they want you to recuse yourself, and then they want you to answer questions about it.

IMMIGRATION ENFORCEMENT

You and I have talked about this before. You know, we are a nation of immigrants, which we're proud of. You know, I think we've let in more folks from other countries in our—into our country than any other nation. And it's—I'm flattered that people want to come here. I mean, when's the last time you read about somebody trying to sneak into China? You know, they want to come here. And that's great. But, we're a nation of laws, and we're not following our laws on immigration. Is there anything we can do about sanctuary cities, in terms of legislation, that would help you?

Attorney General SESSIONS. Absolutely. For example, there—I think we could authorize explicitly—I didn't—I thought it was already sufficiently authorized, but you'd explicitly authorize or pass

legislation that mandates a cooperative relationship with State and local areas. Also——

Senator KENNEDY. I would have thought that would be implicit.

Attorney General SESSIONS. I——

Senator KENNEDY. No?

Attorney General SESSIONS. But, you know, Senator Kennedy, there's nothing like the improvement we've seen in law enforcement. You have—in Louisiana, you've got cities, you've got parishes in cities, in all these—jurisdictions each have their borders and their jails, and we honor each other's holds and hold people til somebody can come over and pick them up because they've got charges in another jurisdiction or another State or to the Federal Government. And this is an ideological, open-borders, radical policy that a city or a county refuses—after they've apprehended somebody who's entered the country unlawfully, who's committed perhaps a major crime, they refuse to honor the ICE officers when they come to pick them up. And that means the ICE officers have to go out in the community, place themselves and maybe neighbors at risk to try to apprehend sometimes dangerous criminals. And I cannot agree to that. I cannot accept having our officers placed at that kind of risk. And it's important matters, not a little matter. And I think these cities need to reevaluate what they're saying. I don't think they know what they're saying. I don't think they understand the implications of their refusal to cooperate with brother and sister law officers like our ICE officers. We cooperate with them. And that's why we've been so—that's been a part of the 30-year decline in crime, is this partnership between Federal and State officers. This is the biggest breach of that relationship I've seen in my 40 years of law enforcement.

SPECIAL COUNSEL AND RULE OF LAW

Senator KENNEDY. Well, it just strikes me—I mean, we've talked a lot lately about the rule of law and the Mueller investigation, which I'm not going to ask you to comment on, because you did correctly recuse yourself. We talked a lot about the rule of law, but it doesn't seem to apply when we talk about immigration laws. I mean, there are parts of immigration law I don't agree with, but I'm going to follow it. Now, I'm going to try to help my colleagues in Federal, State, or local government to follow it until we change it, if we ever change it. And I just don't get it. I'm sorry, I don't. I mean, I understand the politics of it. But, when you have the mayor of a city pick up the phone and, you know, tip off some folks who are in violation of Federal law, that they may be arrested, you know, the Federal agents are coming in, I don't understand a world like that. I don't.

Attorney General SESSIONS. Well, if a person can cross the border on Monday and end up in San Francisco on Wednesday, hauling dope and gets arrested with cocaine or heroin, why would the city not want ICE, after they've served their time, to take them out of the country like the law contemplates? I find, like you, that's amazing.

Senator KENNEDY. We're——

Attorney General SESSIONS. I also want to thank you——

Senator KENNEDY [continuing]. Spending billions and billions—I think I saw a figure of 36 billion—I'm sure that—that may be inaccurate; I'm—my memory's bad, but—that we spend on border enforcement. But, if you get through—and, I'm sorry, I'm not saying if you can make it to New Orleans, you're home free. And I know our mayor disagrees with us on that, but it's an attitude.

But, anyway, if there's—I'll call you separately. I want to stay within my time. But, thank you for your service.

Attorney General SESSIONS. Thank you. And thank you for being alert to this issue and helping us, and raising it.

Senator MORAN. General Sessions, I think we're about to conclude. Let me ask just a couple of followup questions, if—that I have.

IMMIGRATION JUDGES

The Department has requested funding for 75 new immigration judges and support staff to help alleviate the immigration court system backlog. As you would know, this subcommittee provided funding for 100 additional immigration judges in the fiscal year 2018 omnibus. Can you explain how these additions will enable the court to decrease that backlog? And also, speak to the expedited hearing process that the Department has developed.

Attorney General SESSIONS. We've had a real problem for a number of years. In 2014, we only had 284 judges. With this funding, we believe we'll hit 559. That still may not be the optimum number, but it is a monumental improvement. We simply have more and more individuals who are making facial claims for asylum or other relief that justifies hearings. And it just—it's placing more and more stress on it. We have to be able to have prompt hearings, give people fair adjudication. And really, they need to be held in custody until the hearing is over, because, when you release them from custody because you can't bring them to speedy trial that they're entitled to, you can be ordered by the courts to release them, and they aren't coming back for trial. It's a loophole of monumental proportions, and there are a number of them. But, that's one of the biggest. And the judge—more judges will—I can't tell you how appreciative we are to the Congress for doing that. It also helps the legitimate immigrant claimant to get his—his or her case heard promptly.

EXECUTIVE OFFICE FOR IMMIGRATION REVIEW CASE MANAGEMENT SYSTEM

Senator MORAN. Well, General, I have a lot to learn in this new capacity. One of the surprises was to learn that the Executive Office of Immigration Review utilizes a management system that's based on paper. And your request includes $25 million to develop an electronic case management system. Can you tell us about how this will work and what a difference it will make?

Attorney General SESSIONS. We are looking to get more productivity and more legitimate and a better decisionmaking process from our judges. And we think the $25 million will pay for itself many times over. And we would appreciate that reform. And I believe it will help the system considerably.

Senator MORAN. Is this a onetime request, or there'll be requests for additional funding for this purpose in the future?

Attorney General SESSIONS. I think the initial cost will be the most significant. Whether we'll have the annual cost in the budget line item or not, I don't know. Probably so.

Senator MORAN. Are you aware of other places within your Department in which you're still operating off of a paper-based system?

Attorney General SESSIONS. I think the—we're working to improve the ATF process by which firearms and their serial numbers are noted. That's not sufficiently computerized, either. And it slows that down and costs money, we think, in the long run. So, we'd like to be able to get a much quicker turnaround on that. And we are planning to improve that system, also.

[The information follows:]

At the hearing on April 25, 2018, Chairman Moran asked: "Are you aware of other places within your Department in which you're still operating off—off of a paper-based system?" I responded: "I think the—we're working to improve the ATF process by which firearms and their serial numbers are noted. That's not sufficiently computerized either. And it slows down, and costs money, we think, in the long run. So we'd like to be able to get a much quicker turnaround on that. And we—we're planning to improve that system also." I believe this response requires further clarification as to the ATF process to which I was referring, and as to the steps the Department is taking to improve the efficiency of that process. Consequently, I would like to supplement my testimony with the following information:

The paper-based ATF process that the Department is working to make more efficient is the crime gun tracing process. ATF is the only U.S. law enforcement agency with the authority to trace firearms; it fulfils this duty through its National Tracing Center in Martinsburg, West Virginia. The NTC receives an average of 20 million paper records per year from Federal Firearms Licensees. These records consist primarily of FFL Out of Business Records (OBR), OBR records are critical to the firearms tracing process, and ATF images these records as a "picture", which is not searchable using automated technology. As a result, when a trace is conducted, ATF manually searches these records to look for the relevant serial number. The process of manually searching images for firearm serial numbers is obviously inefficient, and can result in incomplete traces due to manual error.

To improve the efficiency and accuracy during a crime gun trace, the Department is exploring ways to use new technologies to "tag" the serial number field in the image of those records, so that automated (computerized) means may be used to assist solely in the review of the serial number field of the record image. If we are able to develop this technology, significant cost savings would be realized, human error would be reduced, and trace results on crime guns would be more quickly provided to law enforcement.

Consistent with long-standing appropriations restrictions on consolidation or centralization of FFL records, the use of "tag" technology would be strictly limited to the serial number field of an image, and would not allow for the automated or computerized search of record fields containing firearm owner information. The Department does not intend to seek any change to the current appropriations restrictions as they apply to consolidation or centralization of records used in the firearm tracing process.

DEPARTMENT OF JUSTICE FISCAL YEAR 2018 SPEND PLAN

Senator MORAN. Let me ask, finally, about a spend plan. I look forward to receiving the Department's spend plan that's required by Section 532 of the CJS bill. As you know, several programs within the Department, such as veteran courts and Tribal assistant grants programs, received a significant increase. We talked a bit about that in the conversation that you had with one of my colleagues. They received a $14 million increase and $35 million in-

crease, respectively. As we also indicated, there's a—Fix NICS and STOP Act were passed in the omnibus bill, and—which I hope will be outlined in your spend plan how you intend to spend and implement those laws. And additionally, the Appropriations Committee included 3.3 billion to fight against opioid and prescription drug abuse crisis. Of this amount, 299.5 million was specifically included for the Department to fund anti-opioid grant programs. Can you speak to the type of comprehensive planning and initiatives the Department has undertaken to ensure those—these investments will have a maximum benefit?

Attorney General SESSIONS. I can. We're excited about that. I will share to you, Chairman and Ranking Member, we are determined to use that money quickly. We don't need New Hampshire waiting—or without having this deaths reduced. And we've got a series of ideas with DEA how to improve it, such as, we can extend people from 57 to 60, age 60. If we just go through the normal hiring process, we may be 2 or 3 years before we get to the numbers that we are authorized to get to. So, we could do that. We can take—even people who have already retired can work 20 years—20 hours a week. We're thinking about contracting with State and local police departments to—with people who have retired from them—experienced narcotics officers, many of them highly trained and very experienced—we could contract with them. And the DEA has, at my request and meeting with Ron Patterson and—Rob Patterson, he's on top of it. Well, we're going to have 400 added to task forces that we'll be able to fund that.

So, I guess what I—we, by—May 7, I believe is the day, we are—intend to have you a plan. Deputy Rosenstein and I have talked about it. Lee Loftus, our JMD leader, is behind me and helping me. He's been at this for many years. We're determined to try to meet that goal and have plans that we can use the money you've given us, and not 3 years from now, but now, because we face a crisis.

Senator MORAN. General, thank you. I had expected that—perhaps a more pro forma response to my question. And I'm pleased to see that you're moving with alacrity. That's a—an encouraging development. Let us know how we can be of help. We want to see the results when we authorize the spending.

Attorney General SESSIONS. Thank you.

OPIOID EPIDEMIC

Senator MORAN. I think—oh, let me ask just this final question about that. On this opioid battle, how well can you assure me of the cooperation and coordination between the Department of Justice and other Federal agencies in this battle?

Attorney General SESSIONS. Well, the President reached a bipartisan solution, I understand, to spend 6 billion additional dollars on the opioid crisis. That is a sizable increase, no doubt about it. We are getting only a small part of it. I don't know exactly what percentage, but it's certainly not the major. I expect that the prevention program, which I totally support, will be funded. But, it doesn't need an unlimited amount of money. You can run a very good prevention program for a reasonable amount of money. And you've got treatment, which is very expensive. And I'm sure that will get more money. There'll be some research—and I'm talking

about FDA, the Department of Homeland Security, the Department of Health and Human Services, VA—all of them have roles to play, and others, in the drug matters. And I would say you're entitled to keep an eye on all of us, and probably need to, because when you run a massive department, and you get some more money for a certain project, and the Secretary's got a million challenges to deal with, and sometimes things don't get done with the alacrity we'd like to see.

Senator MORAN. We have a funding responsibility, as a Congress. We have an oversight of equal value, in my view. And we need do both better.

General, thank you very much. I appreciate your testimony. It's been a long afternoon, I'm sure, for you, but I appreciate the responses that you've given.

I always ask a—when I chair a hearing, the witnesses if they have anything they'd like to add for the record, something they want to correct, something they want to add, a question that they didn't feel like they were—that they'd been asked, that they'd like to answer. You may feel like you've been asked everything.

Attorney General SESSIONS. Well, I don't have much to add, except I would appreciate it, if I have misspoken in any way, I'll try to correct that. And I thank you, because really the 2018 appropriations was beneficial, and it provided us additional resources, and we are going to do our best to use them as you would like us to.

Senator MORAN. General, thank you very much.

ADDITIONAL COMMITTEE QUESTIONS

If there are no further questions this afternoon—the Senators may submit additional questions to the subcommittee's official for the—for the subcommittee's official hearing record. We request the Department of Justice respond within 30 days.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED TO HON. JEFF SESSIONS

QUESTIONS SUBMITTED BY SENATOR RICHARD C. SHELBY

MADOFF VICTIM FUND

Question 1a. Attorney General Sessions, last year I asked Deputy Attorney General Rod Rosenstein about the delay in issuing and the methodology used to determine distribution amounts from the Madoff Victims Fund. I also followed up with a letter on this matter on July 20, 2017. The Fund was created by the Department in 2012 to recompense victims of the Madoff Ponzi scheme. Despite recovering approximately $4 billion, up to this point only roughly $1.3 billion has been distributed to victims. The delay in distribution is concerning, and even more troubling in light of the fees paid to the Special Master, who is tasked with administering payments to victims.

Please explain, in detail, the process for approving; disapproving; reconsidering disapproved claims; and the payment of approved claims from the Madoff Victims Fund.

Answer. In order to return seized funds to victims of crime, the Department of Justice (Department) follows the Petition for Remission process set forth at 28 C.F.R. Part 9. Pursuant to those regulations, the Department, the Criminal Division, the Money Laundering and Asset Recovery Section (MLARS) and the United States Attorney's Office for the Southern District of New York (SDNY) selected Richard C. Breeden Fund Services, LLC to serve as Special Master to administer

the Madoff remission process. The District Court for the Southern District of New York granted the government's motion to forego restitution in favor of remission, agreeing that calculation of restitution would be impracticable and that the government's appointment of a special master to review individual victim claims would be more efficient and cost-effective.

MLARS and SDNY worked with the Special Master to develop the Madoff Victims Fund (MVF) and a distribution plan. Claim forms and a website were developed and published in 2013, and an April 2014 deadline for filing petitions with MVF was set. Since that time, the Special Master and Department personnel have been hard at work evaluating more than 65,400 petitions claiming approximately $78 billion in losses on Madoff-related investments. Petitions came from individuals and entities in 137 countries. As part of that process, the Special Master and his team have reviewed more than 403,000 individual Madoff transactions in 13 currencies, and evaluated approximately 4.5 million pages of back-up documentation. As part of that review, the Special Master identified almost 31,000 petitions (for losses totaling approximately $27 billion) that were incomplete—meaning that nearly half of the petitioners were notified of the deficiencies and given an opportunity to address the deficiency and file an eligible claim. While this took more time, it ensured the process was available to more eligible victims.

The extensive review process is necessary to confirm which petitions are eligible and that the amount claimed is accurate. Because the total amount available to compensate victims is only about $4 billion—and petitioners claimed $78 billion in losses—ineligible or overstated petitions pose a serious risk of diluting the potential recoveries of eligible victims. Similarly, if the Department had begun making payments before potentially eligible victims had been given an opportunity to address deficiencies, it would have risked running out of funds before paying some eligible victims.

The Department has now largely completed its review, and has issued rulings on approximately 62,000 petitions, approving over 39,000. To date, MLARS has approved transfer of over $1.3 billion from the U.S. Marshals Service for distribution to approved victims with an eligible loss. It is important to note that sufficient reserves must be withheld from distribution to account for any pending appeals, collateral recovery adjustments, and claims that remain under review. Additional information regarding the ongoing MVF remission review can be found at www.madoffvictimfund.com.

Question 1b. Please provide the total amounts recovered by the Department, paid to the victims, and paid to the Special Master. If payments to the Special Master are not distributed solely from the Fund, please describe the source of these payments and provide the total amount of fees paid to date.

Answer. The Department has recovered approximately $4 billion dollars through various civil and criminal forfeiture actions related to the Madoff fraud scheme. Over $1.31 billion has been distributed to victims, and the Department intends to distribute billions more. The special master has been paid $51.4 million from the forfeited funds—representing under 4 percent of the total paid to victims to date.

Question 1c. What processes and mechanisms does the Department have in place to oversee the distributions to the victims?

Answer. The Department is well-versed in implementing the remission process and rendering decisions under the remission regulations. Career attorneys at MLARS review hundreds of individual victim remission petitions each year and manage multiple claims administration contracts that cover tens of thousands of additional petitions.

When the Department hires a claims administrator, it also imposes additional oversight. MLARS coordinates with the administrator to ensure the distribution plan comports with the regulations, and any documents or information provided by the administrator to petitioners are approved by MLARS. No decisions are conveyed to a petitioner until MLARS issues a decision on the petition. Ultimate responsibility for the remission decisions rests with the Department, not the administrator.

MLARS attorneys and financial personnel conduct site visits at both the contractor's offices and the bank selected to make payments. In the Madoff matter, MLARS staff conducted site visits at the Special Master's office and the bank at various stages throughout the remission process. MLARS also conducts audits at various stages of the remission process to review the recommendations and cleared checks.

Question 1d. What processes and mechanisms does the Department have in place to oversee and assess the reasonableness of the fees paid to the Special Master?

Answer. In accordance with the Federal Acquisition Regulation (FAR), a warranted Department of Justice Contracting Officer makes the determination that the

rates associated with the Special Master contract are fair and reasonable prior to any contract action. As part of each determination, the Contracting Officer is responsible for conducting price analysis that clearly demonstrates that the proposed price is reasonable in comparison with current or recent prices for the same or similar services.

Question 1e. How has the Department factored in potential future distributions to victims that will based on settlements distributed from the SIPA Trustee?

Answer. The Department and the Special Master have coordinated with the SIPA Trustee from the onset of the remission process. Data regarding the bankruptcy claims and subsequent payments has been shared with the Special Master on multiple occasions to ensure that no petitioner receives a payment from MVF funds if his total recovery from any source exceeds the MVF approved pro rata amount—which is currently 40 percent. In addition, the Department is holding funds in reserve for approved petitioners who are awaiting potential future distributions from the SIPA Trustee, intermediary funds, or other pending litigation. If future SIPA Trustee distributions occur, the petitioners will receive a payment from MVF only to the extent necessary to provide recovery up to the approved pro rata amount. MVF also requires petitioners to provide collateral recovery updates prior to each distribution of MVF funds.

Question 1f. How are the Department and the SIPA Trustee communicating to avoid double costs or payments? Please describe in detail the processes and mechanisms in place to ensure this line of communication is open and adequately used.

Answer. The remission petitioners and the bankruptcy claimants do not, for the most part, overlap. MVF has already approved over 39,000 petitions, while only approximately 2,600 bankruptcy claims have been approved. The legal standards for remission and SIPC recoveries are not the same and eligibility for filing differs. To the extent there is overlap, the Special Master has reviewed data from the SIPA Trustee to streamline MVF's claim process and ensure no double recovery occurs.

As explained above, the Department and the Special Master have coordinated with the SIPA Trustee from the onset of the remission process. Data regarding the bankruptcy claims and subsequent payments has been shared with the Special Master on multiple occasions to ensure that no petitioner receives a payment from MVF funds if his total recovery from any source exceeds the MVF approved pro rata amount—which is currently 40 percent. If future SIPA Trustee distributions occur, the petitioners will receive a payment from MVF only to the extent necessary to provide recovery up to the approved pro rata amount. MVF also requires petitioners to provide collateral recovery updates prior to each distribution of MVF funds.

ATF—AMERICAN TABLE OF DISTANCES

Question 2a. It is my understanding that the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) uses the American Table of Distances (ATD) to determine where explosives storage magazines can be located.

Does the ATF use the American Table of Distances to determine where explosives storage magazines may be located? If so, please explain the Bureau's current measurement process and list any other metrics the ATF may use to determine safe distances for the storage of explosive magazines.

Answer. ATF adopted the American Table of Distances (developed by the Institute of Makers of Explosives (IME)) for the storage of explosive materials in 1971. The table is used by ATF to determine required distances from magazines containing high explosives or blasting agents to potential receptors such as other magazines, inhabited buildings, highways, and passenger railways. This table uses the weight of explosive materials in storage on one axis, and the type of receptor on the other axis.

ATF subsequently adopted the IME's appendix to the American Table of Distances, designed to calculate appropriate separation distances between high explosives, blasting agents, and stores of ammonium nitrate. In addition, ATF has adopted a Department of Defense table of distances for low explosives storage and a display fireworks table of distances modeled after a National Fire Protection Association table.

Question 2b. What other metrics are used by the explosives industry to measure safe storage distances? As technology improves and continues to advance, is ATF looking to alternative metrics or more efficient models, such as quantitative risk assessment, to measure how explosives will react?

Answer. In recent years, individuals in the explosives industry have explored the use of quantitative risk assessment (QRA) for siting explosives storage magazines.

The IME has involved ATF in discussions about the testing, modeling, and development of a QRA tool called the Institute of Makers of Explosives Safety Analysis for Risk (IMESAFR). Based upon such discussions, ATF has approved variances for use of the tool, and ATF continues to explore the possibility of adopting a QRA process for siting explosives magazines.

The IMESAFR program has its roots in the Safety Analysis for Risk (SAFR) software originally developed for the U.S. Department of Defense for assessing risk in its explosives operations. IMESAFR incorporates statistical analysis, computer modeling, and test data to provide, in part, a risk level to persons occupying buildings and traveling in vehicles near explosives operations. The IMESAFR model calculates risk in terms of the statistical expectation for loss of life from an explosives event. IMESAFR is currently the only explosives quantitative risk assessment program that ATF is aware of.

Question 2c. Would a change in measuring method require a statutory or regulatory modification?

Answer. Yes. In order for ATF to change or add methods used to calculate required distances from magazines to receptors, a regulatory change would be required. Currently, the regulations at 27 CFR, Part 555 (Commerce in Explosives) contain specific references to the tables described above, and offer no alternative, except by variance.

QUESTIONS SUBMITTED BY SENATOR JERRY MORAN

Question 1a. On December 12, 2017, The Modernizing Government Technology (MGT) Act was signed into law by the President of the United States. This Act authorizes CFO Act agencies (including DOJ) to establish IT working capital funds which may be used to streamline IT systems, replace legacy products, and support transitions to cloud computing for up to 3 years in order to further modernization efforts. This Act also creates a separate centralized Technology Modernization Fund (TMF) within the Department of the Treasury, to be managed by the General Services Administrator, as well as the government wide Technology Modernization Board (Board). The fiscal year 2018 omnibus appropriated $100 million to the TMF, and the Board has received applications from nine agencies to use this funding.

The Department of Justice's fiscal year 2019 budget request included $31.7 million for Justice Information Sharing Technology (JIST). The Department's CIO uses these appropriated dollars to ensure that IT investments are well-planned and align with the Department's overall strategy.

Please explain how outdated, legacy IT systems have impacted the Department's ability to execute its mission? Has this hindered the Department's law enforcement role?

Answer. The Department continues to effectively carry out its mission objectives through leveraging all operational IT assets. The Department remains committed to modernizing and replacing key mission and business IT systems. Similar to the challenges identified in the Report to the President on Federal IT Modernization, legacy IT systems, built with unsupported code, contain inherent vulnerabilities, such as out-of-support software, that increase an agency's risk for cyber-attacks and impede innovation.

Legacy IT systems do not hinder the Department's law enforcement role generally, though outdated IT systems and reliance on paper processes results in significant inefficiencies in processing cases at EOIR. The Department continues to make progress by leveraging multiple mechanisms for investing and maintaining IT infrastructure. Some of the key system replacement and modernization projects underway within the Department's law enforcement components are:

—*FBI:* National Crime Information Center (NCIC) modernization is delivering new search capabilities and name-matching algorithms to the system deployed nearly 20 years ago. Enhancements to the National Instant Background Check System (NICS) enable faster and more accurate determination of gun purchase eligibility. Modernization of Next Generation Identification (NGI) infrastructure will improve response, biometrics analysis, and identity confirmation.

—*USMS:* Capture program is replacing multiple end-of-life case management systems for custody management, prisoner transport, and fugitive case management built on custom code. The new system uses a modern, industry standard business process management system (BPMS) platform that enables system-to-system interoperability and information sharing.

—*ATF:* Spartan is a business process modernization effort that includes the development of a case management system to replace a suite of applications, origi-

nally deployed in 1998, for criminal investigations and industry regulatory inspections. This single solution designed to replace the current systems will more effectively bring together ATF elements to carry out its mission. Spartan is being developed using the same BPMS technology platform being employed on six projects across the Department, including USMS Capture program and FBI New NICS. This technology platform simplifies solution support within ATF, and enables code sharing and cost avoidance for the Department.

—*EOIR:* The $25 million enhancement request submitted in the President's fiscal year 2019 budget for the EOIR Courts and Appeals System (ECAS) will enable electronic filing of documents, create an electronic record of proceeding, and integrate state-of-the-art information management capabilities for Immigration Judges. These updates will reduce EOIR's reliance on paper processes, ensure that all parties can readily access official documents, leading to greater efficiencies that will reduce the backlog of immigration court cases.

—*BOP:* The BOP is conducting market research to modernize its Sentry prisoner management system, by analyzing options for migrating from a mainframe-based system to a micro-services architecture compatible with a cloud platform.

Question 1b. If so, how does the Department plan to replace these problematic systems?

Answer. Please see my response to question 1c.

Question 1c. Given the recent enactment of the Modernizing Government Technology Act, has the Department considered submitting an application to the centralized Technology Modernization Board or establishing a Working Capital Fund with the sole mission of replacing legacy IT systems? If not, why?

Answer. The Department does not plan to establish a new Modernizing Government Technology Act (MGT) working capital fund (WCF). Currently, the Department funds IT modernization through three primary means: (1) component requested appropriations; (2) the Justice Information Sharing Technology (JIST) appropriated account; and (3) special use accounts, such as the Working Capital Fund.

Component requested appropriations are the principal funding source for mission-specific IT modernization requirements. An example is the fiscal year 2019 request from the Executive Office for Immigration Review for a $25 million IT modernization program increase to develop an electronic filing, case management, document management, and schedule management system.

The JIST account is the principal source for capitalizing enterprise-oriented and shared-service IT capabilities, as well as for cybersecurity investments. The JIST account is an annual, no-year fund under the direct control of the DOJ CIO. Funds are used to support multiyear projects for strategic investments critical to the Department's federated IT enterprise. Further, the JIST appropriation account currently includes a provision authorizing the Attorney General to transfer up to $35.4 million into this account from other Department sources to fund enterprise IT investments. The House Appropriations Committee, Subcommittee on Commerce, Justice, Science, and Related Agencies, in its fiscal year 2019 appropriations mark-up proposes increasing this transfer authority to $50 million.

Finally, special use funds such as Unobligated Balance Transfers (UBT) enable remaining balances on DOJ expiring appropriations to be deposited into a special account. Funding may be withdrawn and applied toward priority IT investments and modernization with congressional notification. UBT allocations are currently capped at $30 million per fiscal year.

JIST transfer authority, and the use of UBT allocations, enhance the Department's ability to address IT modernization needs through existing accounts.

QUESTIONS SUBMITTED BY SENATOR PATRICK J. LEAHY

Question 1a. Under the terms of your March 2017 recusal, you are recused "from any existing or future investigations of any matters related in any way to the campaigns for President." As I stated to you at the April 25, 2018, hearing, recusal is not discretionary; it is required by the clear terms of 28 C.F.R. § 452.

You have acknowledged that your March 2017 recusal was required under the regulations. Do you thus confirm that you have a "political relationship" with President Trump and/or then-candidate Trump?

Answer. This question calls for the personal knowledge of and is specifically directed to former Attorney General Jeff Sessions. As such, it would be inappropriate for the Department to respond to this question at this time.

Question 1b. Yes or no: Given that he has successfully intervened in the case, and it stems from an investigation involving his campaign, does President Trump have a specific and substantial interest in the criminal case against Michael Cohen?

Answer. Consistent with longstanding policy, the Department is unable to answer this question as it relates to an ongoing investigation.

Question 2a. In March, you fired the 21 year veteran and non-political Deputy Director of the FBI for lacking candor. I have seen the underlying reports and understand the seriousness of the allegations. Yet the President was goading you to fire him, counting down the days until his retirement. The President has attacked Mr. McCabe no less than 17 times on Twitter. He even reportedly told Mr. McCabe on the phone to ask his wife what it felt like to be a loser, referring to her failed run for State Senate in Virginia.

You fired Mr. McCabe just 26 hours before he was going to retire. It was also just hours after he was able to present his side of the story to the FBI. Are you aware of any other example of an Attorney General terminating a career employee on the same day that employee was able to present his or her case for leniency?

Answer. After an extensive and fair investigation and according to Department of Justice procedure, the Department's Office of the Inspector General (OIG) provided its report on allegations of misconduct by Mr. McCabe to the FBI's Office of Professional Responsibility (OPR). The FBI's OPR then reviewed the report and underlying documents and issued a disciplinary proposal recommending the dismissal of Mr. McCabe. Pursuant to Department Order 1202, and based on the report of the Inspector General, the findings of the FBI Office of Professional Responsibility, and the recommendation of the Department's senior career official, then Attorney General Jeff Sessions followed the recommendation made by FBI's Office of Professional Responsibility. The timing was a result of the Department's receipt of the previously listed materials. To the extent this question is specifically directed to or calls for the personal knowledge of former Attorney General Sessions, it would be inappropriate for the Department to respond further.

Question 3a. In January, the Departments of Justice and Homeland Security released a report on foreign-born individuals convicted of international terrorism since 9/11. The report has since been widely misused to instill fear of immigrants to justify the President's immigration agenda. In an interview on Fox News to discuss the release of the report, you said, "We know 73 percent of people arrested for terrorism were born abroad. So, if they had been properly screened and rejected, we wouldn't have had these attacks in our country."

Do you stand by that statement?

Answer. The Department stands by the content of the report, which is accurate and based on a sound statistical foundation. Undoubtedly, proper vetting and screening are critically important to our national security. To the extent this question is specifically directed to former Attorney General Jeff Sessions, it would be inappropriate for the Department to respond further.

Question 3b. That statement is misleading for three reasons: (1) you refer to "terrorism" generally, but the report in fact somehow omits the very real threat of domestic terrorism; (2) the report includes U.S. citizens; and (3) the report includes foreign defendants who never stepped foot in this country except when they were extradited here to face trial. Extradition is not immigration.

The White House still has that same misleading claim on its website today. Will you commit to telling the White House to take it down?

Answer. Please see my response to question 3a above.

Question 4. Acknowledging bipartisan concerns over the Department's plans to temporarily pause the Legal Orientation Program (LOP), you testified before us that LOP would instead continue to operate while the Department studies its cost-effectiveness. However, there are still serious concerns that the Department will attempt to skew the findings of this new study in order to justify a more permanent downsizing or termination of LOP.

Question 4a. Will the Department be conducting this new cost-effectiveness study, or will it be conducted by an independent third party?

Question 4b. If an independent third party is conducting the study, will it be empowered to gather and analyze raw data about LOP, or will it be instructed to analyze LOP data provided to it by the Department?

Question 4c. Will the Department commit to providing updates, on demand, to the Senate Appropriations Committee and the Senate Judiciary Committee about methodology, interim findings, or any other information related to the new study?

Answer. The study, broken into phases, is being conducted by a team consisting of both contractors and career Federal employees within EOIR, all of whom are trained analysts, statisticians, or operations researchers. In carrying out the study, EOIR requested data from the LOP contractor and from the Department of Homeland Security (DHS) that it believed would make the study more analytically robust. The Department repeatedly requested raw data from the LOP contractor since its review commenced in November 2017 but did not receive all of the data it requested. It also did not receive data from the Department of Homeland Security (DHS) until the review of Phase I was almost finished. Accordingly, Phase I of the review proceeded with the data available to EOIR at the time, and EOIR is currently re-running its analytics from Phase I based on the data it received from DHS. The results of the review will be provided to Congress.

Question 5a. Last year I offered an amendment to the CJS appropriations bill—which was adopted by voice vote and had been included in previous years—to ensure that the Justice Department would not waste its finite enforcement resources on medical marijuana users who are compliant with State law. You opposed my amendment, claiming that it would let money launderers evade prosecution—which I find odd, since I do not know of any State that allows money laundering.

In United States v. McIntosh, the Ninth Circuit held that defendants asserting compliance with State laws are entitled to an evidentiary hearing. Has your Department ever lost such a hearing? That is, is there any example of a suspected money launderer or other bad actor who successfully convinced a Federal judge he could not be liable because he was compliant with a State medical marijuana law?

Answer. In 2016, over one of my predecessor's objections, the U.S. Court of Appeals for the Ninth Circuit interpreted an appropriations rider regarding medical marijuana broadly to apply both to Department actions that prevent States from implementing their laws regarding medical marijuana and to Department prosecutions of certain individuals and organizations that operate under those laws. United States v. McIntosh, 833 F.3d 1163 (9th Cir. 2016). The court held that the Department may not prosecute violations of the CSA with respect to marijuana unless a court concludes that the individuals or organizations are not in compliance with State medical marijuana law. Then Attorney General Sessions wrote to congressional leaders last year reiterating his predecessors' opposition to this rider, on the grounds that he, like his predecessors, thought it would be "unwise for Congress to restrict the discretion of the Department to fund particular prosecutions" and that "the Department must be in a position to use all laws available to combat the transnational drug organizations and dangerous drug traffickers who threaten American lives." Although this letter did not explicitly refer to money laundering (as does your question), it did provide an example of an individual who held an active Colorado license for operating a medical marijuana business but who also was the ringleader of a criminal organization that shipped marijuana out of State. The letter also stated that, "in the Ninth Circuit, many individuals and organizations that are operating in violation of the CSA and causing harm in their communities may invoke the rider to thwart prosecution."

That has come to pass. Numerous defendants have invoked this rider and courts throughout the Ninth Circuit have held so-called "McIntosh hearings." In one particular case, United States v. Pisarski, two defendants pleaded guilty to growing 32 kilograms, or 327 plants, and intending to sell it to others. As the briefs and decisions in that case explain, the defendants had $416,125 in cash, multiple firearms, gold, silver, and an 18-foot tandem axle trailer on his property, all of which, by the defendants' admissions, were derived from the defendants' marijuana activities or intended to be used to facilitate those activities. Some of the cash was bundled in $10,000 stacks and wrapped in vacuum-sealed black plastic. The firearms and ammunition consisted of a loaded Smith and Wesson .357 revolver, a Glock 21 .45 caliber pistol with a loaded magazine, an extra magazine, a Springfield .22 caliber bolt-action rifle, and a high-capacity magazine. After the guilty pleas, the district court halted the prosecution even though (1) a California government official testified that the defendants had not obtained required sellers' permits or reported sales taxes, (2) the defendants' claimed they only sold small, excess amounts of marijuana and yet provided no documentation that the $416,125 in cash and the precious metals they possessed were offsets for their costs, as required by State law, (3) the defendants failed to establish that the members of the collectives to which they sold marijuana were qualified patients, and (4) the California State attorney general had previously issued guidelines stating that the circumstances under which the defendants operated were indicia of unlawful operations. The government has appealed.

Question 6a. You and I were prosecutors before we entered politics. We both know better than most how courts work. Which is why I was taken aback when the De-

partment announced that it would impose numeric quotas on immigration judges as part of their annual performance reviews. As a former prosecutor, you should know that if proceedings become tainted with even the appearance of unfairness because of quotas, there will be surely be an uptick in appeals.

Has the Department considered the unintended consequence of mounting appeals as a result of these quotas? Wouldn't that directly undermine their purported efficiency-based rationale?

Answer. The performance measures reflect a considered policy judgment regarding the efficiency that an experienced immigration judge working a regular schedule should reasonably be able to achieve. Similar measures are used for administrative judges at the Merit Systems Protection Board, the Department of Interior, the Board of Land Appeals, the Pension Benefit Guaranty Corporation, and the Railroad Retirement Board. In fact, immigration courts themselves have operated under case completion goals for years. Further, these measures are not quotas, which are fixed numbers with no deviation. Rather, the measures will be evaluated subject to six discrete factors, along with a seventh catch-all factor, before making a determination about an immigration judge's performance.

By regulation, immigration judges are required to adjudicate cases "in a timely and impartial manner," and the Department expects immigration judges to meet this responsibility. Suggestions that immigration judges cannot render both timely and impartial decisions create a false dichotomy that discredits the integrity and professionalism of the entire immigration judge corps, including the many immigration judges who can meet the performance measures. Accordingly, because the Department expects immigration judges to fulfill their duty to adjudicate cases both timely and impartially, we do not expect that the performance measures will provide a valid basis for appeal.

Question 7a. According to The Independent, the United Kingdom government is considering agreeing to the transfer of Alexanda Kotey and El Shafee Elsheikh to Guantanamo Bay, from their current reported detention by U.S.-backed Kurdish groups in northern Syria.[1]

What plans, if any, does the Department have to bring these two individuals to face trial in the United States, to incarcerate them in Guantanamo Bay, or to otherwise transfer them from northern Syria?

Answer. The Department of Justice and our partners in the interagency are considering options for these individuals and will seek the option that best protects the national security of the United States.

Question 8a. On October 25, 2017, you appeared before the Senate Judiciary Committee at an oversight hearing, after which you were asked a number of written questions for you to answer under oath. Among these questions, I asked you about 28 U.S.C. §540C, the provision authorizing the establishment of the FBI Police. Senator Manchin and I sent you a letter on February 9, 2018, which reiterated these questions. I have yet to receive your response to either my October 2017 questions or my February 2018 letter with Senator Manchin. Accordingly, please refer to the February 2018 letter and answer the following:

Are there legislative or other impediments preventing the Department from complying with Section 540C as written?

Answer. Please see my response to Question 8c.

Question 8b. What steps is the Department taking to ensure that uniformed FBI Police officers are not unfairly penalized through the denial of salary and benefits (including pension) to which they would be entitled if the FBI had established the FBI Police under Section 540C, as Congress intended?

Answer. FBI Police are paid in accordance with the current law.

Question 8c. Has the Department, or any other component of the U.S. Government, examined issues related to providing salary and benefits (including pension) to uniformed officers of an FBI Police force established under Section 540C? If so, please provide any conclusions and any reports or other documentation produced thereby.

Answer. Yes, the FBI has examined this issue. Normally, employees engaged in protective duties, such as the FBI Police, are not considered law enforcement officers for purposes of early retirement under either the Civil Service Retirement System (CSRS) or the Federal Employees Retirement System (FERS). Statutory excep-

[1] https://www.independent.co.uk/news/uk/politics/isis-jihadists-the-beatles-latest-alexanda-kotey-el-shafee-elsheikh-donald-trump-guantanamo-bay-a8205286.html.

tions have been made for other groups of employees engaged in protective duties, such as the Secret Service Uniformed Division. The U.S. Code (at 28 U.S.C. 540C(b)(5)) requires that pay and benefits of FBI Police be equivalent to members of the Secret Service Uniformed Division. However, the definition of a law enforcement officer in FERS (5 U.S.C. 8401(17)) does not extend to members of the FBI Police.

Question 9a. Last month, the Seventh Circuit issued a ruling effectively ending the Department's attempt to withhold law enforcement funds from cities and States that declined to cooperate with Federal immigration enforcement authorities. A unanimous panel concluded that the Department could not lawfully impose conditions on funds that Congress—with the power of the purse—has not imposed. As Vice Chairman of the Committee that appropriated these funds, I can tell you the court was correct. Yet your Department is now seeking a stay of the decision not because it was wrongfully decided on the merits, but instead on grounds that the nationwide injunction was too broad.

Is the Department's position that—in order to obtain these critical law enforcement resources that Congress has appropriated to keep our communities safe—you would force every impacted jurisdiction to independently file suit?

Answer. Many jurisdictions throughout the country readily provide the modest law enforcement cooperation required by the reasonable Byrne JAG conditions.

While Byrne JAG is still the subject of active, ongoing litigation, the Department has released the vast majority of Byrne JAG awards for fiscal year 2017. As of October 11, 2018, the Department has awarded 859 fiscal year 2017 Byrne JAG awards to jurisdictions with no unresolved questions regarding their cooperation with the relevant conditions. The Department is reviewing the remaining jurisdictions that have not received awards and is working to resolve outstanding expeditiously.

Question 10a. In response to Chairman Moran's question regarding your Department's proposal to transfer the High Intensity Drug Trafficking Area (HIDTA) Program to the Drug Enforcement Administration (DEA), you said that the Office of National Drug Control Policy (ONDCP) was probably not created to or expected to administer a grant of this kind. However, Congress first established ONDCP in 1988 with the HIDTA program deliberately under its jurisdiction. Congress reauthorized the HIDTA Program and made its authority permanent as part of ONDCP in 1998. I do not accept your argument that ONDCP was not meant to be a grant making agency when Congress clearly and deliberately authorized it as such. In contrast, the DEA is not a grant making agency and would need to adjust administratively to take on the task of managing and administering a very large grant program. DEA is an operational law enforcement entity that works alongside and in coordination with HIDTAs, which serve as a coordination mechanism—a major reason why the HIDTA Program has thrived at ONDCP. You concede that it is ONDCP's role to coordinate and DEA's role to enforce.

Why does your budget, in direct contrast to Congress' authorization, suggest funding HIDTAs through DEA even though DEA is not a grant making entity and ONDCP has effectively administered HIDTA for decades?

Answer. While the Department's original intent had been to move HIDTA into the DEA to consolidate drug enforcement efforts, we understand that the fiscal year 2019 committee marks subsequently have not funded the program within DOJ. This being the case, the Department and the DEA will continue to work in close coordination with HIDTA to combat drug trafficking.

Question 10b. Your budget includes no new positions or funding in DEA to manage and administer the HIDTA grants, which, if transferred, would be one of the largest grant programs at the Justice Department. How do you expect DEA to properly and responsibly oversee those grants with no dedicated staff or additional M&A funding? Do you intend to have current DEA staff—who lack grant-making expertise—administer the program and, if so, how many staff do you propose to dedicate to this? What is the M&A cost estimate to effectively oversee the program?

Answer. The fiscal year 2019 budget includes $254 million for the HIDTA program, which includes $3.6 million for the National HIDTA Assistance Center to assist in the administration of the HIDTA program. Additionally, the Department of Justice has a well-established grant program expertise, and DEA will draw on the tremendous experience of these experts to further enhance the HIDTA program's effectiveness as a powerful enforcement tool to combat drug trafficking in the United States.

Question 10c. What evidence do you have that HIDTAs would be better administered through DEA? What practical and applicable data can you provide to this Committee in support of such a sweeping change?

Answer. The United States is in the midst of the worst drug epidemic in history. The solution to this epidemic will not come from one level of government alone, rather it will take the coordinated efforts and resources of Federal, State, local, and Tribal governments working together, and DEA offers such a coordination opportunity. While the Department's original intent had been to move HIDTA into the DEA, we understand that the fiscal year 2019 committee marks subsequently have not funded the program within DOJ. This being the case, the Department will continue to work in close coordination with HIDTA to combat drug trafficking.

Question 10d. What evidence does DOJ have that the current HIDTA program structure is insufficient, inefficient, or in need of any changes?

Answer. The Department's original intent had been to move HIDTA into the DEA to take advantage of operational synergies at DEA, however we understand that the fiscal year 2019 committee marks subsequently have not funded the program within DOJ. This being the case, the Department will continue to work in close coordination with HIDTA to combat drug trafficking.

QUESTIONS SUBMITTED BY SENATOR SHELLEY MOORE CAPITO

Question 1a. In March I sent a letter to your office regarding the decision to delay distribution of Byrne JAG Grants for fiscal year 2017 and the impact that this is having on localities in my State. While I certainly agree with the Department's efforts to implement robust enforcement of our Nation's immigration laws, my concern is that withholding these funds from States like mine, who have no sanctuary cities and have remained compliant with all relevant statutes, runs the risk of disrupting local law enforcement's ability to protect public safety. For instance, the city of Nitro, West Virginia employs a school resource officer to protect the high school using Byrne JAG funding. The delay in distributing these funds has resulted in a lot of uncertainty from city officials as to how they are going to continue funding this important resource. Additionally, my office has heard from the West Virginia State Police, who have expressed similar concerns regarding their ability to continue vital public safety programs, which include efforts to combat the opioid epidemic ravaging our State.

Please provide some insight as to whether the Department has considered resuming distribution of these funds and if so what the timeline for that might be?

Answer. While Byrne JAG is still the subject of active, ongoing litigation, the Department has released the vast majority of Byrne JAG awards for fiscal year 2017. As of October 11, 2018, the Department has awarded 859 fiscal year 2017 Byrne JAG awards to jurisdictions with no unresolved questions regarding their cooperation with the relevant conditions. The Department is reviewing the remaining jurisdictions that have not received awards and is working to resolve outstanding issues expeditiously.

Question 2a. The Department's budget calls for the elimination of nearly 1,200 positions, 400 correctional officers, and the closure of two standalone minimum security camps within the Bureau of Prisons. Over the last few months I have heard from a number of BOP officials in my State expressing their concerns over what they describe as dangerous levels of understaffing. They argue that the positions being eliminated have been intentionally left unfilled which has resulted in inmate-to-staff ratios that jeopardize officer and inmate safety alike. Just a few weeks ago an inmate was murdered during an altercation at USP Hazelton in West Virginia. BOP has had to rely on wide-spread augmentation of staff without adequate preparation and while staffing levels continue to decrease, inmate levels remain relatively unchanged.

How does the Department reconcile these staffing cuts with the fact that prison officials on the ground are characterizing staff shortages as a direct threat to their safety?

Answer. The first priority of the Bureau of Prisons (BOP) is the safety of staff, inmates, and the public. Over the past few years, the number and rate of serious assaults on staff have declined by more than 33 percent. Additionally, the inmate population continues to decline, from a high around 220,000 in 2013, to approximately 183,000 today. Thus far in fiscal year 2018, the population has decreased by almost 3,000. At the minimum security level, BOP facilities have approximately 2,000 empty beds. In light of the significant decrease in the inmate population that

BOP has experienced over the last several years, BOP has identified approximately 5,100 vacant authorized staff positions. Many of the positions identified have been unfunded by Congress for a number of years, including prior to the Federal hiring freeze imposed in January 2017. The administration's proposed fiscal year 2019 budget for BOP would eliminate 1,168 of the vacant positions. Therefore, the proposed elimination of these positions will not result in the loss or displacement of any staff members, or impact actual staffing levels at BOP facilities.

Although prosecutions are on the rise for major crime categories (such as weapons and drug trafficking offenses), it takes several months, if not longer, for offenders to go through criminal proceedings and ultimately get designated to Federal prisons after they are convicted and sentenced. Accordingly, there are a significant number of vacant positions that BOP is currently seeking to fill. The new hires will further reduce the need for augmentation and overtime, and will ensure that BOP facilities continue to operate safely.

Question 3a. The Office of National Drug Control Policy represents a critical resource to my State with regards to the High Intensity Drug Trafficking Areas Program and the Drug Free Communities Program. The Department's budget calls for moving programs under the purview of ONDCP into other agencies, and my concern is that doing so would negatively alter the structure of these programs by reducing their visibility on the State and local levels and possibly subjecting grant distributions to bureaucratic delays.

Has the Department considered the impact of this move in light of these concerns?

Answer. The Drug Enforcement Administration (DEA) is actively involved in High Intensity Drug Trafficking Areas (HIDTAs) throughout the Nation. This involvement includes close coordination with State and local law enforcement officers to identify and investigate the most significant drug traffickers and suppliers threatening local communities.

While the Department's original intent had been to, and enhance their close working relationships with State and local counterparts, we understand that the fiscal year 2019 committee marks subsequently have not funded the program within DOJ. This being the case, the Department and the DEA will continue to work in close coordination with HIDTA to combat drug trafficking.

QUESTIONS SUBMITTED BY SENATOR JAMES LANKFORD

Question 1a. Currently, there are two primary State and Local Law Enforcement Assistance programs that provide grant funding to State and local law enforcement to assist with DNA kit and sexual assault kit (SAKs) backlogs—the statutorily authorized Debbie Smith DNA Backlog Reduction grants administered by National Institute of Justice (NIJ) and the statutorily unauthorized Sexual Assault Kit Initiative (SAKI) administered by the Bureau of Justice Assistance (BJA).

Please provide the following financial data for funds appropriated to the Debbie Smith DNA Backlog Grant Program in fiscal year 2015, fiscal year 2016, and fiscal year 2017:

Appropriated amount spent on/awarded for testing DNA and sexual assault kits.

Answer. The Department of Justice (DOJ) appropriations acts for the specified fiscal years (2015, 2016, and 2017) did not contain any funds appropriated pursuant to 34 U.S.C. § 40701, the "Debbie Smith DNA Backlog Grant Program" statute.[2] Accordingly, the Department awarded no grants under that statutory authority in those years. Statutory authority for the National Institute of Justice's (NIJ) DNA capacity enhancement and backlog reduction programs and activities, and for the Bureau of Justice Assistance's (BJA) Sexual Assault Kit Initiative (SAKI), respectively, has come—solely—from two, separate appropriations line items enacted in the DOJ appropriations acts for each of the fiscal years mentioned.

The fiscal year 2017 statutory authority for NIJ's DNA capacity enhancement and backlog reduction programs and activities (enacted via language substantially similar to the language enacted in the two preceding fiscal years) makes funds available "for a DNA analysis and capacity enhancement program and for other local, State, and Federal forensic activities, including the purposes authorized under [34 U.S.C.

[2] In fact, no appropriations have been enacted (and no grants have been made) to date pursuant to this statutory authority. The enacted language—enacted in annual DOJ appropriations acts—that provides the statutory authority for NIJ's backlog reduction and capacity enhancement activities, in particular, has remained substantially similar in each year over the past decade.

§ 40701]" (the "DNA and forensic program appropriation") (Department of Justice Appropriations Act, 2017, Public Law No. 115–31, 131 Stat. 135, 204).

NIJ publishes an annual report, which it also provides to Congress, on the activities it funds with the DNA and forensic program appropriation. The report in each year includes a detailed discussion and breakdown of activities funded for the covered fiscal year, including the total amounts awarded by fiscal year under NIJ programs that make funds available for DNA testing (including evidence from sexual assault kits), among other things. Links to these reports for fiscal years 2015 through 2017 are provided below.

Fiscal Year 2015 Funding for DNA Analysis, Capacity Enhancement And Other Forensic Activities: https://www.ncjrs.gov/pdffiles1/nij/249905.pdf

Fiscal Year 2016 Funding for DNA Analysis, Capacity Enhancement, And Other Forensic Activities: https://www.ncjrs.gov/pdffiles1/nij/250552.pdf

Fiscal Year 2017 Funding for DNA Analysis, Capacity Enhancement, And Other Forensic Activities: https://www.ncjrs.gov/pdffiles1/nij/251445.pdf

Question 1b. Appropriated amount spent on/awarded for each of the authorized purposes for use of the funds under 34 U.S.C. § 40701(a)

Answer. Please see my response to Question 1a.

Question 1c. Appropriated amount spent on/awarded for each other section of 34 U.S.C. § 40701.

Answer. Please see my response to Question 1a.

Question 1d. Appropriated amount spent on/awarded for all other costs not included in 34 U.S.C. § 40701.

Answer. Please see my response to Question 1a.

Question 1e. Each amount under question 1a-1d, represented as a percentage of total amount spent on the Debbie Smith DNA Backlog Grant Program.

Answer. Please see my response to Question 1a.

Question 2a. Please provide the following financial data on funds used for the Sexual Assault Kit Initiative in fiscal year 2015, fiscal year 2016, and fiscal year 2017:
Amount spent on/awarded for testing DNA and sexual assault kits.

Answer. Between fiscal years 2015 and 2017, SAKI appropriations have been authorized by each year's Department of Justice appropriations act. This includes Public Law (Public Law) 113–235 in fiscal year 2015, Public Law 114–113 in fiscal year 2016, and Public Law 115–31 in fiscal year 2017. For example, the appropriations language that supports SAKI in fiscal year 2017 makes funds available "for a grant program for community-based sexual assault response reform." (Department of Justice Appropriations Act, 2017, Public Law No. 115–31, 131 Stat. 135, 204).

SAKI supports the Department's criminal justice priorities of reducing violent crime and supporting law enforcement officers and prosecutors by: (1) providing jurisdictions with resources to address sexual assault kits (SAKs) in their custody that have not been submitted to a forensic laboratory for testing with Combined DNA Index System (CODIS)-eligible DNA methodologies; and (2) improving investigation and prosecution in connection with evidence and cases resulting from the testing process.

The goal of SAKI is the creation of a coordinated community response that ensures just resolution to these cases, whenever possible, through a victim-centered approach, and to build jurisdictions' capacities to prevent the development of conditions that lead to high numbers of unsubmitted SAKs. SAKI funding is intended to help law enforcement and prosecutors address all of the challenges associated with reducing the number of unsubmitted SAKs in their jurisdictions. This will give these jurisdictions the evidence and tools to solve and reduce violent crimes associated with sexual assault, while achieving the long-term goal of improving the criminal justice response to cases of sexual assault.

Unlike NIJ's backlog reduction efforts, SAKI is focused on locating and testing previously unsubmitted evidence, rather than addressing backlogs in the testing process. Grantees are permitted to spend up to 50 percent of their awards on testing of unsubmitted SAKs; their remaining funds support other elements of the holistic SAKI approach discussed above. Based on the amounts awarded to SAKI jurisdictions between fiscal years 2015 and 2017, BJA estimates[3] that:

[3] These amounts are estimates due to awards being made for a holistic approach that supports multiple programmatic activities in addition to testing of SAK evidence. These estimates were calculated by determining the maximum amount allowed to be used for testing (50 percent of all site based awards).

—$15.1 million (41.6 percent of total SAKI awards) was spent on testing of unsubmitted SAKs in fiscal year 2015;
—$15.7 million (38.9 percent of total SAKI awards) was spent on testing in fiscal year 2016; and
—$17.6 million (47.4 percent of total SAKI awards) was spent on testing in fiscal year 2017.

BJA's SAKI program webpage provides detailed information on SAKI awards and activities funded in fiscal years 2015 through 2017: https://www.bja.gov/ProgramDetails.aspx?Program__ID=117#horizontalTab1.

Question 2b. Amount spent on/awarded for all other uses than testing sexual assaults kits—accounted for by use.

Answer. Please see my response to Question 2a.

Question 2c. An identification of source and authority of funds for each spend/award under questions 2a-2b.

Answer. Please see my response to Question 2a.

Question 2c. Each amount under question 2a-2b, represented as a percentage of total amount spent on SAKI.

Answer. Please see my response to Question 2a.

Question 3a. Has DOJ explored the possibility of consolidating these programs? Why or why not?

Answer. Please see my response to Question 3b.

Question 3b. Are there economies of scale, or otherwise implementable best practices based on commonality of purpose, scope, or practice, which can be pursued in the Debbie Smith DNA Backlog Grant Program and the Sexual Assault Kit Initiative?

Answer. The Department has explored the possibility of program consolidation (with respect to programs and activities in relation to sexual assault evidence kits) under both the current and previous administrations and has determined that the various programs serve different needs and are complementary. NIJ and BJA have engaged in deliberate coordination with respect to these initiatives to avoid unintentional program overlap. Therefore, though the two programs both have components that can address DNA testing of sexual assault evidence, the respective programs engage and focus on somewhat different criminal justice system stakeholders—and on different stages of the criminal justice process—and address distinct and separate issues. In the event that future enactments may result in a consolidation of activities, the Department would continue to strive to ensure that it leverages program resources in this area to maximize impact.

NIJ's DNA Capacity Enhancement and Backlog Reduction (DNA CEBR) grants program has different objectives and purposes than BJA's Sexual Assault Kit Initiative (SAKI). The DNA CEBR program funds States and units of local government with existing crime laboratories that conduct DNA analysis to process, record, screen, and analyze forensic DNA and/or DNA database samples, and to increase the capacity of public forensic DNA and DNA database laboratories to process more DNA samples, thereby helping to reduce the number of forensic DNA and DNA database samples awaiting analysis. The cases DNA CEBR grants fund have already been submitted by the law enforcement agency to the crime laboratory for DNA analysis. These cases include violent crime cases (such as homicides and other violent assaults) and property crimes, not just sexual assault kits (SAKs). As individual crime laboratory resources and demands vary across the Nation, DNA CEBR grant recipients use their own discretion to spend the funding for DNA laboratory capacity enhancement purposes, for DNA analysis of evidence from all types of casework (including sexual assault evidence, DNA database samples from convicted offenders and, in applicable jurisdictions, arrestees), or for any combination of the two, based on the recipient jurisdiction's specifically-identified needs.

The main objectives of BJA's SAKI program are to (1) provide jurisdictions with resources to address SAKs in their custody that have not been submitted to a forensic laboratory for testing and (2) improve investigation and prosecution in connection with evidence and cases resulting from the testing process. The SAKI program ensures a coordinated community response that seeks just resolutions to these cases, whenever possible, through a victim-centered approach and to build jurisdictions' capacities to prevent the development of conditions that lead to high numbers of unsubmitted SAKs. And, unlike DNA CEBR, SAKI funds can be used to analyze forensic evidence associated with sexual assault cases besides DNA.

The overall goal of DNA CEBR, as stated above, is to enhance DNA testing capacity in State and local crime laboratories while reducing the numbers of forensic-DNA- and DNA-database samples awaiting testing. SAKI is a resource intended to help law enforcement and prosecutors address all of the challenges associated with SAKs that have never been submitted to a forensic laboratory for testing.

QUESTIONS SUBMITTED BY SENATOR DIANNE FEINSTEIN

LACK OF ATF RESOURCES

Question 1a. I strongly believe that ATF is consistently understaffed and underfunded, despite your assertions that DOJ will prioritize investigating and prosecuting gun crimes.

What is also difficult is that year after year, the bills produced by this subcommittee and its House counterpart include a number of policy riders that limit the Federal Government's ability to enforce existing gun laws. These provisions do everything from limiting ATF's ability to make commonsense updates to its definitions, to requiring sellers to report suspicious transactions, to properly classifying dangerous ammunition.

Can you describe how these appropriations riders and the underfunding of ATF impact the Department's ability to protect public safety?

Answer. ATF is subject to several specific restrictions on its use of appropriated funds. Some of these restrictions impose limits on ATF's regulatory authority. Examples include riders that prohibit ATF from using appropriated funds to require a physical inventory of firearms held by a Federal Firearms Licensee (FFL), consolidate or centralize FFL firearm acquisition or disposition information, electronically retrieve FFL out of business record information by name or personal identification code, or to change the definition of "curios or relics" in 27 C.F.R. 478.11. ATF exercises its existing lawful authority to carry out its mission, including regulating firearms in a manner consistent with statutory mandates. ATF has a crucial public safety mission of reducing firearms violence, combating firearms trafficking, and decreasing the risk posed to the public from explosives, bombs and arson. To fulfill its mission, ATF must continuously strive to maximize its limited resources. ATF is a lean, efficient organization, and has consistently adapted to tight budgetary circumstances. The Department's budget requests for ATF seek funding at a level sufficient to sustain existing operations while enhancing programs that most effectively combat violence related to firearms and explosives.

Question 1b. How can you actually enforce existing laws when Congress puts all of these obstacles in your way?

Answer. Notwithstanding these limits on its use of appropriated funds, ATF exercises its existing lawful authority to carry out its mission. In fiscal year 2018, the Justice Department charged more than 15,300 defendants with Federal firearms offenses, which is 17 percent more than the previous record.

CENSUS CITIZENSHIP QUESTION

Question 2a. On March 26, Commerce Secretary Ross issued a memorandum directing the Census Bureau to add a question on citizenship status on the 2020 Census. The memo stated that the citizenship question was being included at the request of the Justice Department because DOJ argued that census-level data on citizenship is needed to enforce the Voting Rights Act.

This data has never been required on census forms sent to all Americans since the passage of the Voting Rights Act. Why is it now needed?

Answer. The Department made this request to reinstate a citizenship question on the census in furtherance of its commitment to fair and consistent enforcement of the Nation's voting rights laws. As explained in the Department's letter, accurate citizenship data is "critical to the Department's enforcement of Section 2 of the Voting Rights Act and its important protections against racial discrimination in voting. To fully enforce those requirements, the Department needs a reliable calculation of the citizen voting-age population in localities where voting rights violations are alleged or suspected."

Question 2b. What steps is your Department taking to protect voting rights now and how would DOJ's voting rights actions change if this new data is collected?

Answer. The Department of Justice is resolutely committed to the robust and evenhanded enforcement of the Nation's civil rights laws and to free and fair elections for all Americans. In February 2018, the Department filed and resolved a vot-

ing rights case involving the State of Arizona. Since January 2017, the Department has participated as a party in three cases brought under Section 2 of the Voting Rights Act. The Department has also successfully resolved three statewide cases and under the National Voter Registration Act. Each of those resolutions guarantees that Americans across the country will have a full and fair opportunity to register to vote and to remain registered. Additionally, the Department has filed three amicus curiae briefs in voting rights cases, including a case alleging unconstitutional denials of the right to vote and a case seeking equal access at polling places for members of a language minority group in one of America's largest cities.

The Department also has continued our election monitoring program as well as our outreach and enforcement work under Section 203 of the Voting Rights Act.

Section 203 of the Voting Rights Act protects the rights of members of language minority groups to participate in elections. The Department is also protecting the rights of military and overseas voters under the Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA). The Department has assisted several States in achieving UOCAVA compliance in special elections in 2017 and 2018, and worked with States to achieve UOCAVA compliance through the 2018 midterm elections.

The Department is working to ensure that all of this year's elections are conducted in accordance with Federal law requirements. We are actively working with States and localities to ensure that members of language minority groups and our brave men and women in uniform have a full and equal opportunity to cast their ballots.

With regard to how the Department will use this census data, the Department's letter explained why "the decennial census questionnaire is the most appropriate vehicle for collecting [citizenship] data, and reinstating a question on citizenship will best enable the Department to protect all American citizens' voting rights under Section 2." As you may know, "[t]he Supreme Court . . . held that Section 2 of the Voting Rights Act prohibits 'vote dilution' by State and local jurisdictions engaged in redistricting[.]" Vote dilution can occur "when a racial group is improperly deprived of a single-member district in which it could form a majority." As many Federal courts of appeals have held, "where citizenship rates are at issue in a vote-dilution case, citizen voting-age population is the proper metric for determining whether a racial group could constitute a majority in a single-member district[.]" Thus, "[t]hese cases make clear that, in order to assess and enforce compliance with Section 2's protection against discrimination in voting, the Department needs to be able to obtain citizen voting-age population data for census blocks, block groups, counties, towns, and other locations where potential Section 2 violations are alleged or suspected."

Question 2c. Were you involved in making this recommendation? Did the Department discuss this with the White House? If so, with whom?

Answer. Since the Department submitted its letter, at least six lawsuits have been filed against the Department of Commerce challenging its decision to reinstate a question regarding citizenship to the 2020 Census questionnaire. The Justice Department is defending these lawsuits. In deference to the courts charged with hearing and resolving pending litigation involving the United States, it is longstanding Department policy not to comment on or discuss matters involved in active litigation. To the extent this question is specifically directed to former Attorney General Jeff Sessions, it would be inappropriate for the Department to respond further.

DOJ RULE TO BAN BUMP STOCKS

Question 3a. DOJ recently started the rulemaking process to ban bump stocks under the National Firearms Act.

However, ATF has repeatedly said for years that it cannot ban bump stocks, because the National Firearms Act does not allow it.

The ATF repeated this position as recently as April 2017, and the ATF Director has repeatedly stated in public that the ATF cannot ban bump-fire stocks under current law. That's why I proposed legislation to change the law.

Do you expect that DOJ's bump stock rule will be challenged in court?

Answer. On December 18, 2018, Acting Attorney General Matthew Whitaker announced that the Department of Justice has amended the regulations of the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF), clarifying that bump stocks fall within the definition of "machinegun" under Federal law, as such devices allow a shooter of a semiautomatic firearm to initiate a continuous firing cycle with a single pull of the trigger. The final rule will go into effect March 26, 2019; 90 days from the date of publication in the Federal Register. A lawsuit challenging the rule was filed following the announcement in December.

Question 3b. If DOJ's bump stock rule were struck down by the courts, would you support legislation to ban bump stocks?

Answer. Should Congress choose to propose legislation on this issue, the Department would be pleased to review it.

DOMESTIC VIOLENCE CRIMES AND GUNS

Question 4a. Domestic violence abusers who have been convicted of a misdemeanor crime of domestic violence or who are subject to a protection order are supposed to be prohibited from possessing firearms or ammunition under Federal firearms law.

However, I understand that many domestic violence abusers are, nevertheless, able to buy guns.

Local domestic violence programs often attempt to help victims by seeking removal of the firearms, but they are unable to get assistance from the DOJ and other Federal agencies. Similarly, local law enforcement is often overwhelmed by the sheer numbers of firearms in the possession of domestic violence offenders.

How will the DOJ improve their response to cases like these, which are likely to lead to homicides?

Answer. ATF will continue to work with State and local law enforcement to ensure that prohibited persons do not acquire or possess firearms and ammunition. ATF will also continue to educate individuals and organizations engaged in the business of the sale of firearms and ammunition of their responsibilities under the law. ATF's authority to seize firearms in such instances is limited to circumstances where it can establish probable cause that the firearms are possessed in violation of Federal law. ATF works closely with State and local partners on a case-by-case basis to determine if sufficient Federal seizure authority exists, and from that determination ATF proceeds accordingly.

In addition, the Department's Office on Violence Against Women has funded two technical assistance projects that address the safety concerns associated with domestic violence involving firearms. First, the National Resource Center on Domestic Violence and Firearms provides information for communities on best practices to address the safety of domestic violence victims where firearms are involved. Additionally, the Firearms Safety Enhancement Project provides specific technical assistance to identified communities to help them develop coordinated community responses that enhance safety in domestic violence cases involving firearms.

METHAMPHETAMINE

Question 5a. In 2017, the vast majority of the nearly 29,000 kilograms of methamphetamine seized at the Southwest Border was seized by the San Diego Sector.

Not surprisingly, San Diego has been especially hard hit by methamphetamine abuse. In 2016, there were 377 meth-related deaths in the county. This is the equivalent of one death every 23 hours.

That is why the COPS Anti-Methamphetamine Task Force grants—a program I helped establish in 2014—is so important. This program currently provides approximately $8 million to State law enforcement agencies in 6 States to participate in meth-related investigative activities.

Given the significant increase in methamphetamine use and associated deaths, why does your budget propose eliminating funding for this program?

Answer. The Department remains committed to its methamphetamine related investigative and prosecutorial efforts. The budget does not fund these grants to State and local level task forces; however, it does include $10 million for DEA to continue its clandestine methamphetamine laboratory cleanup. DEA also continues to train State and local law enforcement personnel from across the Nation through its clandestine lab course. Finally, DEA is committed to its robust engagement and partnership with the Government of Mexico. Through this partnership, we seek to stop the production and trafficking of methamphetamine and to support clandestine lab training for Mexican law enforcement personnel.

FIRING OF DEPUTY DIRECTOR MCCABE

Question 6a. Last month, the Justice Department allowed the Senate Judiciary Committee to review the Office of Professional Responsibility report on former FBI Deputy Director Andrew McCabe that led to his firing.

It's my understanding that Mr. McCabe submitted a response to the allegations against him, but his response was not included in the materials provided to the Senate Judiciary Committee.

It's important that we have the full record. Will you commit to providing the Committee Mr. McCabe's response?

Answer. On June 6, 2018, the Department provided the Senate Judiciary Committee with the FBI Office of Professional Responsibility report on former FBI Deputy Director McCabe, the Memorandum to the Attorney General from an Associate Deputy Attorney General, and the decision by then Attorney General Sessions. On June 12, 2018, less than one week later, Mr. McCabe's attorney filed a lawsuit against the Department, the Department's Office of Inspector General, and the FBI. In light of the pending litigation and to the extent this question calls for the personal knowledge of former Attorney General Jeff Sessions, it would not be appropriate to provide further comment or documentation regarding this matter.

Question 6b. Can you give me another example where an employee has been given just 7 days to respond to serious allegations of misconduct?

Answer. Federal law provides that when an agency has reasonable cause to believe that an employee has committed a crime for which a sentence of imprisonment may be imposed, and the agency is proposing removal (or suspension), a shortened 7-day period applies in which the employee may respond to the agency's proposed action. See 5 U.S.C. Section 7513(b); 5 C.F.R. 752.404. This provision may be invoked even in the absence of judicial action.

Question 6c. Is there another instance where an employee was fired the same day that he or she responded?

Answer. The Department does not as general matter comment on personnel decisions. Through an extraordinary accommodation in light of the enormous public interest in this matter the Department made available to the Senate Judiciary Committee the FBI Office of Professional Responsibility report on former FBI Deputy Director McCabe, the Memorandum to the Attorney General from an Associate Deputy Attorney General, and the decision by then Attorney General Sessions.

DISCLOSURE OF LAW ENFORCEMENT INFORMATION

Question 7a. Department officials have explained that providing the public or Congress with information during an active investigation "could compromise the reputational or privacy rights of uncharged parties, undermine any ongoing investigations of those parties, and give the misimpression that the Department's investigative steps are susceptible to political influence.

What are the risks of Congress requiring the Department to report on factual findings or investigative steps during an open investigation?

Answer. Over many years and many changes of administration, the Department has consistently articulated a concern that Congressional involvement in ongoing criminal investigations could politicize the criminal justice system or give the appearance of such, thus threatening the integrity of those investigations. The Department's longstanding policy of investigatory independence was more fully set forth in a January 27, 2000 letter from Robert Raben, Assistant Attorney General for the Office of Legislative Affairs, to John Linder, then-Chairman of the Subcommittee on Rules and Organization of the House Committee on Rules.

RECUSAL FROM TRUMP OR CLINTON INVESTIGATIONS

Question 8a. You previously committed to recusing yourself from "any matters related in any way to the campaigns for President of the United States," as well as issues related to Hillary Clinton's emails or the Clinton Foundation.

In March, however, you announced that you had asked the Inspector General and the U.S. Attorney in Utah to look into various matters related to Uranium One and the Clinton Foundation.

How is your referral of these matters consistent with your previous commitment to recuse from any matters involving the 2016 presidential campaigns or the Clinton Foundation?

Answer. Mr. Huber was asked to look into a number of matters and to report back to the Attorney General or Deputy Attorney General as appropriate. Mr. Huber will report to the Department consistent with the rules of professional responsibility and government ethics regulations that govern Department attorneys. To the extent this question is specifically directed to former Attorney General Jeff Sessions, it would be inappropriate for the Department to respond further.

HANDLING OF SEXUAL HARASSMENT CLAIMS

Question 9a. A June 2017 Inspector General report found systemic problems with how allegations of sexual misconduct were handled by the Justice Department's Civil Division. The report details several serious incidents of sexual misconduct.

In one instance, a senior male attorney groped two of his female colleagues without their consent. Shortly thereafter, he was transferred to another division and received no suspension or reduction in pay.

What steps have you personally taken to ensure the Department of Justice is free from sexual harassment and misconduct in the workplace?

Answer. On April 30, 2018, the Department issued a memorandum directing heads of components to address sexual harassment and sexual misconduct allegations with vigilance and seriousness. *See* https://www.justice.gov/policies-and-directives-effect-relating-and-duty-conduct-including-sexual-misconduct. The directive was the result of the Department's intensive efforts to address 2017 findings by Inspector General Horowitz regarding how the Department handles claims of sexual harassment and sexual misconduct. Components were directed to address such allegations through:

—Enhancing the management, investigation, and tracking of allegations of sexual harassment and sexual misconduct;
—Informing employees of how they can report allegations of sexual harassment or sexual misconduct;
—Ensuring that allegations are reported to component management, security offices, and OIG under applicable policies;
—Keeping employees informed of the progress of the component's reviews of their allegations;
—Proposing and imposing consistent and serious discipline for substantiated allegations;
—Considering ongoing investigations of sexual harassment and misconduct allegations or prior disciplinary actions for sexual harassment or misconduct when making decisions about awards (monetary and otherwise), public recognition, or favorable personnel actions (such as promotions); and
—Ensuring that employees are aware of the Department's policies regarding harassment, sexual misconduct, and other related on-and off-duty conduct.

With respect to disciplinary actions, the directive urges components to propose strong and meaningful disciplinary action to address substantiated allegations. For example, a penalty of at least a 15-day suspension (up to removal, including a demotion) should be proposed where a substantiated incident of sexual harassment or misconduct involves aggravating factors (such as sexual assault, stalking, repetition, quid pro quo for official actions, any form of voyeurism such as peeping, or retaliation for reporting prior misconduct); or where the subject has a supervisory role vis-à-vis the victim or was previously disciplined for sexual harassment or misconduct.

Finally, the directive provides for annual reporting and accountability, which will provide Department leadership greater visibility into how allegations of sexual harassment and sexual misconduct are handled.

With greater awareness of our policies prohibiting sexual harassment and misconduct, as well as renewed vigilance for reporting, investigating, and initiating consistent and decisive action on substantiated allegations, the Department continues to strive for a workplace free of sexual harassment and misconduct.

Question 9b. What are the penalties for employees who are involved in sexual harassment or misconduct? Are they sufficient?

Answer. Please see my response to 9a.

Question 9c. A June 2017 DOJ IG report on sexual harassment found the Civil Division engaged in a practice called "pass the trash," where an employee accused of sexual misconduct would be transferred to another division and not reprimanded or punished. The IG concluded that this is in conflict with the Department of Justice's zero tolerance policy for sexual harassment.

Are you familiar with the practice at DOJ called "pass the trash"?

Answer. Please see my response to 9a.

Question 9d. Are you aware of any Division at DOJ still engaging in the "pass the trash" practice?

Answer. Please see my response to 9a.

Question 9e. Can you assure the Committee it is no longer in practice anywhere in DOJ?

Answer. Please see my response to 9a.

Question 9f. Earlier this year, the Civil Rights Division launched an initiative to combat sexual harassment in workplace.

What enforcement actions will the Civil Rights Division begun to pursue under this Initiative?

Answer. In February 2018, the Division announced the launch of its Sexual Harassment in the Workplace Initiative (Initiative). This Initiative, which will be implemented by the Division's Employment Litigation Section, is intended to tackle sexual harassment in public sector workplaces. The Initiative focuses on local, State, and Federal Government employers. Specifically, the Initiative seeks to assist agencies with implementing policies and procedures designed to more quickly and efficiently identify potential sexual harassment or misconduct. The Initiative will also assist employers in the enforcement of standing policies and procedures, and will initiate interventions when necessary to improve the workplace for all employees. As part of the Initiative, the Division will prioritize the review and acceptance for litigation of sexual harassment charge referrals from the Equal Employment Opportunity Commission (EEOC).

Since the start of the Initiative, the Division has filed one enforcement action based on a charge of sex discrimination, and has received a favorable verdict in the bench trial of a sexual harassment case brought in Wyoming. In addition, the Division is conducting several sexual harassment investigations, and pursuant to longstanding Department policies, all information relating to these investigations is confidential.

Question 9g. What new resources are being provided to this initiative?

Answer. The Division will redirect existing attorney, paralegal, and paraprofessional resources to staff the Sexual Harassment in the Workplace Initiative. The Initiative staff members will work in conjunction with the United States Attorney's Offices. The Division's Employment Litigation Section has formed an internal taskforce that will focus on implementing the goals of the Initiative.

Question 9h. According to the Department, this Initiative will also develop policies for public sector employers to ensure that sexual misconduct allegations are properly reported and that the perpetrators face consequences.

Can you expand on the Department's plans for developing and implementing these policies?

Answer. Division staff will work with employers, civil rights advocates, and other Federal agencies, including the EEOC, to develop model anti-sexual harassment policies and trainings for State and local employers. The Division anticipates that these newly developed policies and tailored, interactive trainings will promote transparency and accountability within workplaces to prevent illegal harassment. The model policies and trainings also seek to provide safeguards against retaliation for persons who report sexual harassment. Additionally, the Division's outreach efforts will provide information to employers about their Title VII responsibilities and information to their employees about their Title VII rights and remedies.

"ENGAGING IN THE BUSINESS" INVESTIGATIONS AND PROSECUTIONS

Question 10a. The Department released a new guidance a couple of years ago outlining how and when a gun seller is "engaging in the business" of dealing firearms—and must therefore get a Federal license and run background checks on all buyers.

The ATF and DOJ committed to a more robust enforcement of dealers who illegally engage in the business without a license.

What has the Department done to fulfill this commitment since last year? Please share any tangible statistics or anecdotes indicating an increase in investigations.

Answer. Please see my response to Question 10b.

Question 10b. How has the Department changed its approach in order to fulfill this commitment? Has there been an uptick in arrests made for the "engaging in the business" charge?

Answer. ATF is committed to protecting our communities from violent criminals, criminal organizations, the illegal use and trafficking of firearms, and other Federal violations over which ATF has jurisdiction.

ATF has Criminal Enforcement groups enforcing Federal criminal laws and Industry Operations Investigators (IOIs) regulating the firearms industry. Special Agents and IOIs work collectively to accomplish our mission. Special Agents and IOIs participate in many gun shows across the Nation, educating the public on firearms laws and the requirements to obtain a Federal Firearms License. Special

Agents attempt to identify and interdict any illicit firearms transfers. Special Agents also attempt to identify individuals who are suspected of dealing in firearms without the required Federal Firearms License. When these individuals are identified, ATF takes all possible measures to stop any further criminal activity.

Statistics indicate that the number of prosecutions for violations of Title 18 USC 922(a)(1)(A), Dealing Firearms without a license, has increased from 178 during fiscal year 2017 to 253 for fiscal year 2018.

HANDGUNS THAT FIRE RIFLE ROUNDS

Question 11a. Over the past two decades, the gun industry has developed handguns that can fire rifle rounds, penetrating the standard body armor worn by law enforcement officers. This is extraordinarily concerning to our law enforcement officers.

Do you believe such handguns represent a threat to law enforcement?

Answer. Handguns firing rifle cartridges produce and utilize a higher chamber pressure than typical handgun ammunition and therefore fire projectiles at a greater velocity. When compared to traditional handguns keeping all other variables equal, Kevlar vests are less likely to stop these projectiles. However, the likelihood of any projectile penetrating a soft Kevlar vest is dependent on numerous variables, including distance, type of projectile, barrel length, and propellant powder load, among others.

Question 11b. Are such handguns generally subject to the National Firearms Act?

Answer. No. These handguns are not NFA firearms.

Question 11c. What will be the Department's plan to address this new type of weapon?

Answer. The Department will continue to regulate the production of these firearms under the Gun Control Act.

ONGOING LAWSUITS DEFENDED BY DOJ

Question 12a. I understand that your budget request includes additional funds for attorneys in the Federal Programs Branch of DOJ, which defends against lawsuits. Can you please provide a status on the additional amount of resources you would need going forward to defend the following?

Lawsuits defending against DHS' Travel Ban?

Answer. The litigation challenging the President's Executive Orders and Memoranda designed to protect the American people from terrorist attacks by foreign nationals admitted to the United States is now winding down at the district court level.

Question 12b. Lawsuits challenging the President's alleged acceptance of "emoluments," in violation of the "emoluments clause" in the Constitution?

Answer. There are currently three lawsuits alleging violations of the Foreign and Domestic Emoluments Clauses of the Constitution whenever the President's businesses receive any benefit from foreign and domestic government instrumentalities. One case is currently on appeal to the U.S. Court of Appeals for the Second Circuit, after a U.S. District Court dismissed the complaint. The remaining two cases are pending before district courts in Maryland and the District of Columbia. In both cases, dispositive motions have been fully briefed and arguments on the pending motions were held in early June.

Question 12c. Lawsuits challenging the bump stock ban rule that the DOJ is proposing?

Answer. On March 29, 2018, the Department of Justice issued a notice of proposed rulemaking to amend the Bureau of Alcohol, Tobacco, Firearms, and Explosives regulations to clarify that "bump fire" stocks, slide-fire devices, and devices with certain similar characteristics (bump-stock-type devices) are "machineguns" as defined by the National Firearms Act of 1934 (NFA) and the Gun Control Act of 1968 (GCA), because such devices allow a shooter of a semiautomatic firearm to initiate a continuous firing cycle with a single pull of the trigger. The comment period closed at midnight on June 27, 2018. ATF thoroughly assessed all comments received during the comment period before determining the content of a final rule. On December 18, 2018, Acting Attorney General Matthew Whitaker announced that the Department of Justice had amended the necessary regulations and that the final rule would go into effect March 26, 2019; 90 days from the date of publication in the Federal Register. With respect to fiscal year 2019, the Civil Division does not anticipate needing additional resources beyond our current fiscal year 2018 base budget,

which funds necessary Automated Litigation Support (ALS) services, and the fiscal year 2019 request for the purpose of defending any actions challenging any final regulation promulgated thereafter.

Question 12d. Lawsuits involving border wall "takings"—where the Federal Government will have to "take" real property from landowners on the Southern Wall?

Answer. Eminent domain proceedings to acquire real property are coordinated through the Department's Environment and Natural Resources Division (ENRD). Notably, ENRD has worked on land acquisition for border security projects since the 1990s. At this time, the Department anticipates supporting acquisition efforts for this fiscal year primarily in the Southern District of Texas, and ENRD is closely coordinating with that District to ensure adequate staffing to support those activities. ENRD is examining options for addressing these needs using existing appropriations and staffing levels, while also seeking to hire at least 2 new personnel during this fiscal year to support this work.

Question 12e. FOIA lawsuits brought against Federal agencies, particularly with respect to ethics violations and the receipt of improper benefits by the EPA Administrator, the HUD Secretary, and the Interior Secretary?

Answer. In 2017, more than 560 cases were filed against Federal agencies under the Freedom of Information Act (FOIA). This represents an increase of approximately 29 percent over the prior calendar year, and an increase of more than 123 percent compared to 10 years ago. The Federal Programs Branch handled approximately 23 percent of the new FOIA suits brought in 2017, an increase of 17 percent over the prior year and a 99 percent increase compared to 10 years ago. The rising caseload of FOIA litigation is a major driver for the fiscal year 2019 Federal Programs increase in the President's Budget. If this budget increase is granted, the Civil Division will be better positioned to address these cases.

FUNDING FOR DIRECT VICTIM SERVICES

Question 13a. Many victim service providers that receive Victim of Crime Act (VOCA) assistance funds have stated they need training and technical assistance to manage funds they receive to comply with auditing requirements, on top of the important work they do in providing direct assistance to victims.

What is DOJ doing to ensure that they have the appropriate training and technical assistance to manage the funds?

Answer. The Department, through the Office for Victims of Crime (OVC), works to ensure that every victim has access to a well-trained, knowledgeable service provider.

Recognizing the responsibility as a steward of public funds, the Department provides numerous opportunities to improve management and monitoring of Crime Victim Funds awarded to grantees. Grantees can use a portion of their administrative funds, up to 5 percent of their total funding, to provide training and technical assistance. Further, the Department has given other grants specifically for training and technical assistance. For example, in 2015, State VOCA Victim Assistance agencies received a discretionary grant to be used for training. OVC recently posted a fiscal year 2018 solicitation (OVC fiscal year 2018 Discretionary Training and Technical Assistance Program for VOCA Victim Assistance Grantees) for a total of $12 million that makes training funds available to the State agencies again.

In addition, the Department facilitates training through the OVC Training and Technical Assistance Center. Cooperative agreements with partner organizations and grantees further assist the field in building its collective capacity to serve crime victims. The Department continues to build service capacity by offering a schedule of regional training and developmental support in critical areas such as needs assessment, program design, strategic planning, and evaluation. OVC continues to expand its outreach through in-person and Web-based trainings. OVC also manages State and national conference support programs that assist nonprofit organizations interested in hosting conferences on victim-related issues. Further, OVC operates a professional development scholarship program and maintains a speaker's bureau and a database of consultants who are available to support OVC's initiatives nationwide.

Question 13b. We have heard from victim service providers in California and elsewhere that providing "matching funds" for increased VOCA funds is a challenge and therefore prevents quality service providers from applying for funds.

What is the Department doing to expedite match waivers to ensure that victim service providers can apply for increased funds and provide important victim services?

Answer. OVC routinely receives requests for match waivers for the VOCA State Victim Assistance Formula Grant Program from State agencies. It reviews these requests promptly and frequently grants them. The waivers are typically processed within a few weeks of receipt.

Additionally, while many VOCA grant funds require a match by the subgrantee, there are many options available beyond a cash match. For example, in-kind and volunteer hours are options available to subgrantees in lieu of a cash match.

UNSUSTAINABLE PRISON COSTS

Question 14a. Mr. Sessions, your Department's Budget requests $8.5 billion for Prisons and Detention Operations, which represents nearly 30 percent of the Department's total budget.

Do you believe that the continued growth of prison and detention operations is sustainable going forward?

Answer. The Department will continue to monitor the inmate population level and work with the administration and Congress to ensure that BOP and USMS have adequate resources to continue to operate safe and secure facilities. To the extent this question is specifically directed for former Attorney General Sessions, it would be inappropriate for the Department to respond further.

Question 14b. You issued a charging memorandum to all Federal prosecutors, directing them to charge all of their cases with the most punitive chargeable offense. This change in policy takes discretion away from prosecutors, and I worry that it could lead to even higher prison costs in the future.

How do you expect that this recent policy change will affect future resource requirements for the Bureau of Prisons and Marshals Service?

Answer. The Department, BOP, and USMS continue to analyze the impacts of these policies. The Department will continue to monitor the inmate population level and work with the administration and Congress to ensure that BOP and USMS have adequate resources to continue to operate safe and secure facilities.

Over the past year, the USMS detention population has increased by approximately 5,631 prisoners or 10.4 percent, from 53,991 on February 7, 2018 to 59,622 on February 7, 2019. Based on the number of prisoners received and the increase in the detention population over the past year, the USMS expects the number of prisoners to continue to increase over the next 18–30 months.

The Department is monitoring these changes closely and is assessing what effect these changes may have on resource allocation. To the extent this question is specifically directed for former Attorney General Jeff Sessions, it would be inappropriate for the Department to respond further.

VICTIM REPORTING OF CRIMES IN THEIR COMMUNITIES

Question 15a. I have heard concerns from local police officers that witnesses of violent crimes, and victims themselves, are reluctant to come forward to assist in criminal investigations because of some of the rhetoric that the President and this administration have used with respect to the immigration status or religious affiliation of an individual.

What is your strategy to make sure that all witnesses and victims feel safe in reporting crimes?

Answer. Combating hate crimes is among the highest priorities for the Department of Justice and the Civil Rights Division. The Department is working with law enforcement and affected communities to investigate and prosecute bias-motivated violence. We are also working to improve our training and outreach regarding identification, reporting, investigations, prosecutions of hate crimes.

Last year, the FBI participated in numerous hate crime trainings and outreach events. The FBI also developed the National Training Initiative (NTI), which aims to strengthen civil rights education throughout the Nation by providing standardized training and materials that field offices may provide their law enforcement partners, non-governmental organizations (NGOs), and community groups. As part of the NTI, the FBI conducts hundreds of seminars, workshops, and training sessions for local law enforcement, minority and religious organizations, and community groups to promote cooperation, reduce civil rights abuses, and provide education about civil rights statutes.

Our U.S. Attorney's Offices have also engaged in direct outreach to affected communities so that community leaders and others know who in each office is responsible for carrying out the Department's commitment to fighting hate crimes.

Earlier this year, the National Institute of Justice (NIJ) at the Office of Justice Programs issued a solicitation for proposals for research and evaluation to fill gaps in hate crimes research. Applications were accepted through May 2018. NIJ made one award of $840,649 to the University of New Hampshire to conduct a national survey of hate crime incidents and victimization. The study will provide detailed data about hate crimes, analyze local policies that impact hate crime reporting, and identify successful investigation and prosecution strategies.

Additionally, the September 2017 issue of the Community Policing Dispatch, the e-newsletter by the Department's Office of Community Oriented Policing Services (COPS Office), consolidated some of COPS' most popular resources for combating bias-related crimes.

HUMAN TRAFFICKING AND INJUNCTION AUTHORITY

Question 16a. I want to congratulate the Department and all of its law enforcement partners for recently taking down Backpage, a website that has facilitated sex trafficking for years now. I have long urged the Department to act—and was pleased to hear about the recent takedown and guilty pleas.

While significant attention has been paid to the supply side of human trafficking (breaking up trafficking rings, monitoring websites like Backpage, and rescuing girls), I am concerned that we are still not doing enough to reduce the demand, and address the problem of trafficking over the Internet.

What is your strategy to address human trafficking over the Internet?

Answer. The Department shares your concern about human trafficking over the Internet. According to the 2017 Federal Human Trafficking Report prepared by the Human Trafficking Institute (available at https://www.traffickingmatters.com/wp-content/uploads/2018/05/2017-Federal-Human-Trafficking-Report-WEB-Low-Res.pdf), in 2017, the overwhelming majority (84.3 percent) of pending Federal criminal sex trafficking cases involved traffickers who used the Internet to advertise victims and solicit purchasers for commercial sexual services.

To address this, the Department is working in a variety ways to combat Internet-facilitated sex trafficking, including sex trafficking of minors and sex trafficking of adults by force, fraud, or coercion. Sex traffickers utilize the Internet and social media in multiple ways, not only to advertise victims to customers, but also to recruit and groom vulnerable victims, and to intimidate victims and witnesses in an effort to obstruct investigations and prosecutions of the traffickers' enterprises. Experience has demonstrated that traffickers utilize multiple websites and social media platforms for all of these wide-ranging recruitment, advertising, and witness intimidation tactics. The Department is actively working to combat all forms of Internet-facilitated sex trafficking. Its strategies include:

—proactive investigations and enforcement operations to disrupt sex traffickers' social media-based recruitment activities;
—intelligence-driven targeting, investigations, and enforcement operations to detect trafficking indicators in the context of Internet commercial sex advertising;
—proactive investigation of evolving trends in Internet commercial sex advertising, including migration of advertising activity to new platforms;
—prosecution of commercial sex purchasers;
—public awareness, prevention efforts, and innovative partnerships aimed at protecting at-risk populations including children in foster care, adults in drug rehabilitation facilities, and individuals with intellectual disabilities;
—intensive training of Federal, State, local, Tribal, and international law enforcement partners on advanced strategies for detecting, investigating, and prosecuting Internet-facilitated sex trafficking, including investigation and prosecution of purchasers, advertisers, and facilitators;
—financial investigations that trace the proceeds of sex trafficking and asset forfeiture to seize the proceeds of sex trafficking and remove the tools of the trade; and
—working with survivor advocates to develop victim-centered, trauma-informed strategies for identifying, stabilizing, and protecting victims to prevent re- victimization.

The Department's comprehensive approach brings prosecutorial, policy, and public awareness resources to bear and includes: consolidating, sustaining and better deploying existing online tools and intelligence aimed at identifying trafficking offenders and victims, including children in the foster care system and other at-risk individuals; augmenting and improving the efficiency of targeted operations aimed at

rescuing victims of sex trafficking and apprehending those who exploit them, including customers; targeting online advertisers who knowingly facilitate sex trafficking; using asset forfeiture to seize websites domains used to enable sex trafficking and take away the proceeds of sex trafficking; and supporting an awareness campaign that encourages the public to assist in interdicting these offenses.

Question 16b. I have worked on legislation to update trafficking laws to include civil injunction authority to allow DOJ to bring civil cases against traffickers to prevent them from trafficking young victims, will you commit to using such authority?

Answer. The Department will utilize all available tools to combat the scourge of human trafficking.

HUMAN TRAFFICKING AND RESTITUTION FOR VICTIMS

Question 17a. In a 2015 law review article, the Human Trafficking Pro Bono Legal Center reported on the low rates of restitution orders in human trafficking prosecutions. In a study of Federal human trafficking cases brought over a four period, Federal courts failed to order restitution in nearly two-thirds of cases involving sex trafficking offenses.

They also found that the victims least likely to obtain restitution orders were children trafficked in the sex industry. Less than one-in-three defendants who commit sex trafficking offenses against children were ordered to pay restitution to their victims.

Can you discuss your efforts to ensure that prosecutors are trained to ensure that trafficking victims' receive restitution?

Answer. As the NGO found, prosecutors requested restitution in 63 percent of human trafficking cases, while courts granted it in only 36 percent of cases. The Department remains committed to ensuring prosecutors are trained to seek restitution orders from courts on behalf of victims of human trafficking. In November 2016 and November 2017, the Department led human trafficking trainings at the National Advocacy Center for Federal prosecutors, which contained specialized segments that emphasized strategies for securing restitution orders. In 2018, the Department conducted trainings at the National Advocacy Center that included presentations on restitution and forfeiture in child exploitation cases. Additionally, restitution and forfeiture were addressed at the 2017 National Law Enforcement Training on Child Exploitation, which was attended by approximately 1,200 Federal, State, local, and Tribal personnel. Federal prosecutors and law enforcement participating in the Anti-trafficking Coordination Team (ACTeam) Initiative also received training on mandatory restitution as part of their Advanced Human Trafficking Training Program (AHTTP).

The Department includes presentations on enforcement of mandatory restitution provisions in multiple training events each year for Human Trafficking Task Forces, and Federal, State, local, and Tribal law enforcement partners and prosecutors. In March 2017, the Department held webinars entitled "An Overview of Restitution in Human Trafficking Cases" and "Common Obstacles to Obtaining Restitution in Human Trafficking Cases." Additionally, in November 2017, the U.S. Attorneys' Bulletin published an article entitled Mandatory Restitution: Complying with the Trafficking Victims Protection Act" and another entitled "Follow the Money: Financial Crimes and Forfeiture in Human Trafficking Prosecutions."

In 2018, the Department produced forthcoming web-based on-demand training resources accessible to Federal prosecutors nationwide to disseminate best practices in enforcing the TVPA's mandatory restitution provisions. Also in 2018, the Department created a working group to refine strategies for successfully enforcing the TVPA's mandatory restitution provision.

LAUNDERING MONEY THROUGH REAL ESTATE INVESTMENTS

Question 18a. Law enforcement have recently described ongoing investigations into foreign buyers who use shell companies to buy luxury real estate in America to launder money.

Can you describe whether this is a growing trend, how it is a growing trend, and whether you are concerned about this trend going forward?

Answer. The pervasive use of front companies, shell companies, nominees, or other means to conceal the true beneficial owners of assets is one of the greatest loopholes in this country's anti-money laundering (AML) regime. We consistently see bad actors using these entities to disguise the ownership of dirty money derived from criminal conduct.

The Financial Action Task Force's (FATF's) 2016 review of the United States' AML/counter-terrorist financing (CTF) system highlighted this issue as one of the

most critical gaps in the United States' AML regime.The result, FATF said, is that U.S. law enforcement authorities "must often resort to resource-intensive and time-consuming investigative and surveillance techniques." These techniques include grand jury subpoenas, witness interviews, or foreign legal assistance to unveil the true ownership of shell or front companies associated with serious criminal conduct. This process can sometimes take years, and, in some cases, law enforcement may never be able to determine the owners of illicit proceeds.

With respect to real estate more specifically, the Department's ongoing civil asset forfeiture action to recover more than a billion dollars allegedly stolen from the Malaysian sovereign wealth fund, 1MDB, highlights how bad actors may use shell companies to buy luxury properties in an effort to launder and hide their illegal gains. Our publicly filed complaints in that matter allege that in 2014, the co-conspirators misappropriated approximately $850 million in 1MDB funds and diverted it to several offshore shell entities. From there, the complaints allege, the funds stolen in 2014, in addition to money stolen in prior years, were used to purchase, among other things, high-end properties, as well as a 300-foot luxury yacht valued at over $260 million, certain movie rights, tens of millions of dollars of jewelry, and artwork. See also the response below regarding Geographic Targeting Orders.

Question 18b. What steps do you think law enforcement should take to address this growing trend?

Answer. The U.S. Department of the Treasury's (Treasury) Financial Crimes Enforcement Network (FinCEN) has issued and expanded Geographic Targeting Orders (GTOs) in recent years focusing on the real estate sector. The Department looks forward to learning more about the information gathered by FinCEN, as well as to discussions on whether additional steps may be warranted to address the money laundering risks emanating from this and other at-risk sectors. In addition, the Treasury's Customer Due Diligence Final Rule is a critical tool that will make it more difficult for criminals to circumvent the law. The Department looks forward to continued discussions with Treasury regarding the effects of the CDD Rule since its implementation this May.

Other steps are needed to ensure that criminals cannot hide behind nominees, shell corporations, and other legal structures to frustrate law enforcement. When law enforcement is able to obtain information on the identities of the persons who ultimately own or control these legal entities, it can better see the full network of criminal proceeds as bad actors try to move money through our financial system. With proper law enforcement access to beneficial ownership information, the Department could bring more cases, more quickly, with more impact.

Question 18c. What steps do you think lawmakers should take to address this trend?

Answer. The Department looks forward to continued discussions with its interagency partners, Congress, and industry members regarding stronger laws that target individuals who seek to mask the ownership of companies, accounts, and sources of funds.

QUESTIONS SUBMITTED BY SENATOR CHRISTOPHER A. COONS

Question 1a. On April 9, 2018, the F.B.I. executed searches of the office, residence, and hotel room of Michael Cohen. It has been reported that these searches and related investigation are being run out of the U.S. Attorney's Office for the Southern District of New York. During the hearing you indicated that you would recuse yourself from any involvement or oversight of this investigation if you learned of any connection to the matters you have already recused yourself from, namely any events surrounding the 2016 election.

Have you consulted with any career ethics officials at the Department of Justice to determine if your recusal is warranted in the ongoing Southern District of New York investigation into Mr. Cohen? Please provide the dates of these discussions.

Answer. This question calls for the personal knowledge of and is specifically directed to former Attorney General Jeff Sessions. As such, it would be inappropriate for the Department to respond to this question at this time.

Question 1b. Since the hearing, have you discovered any connection between the investigation into Mr. Cohen and Special Counsel Mueller's investigation that would cause you to recuse yourself?

Answer. Please see my response to Question 1a.

Question 2a. In your letter to President Trump dated May 9, 2017, recommending the firing of FBI Director Comey, you stated, "It is essential that this Department of Justice clearly reaffirms its commitment to longstanding principles that ensure the integrity and fairness of Federal investigations and prosecutions."

Do you agree with me that it would run counter to longstanding Department of Justice practices that ensure integrity and fairness of ongoing criminal investigations to discuss any aspect of an ongoing criminal investigation with anyone outside of the Department?

Answer. The Department's long-standing policy is to keep confidential all aspects of an ongoing investigation. Consistent with this well-established policy, the Department's longstanding practice is to decline to respond to all inquiries made during the pendency of a matter, as to disclose non-public information relating to an ongoing investigation would pose an inherent threat to the integrity of the Department's law enforcement and litigation functions.

Question 2b. Since the hearing, have you discussed the ongoing investigation into Mr. Cohen with the President or anyone outside of the Department of Justice?

Answer. This question calls for the personal knowledge of and is specifically directed to former Attorney General Jeff Sessions. As such, it would be inappropriate for the Department to respond to this question at this time.

Question 2c. Since the hearing, has the President or anyone in the administration discussed with you the possibility of President Trump pardoning Mr. Cohen?

Answer. Please see my response to Question 2b.

Question 2d. If you elect to not answer any of the questions above, as you did during the hearing, please cite the specific justification you are relying upon for your decision to not answer.

Answer. Please see my response to Question 2b.

Question 3a. The Violence Reduction Network (VRN) proved to be an effective program for cities like Wilmington, Delaware to address violent crime and to connect local police with cutting-edge law-enforcement resources. For example, the clearance rates on homicides in Wilmington jumped to the 50–54 percent range, from a 20 percent clearance rate prior to VRN.

Moving forward, what is the Department going to do for cities, like Wilmington, that made progress combatting violent crime with the help of the Federal Government now that its participation in the VRN program has ended?

Answer. The Department is continuing to provide training and technical assistance through the National Public Safety Partnership (PSP), administered by the Bureau of Justice Assistance (BJA). Twelve PSP sites were announced in June 2017, and the Department announced five PSP sites in August 2018.

Both the former VRN and current PSP engagements are time-limited. This is partially because both programs' goal is to develop locally based resources and create a sustainable and enduring capacity to combat violent crime at the local level. Nevertheless, the Department has many additional resources to offer jurisdictions in need of continuing support. For example, the Department offers a broad array of training, technical assistance, and grant programs to support State, local, and Tribal partners. BJA's National Training and Technical Assistance Center provides no-cost training and technical assistance on a wide- variety of criminal justice topics for criminal justice practitioners, agencies, elected officials, community organizations, and citizen advocates.

The BJA also provides training and technical assistance to eligible law enforcement agencies through the National Resource and Technical Assistance Center for Improving Law Enforcement Investigations on a wide range of topics that are directly related to improving investigatory practices. Through the Collaborative Reform Initiative for Technical Assistance, the Office of Community Oriented Policing Services provides tailored technical assistance and resources to State, local, Territorial, and Tribal law enforcement. This Initiative is conducted in collaboration with national law enforcement membership associations and facilitates State and local law enforcement trainings lead by experts in a range of public safety, crime reduction, and community policing topics.

Additionally, the Department has reinvigorated and recommitted to the Project Safe Neighborhoods (PSN) program, a nationwide violent crime reduction program that uses evidence-based practices, targeted enforcement, and community-based prevention programs to reduce violent crime alongside State, local, and Tribal law enforcement and the communities we serve.

Project Safe Neighborhoods (PSN) was originally created in 2001. Within the first 5 years of PSN's implementation, violent crime was reduced overall by 4.1 percent,

with reductions of up to 40 percent in certain areas. PSN is effective because it is an evidence-based program that strategically deploys resources consistent with the specific problems and needs of individual communities. One year into the commencement of PSN's reinvigoration and its success has already began. Public data from 60 major cities show that violent crime decreased by nearly 5 percent in those cities in the first 6 months of 2018 compared to the same period 1 year earlier. The Department is confident that the funding provided to PSN will directly lead further decreases in violent crime and ultimately increase the safety of Americans.

Question 3b. Can you commit to keeping critical staffing and resources in place in cities like Wilmington to ensure any recent improvements in metrics are preserved?

Answer. Reducing violent crime has been one of the top priorities of the Department. In support of this priority, the Department has redirected resources toward programs and positions that will strengthen our efforts to improve the safety of communities across the country. For example, the Department has expanded the Organized Crime and Drug Enforcement Task Forces (OCDETF) Program to support local gang investigations aimed at identifying connections between local gangs and drug trafficking organizations at the national-level. The Department has also prioritized the investigation and prosecution of the violent criminal members of MS–13 by designating MS–13 as a "priority organization" for its OCDETF Task Forces and by spearheading increased international coordination between domestic law enforcement and its partners in El Salvador, Honduras, and Guatemala. This prioritization and coordination has resulted in the arrest of thousands of MS–13 members and their affiliates.

The Department has also greatly increased the number of Federal prosecutors directed to focus on violent crime. In May 2018, the Department announced the creation of 311 new Assistant United States Attorney (AUSA) positions, the largest addition of Federal prosecutor positions in decades. Of these new positions, 190 AUSAs across the country will focus on violent crimes. This announcement follows the creation of 40 additional AUSA positions in 27 locations across the country in December 2017. All 40 of these previously created positions are directed to focus on violent crime.

In addition to expanding the Department's own programs and staffing, the Department continues to provide critical resource support to State, local, and Tribal law enforcement partners. In fiscal year 2017, the Department awarded over $207 million in grants to support State, local, and Tribal law enforcement, and violent crime reduction efforts across the country. These grants provided funding to hire additional officers, promote community policing, create additional Crime Gun Intelligence Centers, enhance law enforcement technology and information sharing, reduce the backlogs of DNA evidence in crime labs, and provide needed training and technical assistance. These measures will help ensure that every district, including the District of Delaware, has access to the resources, technology, and training they need to be successful.

The Department's National Institute of Justice (NIJ) is funding research to continue development and improvement of violence reduction strategies at the State and local levels. This includes research and evaluation of strategies to reduce street gangs and gang violence, gun violence, and persistent violence in communities.

Question 4a. Last month, there were several news reports that Ezra Cohen-Watnick, who formerly worked at the White House National Security Council, was hired at the Department of Justice to serve as your national security adviser.

Was Mr. Cohen-Watnick hired to serve as your national security advisor?

Answer. Mr. Cohen-Watnick is not a current employee of the Department of Justice.

Questions 4b. Given Mr. Cohen-Watnick's prior involvement with matters involving Congressman Nunes, has Mr. Cohen-Watnick recused himself, like you have, from any involvement in the ongoing Special Counsel's investigation?

Answer. Mr. Cohen-Watnick is not a current employee of the Department of Justice.

Question 4c. Has Mr. Cohen-Watnick consulted with any career ethics officials at the Department of Justice to determine if his recusal is warranted? Please provide the dates of these discussions.

Answer. Mr. Cohen-Watnick is not a current employee of the Department of Justice.

Question 5a. Former F.B.I. Director Comey has testified that, on several occasions, President Trump went outside traditional Department of Justice policies and channels to directly ask the director about ongoing F.B.I. investigations.

What have you done to ensure that the President and other White House officials use established channels and do not take actions that may violate existing policies and/or seek to influence ongoing investigations?

Answer. While the Department cannot speak to the specific event referenced in your question as it calls for the personal knowledge of former Attorney General Jeff Sessions, the Department of Justice is governed by procedures that place limits on the communications between the White House and the Department concerning ongoing investigations, criminal prosecutions, and civil litigation. The Department is committed to ensuring the integrity of its investigations, prosecutions, and litigation and strives to prevent undue political influence or the appearance thereof from compromising its core functions.

QUESTIONS SUBMITTED BY SENATOR CHRIS VAN HOLLEN

REPEAL OR MODIFICATION OF SPECIAL COUNSEL REGULATIONS

Question 1a. What is the Department of Justice's position on whether the Administrative Procedure Act's rulemaking requirements for public notice and comment apply to the regulations governing the special counsel—28 CFR part 600?

Answer. When the current regulations in Part 600 of 28 C.F.R. were promulgated as a final rule, they were not subjected to notice-and-comment rulemaking. The Department identified several reasons why the usual requirements of the Administrative Procedure Act (APA) for prior notice and public comment were inapplicable. See 64 Fed. Reg. 37,038, 37,041 (July 9, 1999).

Question 1b. Do you have the authority to repeal or modify the special counsel regulations unilaterally?

Answer. The current regulations were promulgated by the Attorney General as an exercise of his authority to, among other things "prescribe regulations for the government of his department, the conduct of its employees, [and] the distribution and performance of its duties." 5 U.S.C. §301; see also 28 U.S.C. §509 (vesting in the Attorney General nearly all functions of officers, employees, and agencies of the Department of Justice); 28 U.S.C. §510 (authorizing the Attorney General to "make such provisions as he considers appropriate authorizing the performance by any other officer, employee, or agency of the Department of Justice of any function of the Attorney General"). Consistent with the above listed statutory authority and the APA, the special counsel regulations may be repealed or amended by the Attorney General.

Question 1c. Does your recusal from "campaign-related matters" prohibit you from repealing or modifying the special counsel regulations?

Answer. This question calls for the personal knowledge of and is specifically directed to former Attorney General Jeff Sessions. As such, it would be inappropriate for the Department to respond to this question at this time.

Question 1d. Does the president have the authority to repeal or modify the special counsel regulations unilaterally?

Answer. Please see my response to Question 1b.

Question 1e. Could you, or another administration official, unilaterally repeal or modify the provision stipulating that the Attorney General may only remove a special counsel for "misconduct, dereliction of duty, incapacity, conflict of interest, or for other good cause, including violation of Departmental policies"?

Answer. Please see my response to Question 1b.

Question 1f. Could you, or another administration official, unilaterally change who has the authority to remove the special counsel?

Answer. Please see my response to Question 1b.

SUBCOMMITTEE RECESS

The subcommittee now stands adjourned.

[Whereupon, at 4:48 p.m., Wednesday, April 25, the subcommittee was recessed, to reconvene subject to the call of the Chair.]

Exhibit 20

Vox

People are lining up to grow marijuana for research. Trump's Justice Department won't let them.

The Trump administration has resisted Obama-era reforms to allow more marijuana growing for research.

By German Lopez | @germanrlopez | german.lopez@vox.com | Mar 26, 2019, 8:30am EDT

Saeed Khan/AFP via Getty Images

George Hodgin is ready to go. The moment he gets approval from the federal government, his company is ready, he said, to produce high-quality marijuana for research — and nearly two dozen university researchers are on board to buy it for studies that could help fill the surprisingly large void in what we know about marijuana's benefits and harms.

There's just one problem: The US Department of Justice won't give him the approval he needs to start producing weed. So the researchers clamoring for access to marijuana — to finally learn more about the drug's effects — can't get it, even as states move to legalize pot.

"We only want to provide clean, consistent, compliant cannabis for researchers," Hodgin, CEO of the California-based Biopharmaceutical Research Company, told me. "We're sitting on one of the most sophisticated cannabis production facilities in the United States. And

it's empty, because the federal government is playing politics with something that is apolitical."

Marijuana is already legal for recreational and medical purposes under **10 states' laws** and legal only for medical uses under **22 additional states' laws**. But it remains illegal **under federal law**, so researchers aiming for any federal funding or tied to a federally funded institution (including all major research universities) face big legal barriers if they want to study the drug.

For years, the federal government has allowed one approved grower, at the University of Mississippi, to supply weed to researchers who make it through an arduous application process. But the quality of this marijuana is terrible — it **looks more like oregano than pot**. Researchers have demanded higher-quality options for years.

That's where Hodgin could come in. He and dozens of others applied under a **new federal program**, started under the Obama administration, that was supposed to get more federally approved growers for marijuana research.

Then Donald Trump won the 2016 election, and appointed Jeff Sessions, who vehemently opposes marijuana legalization, to head the Justice Department as attorney general. After that, the program **seemed to stall**: A former Drug Enforcement Administration (DEA) official who worked on the research program told me his agency was ready to move forward, but it couldn't without approval from the Justice Department. Sessions and his staff seemingly weren't willing to take any proactive steps that could in any way be seen as pro-marijuana.

After Sessions resigned last November, there was some hope that the program would move forward. But so far, that hasn't happened.

Asked about the program, Justice Department spokesperson Wyn Hornbuckle said he had "[n]o updates on this at the moment." DEA spokesperson Rusty Payne said that his agency is "still working through the process with the Department."

So people like Hodgin have been left waiting for years, ready to grow marijuana for research but without the federal approval needed to do so.

"I feel like the government I fought to protect doesn't understand the urgency of this problem," Hodgin, a retired Navy SEAL who served in Afghanistan and Southeast Asia, said.

"My story should be the American dream: A Navy SEAL uses the GI Bill to get a graduate education and start a company that helps Americans and creates jobs. But sadly, the DOJ and DEA are playing politics with science and lives, and instead big government inertia and red tape are blocking critical research."

We know surprisingly little about marijuana

People have been using marijuana for thousands of years, but we still don't know a lot about it.

In 2017, the National Academies of Sciences, Engineering, and Medicine published the **best review of the research** on marijuana to date. Combing through more than 10,000 studies published since 1999, the review by a dozen-plus experts provided the clearest look at the scientific evidence on marijuana yet.

The review did find *some* research. It suggested that there's promising evidence for marijuana's use for chronic pain, multiple sclerosis, and cancer patients. But the review also found that marijuana may pose risks for respiratory problems if smoked, **schizophrenia and psychosis**, car crashes, lagging social achievement in life, and perhaps pregnancy-related problems.

But above all, the National Academies said that the evidence to date is weak and more good research is needed — warning that "conclusive evidence regarding the short- and long-term health effects (harms and benefits) of cannabis use remains elusive."

The review blamed the lack of good research largely on government policies — particularly regulatory barriers linked to cannabis's federal classification as a **highly restricted schedule 1 substance** — that make it difficult to conduct good studies on the drug. It noted, for one, that researchers "often find it difficult to gain access to the quantity, quality, and type of cannabis product necessary to address specific research questions."

The National Academies called for these barriers to be cut down and more research to be funded so we can learn more about marijuana. It's an especially pertinent call today — as states move to legalize marijuana for medical and recreational purposes and presidential candidates **join the calls for legalization**.

"The National Academies of Sciences, as well as scientists and researchers themselves, have repeatedly stressed that they need a greater diversity of research-quality cannabis,"

Hodgin said. "There shouldn't be a government monopoly on something that's so important."

The government makes researching marijuana difficult

Under federal law, marijuana remains illegal. And as a schedule 1 substance, the federal government doesn't acknowledge *any* safe use of marijuana — medical or otherwise.

But the federal government has historically allowed research on marijuana. As part of the process, researchers have to **get several approvals from multiple federal agencies** just to study cannabis. Once researchers clear those hurdles, they get the aforementioned weed from the University of Mississippi.

The quality of this marijuana is terrible. Not only does it *look* bad, but as **Christopher Ingraham and Tauhid Chappell reported at the Washington Post**, the pot appears to have less THC (the main psychoactive compound in marijuana) than claimed, and it has high mold and yeast levels. With quality this bad, it's hard for researchers to draw conclusions about pot's effects, especially in comparison to the higher-quality weed that people use in the real world.

The DEA, under the Obama administration in 2016, moved to allow more growers for marijuana research. The agency **explained**: "Based on discussions with [the National Institute on Drug Abuse] and [the Food and Drug Administration], DEA has concluded that the best way to satisfy the current researcher demand for a variety of strains of marijuana and cannabinoid extracts is to increase the number of federally authorized marijuana growers." So it implemented a new policy to let more people, like Hodgin, apply to grow cannabis.

The DEA seemed fairly ambitious in its approach. It noted that this policy could not only allow more research into marijuana, but if the findings were positive and pharmaceutical companies therefore pursued marijuana-based products, the new policy would give them a federally legal supply of weed they didn't have before.

In politics, the prospect of more research on marijuana is typically uncontroversial. Democratic senators like Brian Schatz (HI) and Amy Klobuchar (MN) and Republican senators like Chuck Grassley (IA) and Cory Gardner (CO), for example, have **pushed for the DEA's new policy**.

But Sessions, who **once said that "good people don't smoke marijuana"** and **tried to wage a war against marijuana legalization as attorney general**, argued that approving more cannabis researchers could violate international anti-drug treaties. As **Mike Riggs noted at Reason**, this is almost certainly untrue — given that countries like the UK and Israel, which are signatories of the same treaties, have allowed plenty of marijuana research within their borders. The former DEA official I spoke to called Sessions's claim "bullshit," pointing out that the DEA's legal experts reached the opposite conclusion before Sessions intervened.

The argument, however, seemed to give Sessions and the Justice Department the cover they needed internally to oppose allowing more growers for research.

With Sessions gone from the Justice Department, and **William Barr recently replacing him**, that could change. Barr opposes legalization, but he nonetheless **told the US Senate** that he supports allowing more research.

Yet so far, there hasn't been any noticeable movement. So people like Hodgin, ready to do the work to get more marijuana out there for research, are left waiting.

"I've been shocked and disheartened that the government isn't representing the will of the people," Hodgin said. "Democrats and Republicans have both argued the need for more marijuana to be produced for research. Why would [the Justice Department] ignore them?"

Pod Save America's Dan Pfeiffer on Joe Biden, beating Trump, and saving democracy

READ MORE »

Exhibit 21

ORAL ARGUMENT NOT SCHEDULED

No. 19-1120

IN THE

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

In re Scottsdale Research Institute, LLC,

Petitioner

_____

ON PETITION FOR A WRIT OF MANDAMUS TO WILLIAM P. BARR, U.S. ATTORNEY GENERAL, UTTAM DHILLON, ACTING ADMINISTRATOR OF THE U.S. DRUG ENFORCEMENT ADMINISTRATION, AND THE U.S. DRUG ENFORCEMENT ADMINISTRATION

Amended Petition for a Writ of Mandamus

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Scottsdale Research Institute, LLC

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Federal Cases

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* Authorities upon which we chiefly rely are marked with asterisks.

Federal Statutes

Regulatory Materials

Other Authorities

GLOSSARY

APA	Administrative Procedure Act
CSA	Controlled Substances Act
DEA	U.S. Drug Enforcement Administration
Decl.	Declaration of Suzanne Sisley, M.D.
DOJ	U.S. Department of Justice
Ex.	Exhibit (Appendix)
FDA	U.S. Food and Drug Administration
HHS	U.S. Department of Health and Human Services
MAPS	Multidisciplinary Association for Psychedelic Studies
NIDA	National Institute on Drug Abuse
PTSD	Post-Traumatic Stress Disorder
SRI	Scottsdale Research Institute, LLC

PRELIMINARY STATEMENT

Dr. Sue Sisley did everything by the book. Over the course of a decade, she ran the regulatory gauntlet, earning the blessing of four federal agencies so that she could do groundbreaking clinical research into the efficacy of cannabis to treat veterans suffering from treatment-resistant post-traumatic stress disorder ("PTSD")—some of whom turn to suicide. Through her company, Scottsdale Research Institute, LLC ("SRI"), the Petitioner in this case, she wants to continue that research and investigate other potential applications for cannabis. But poor-quality government cannabis is preventing that from happening.

To comply with federal law, SRI must use federally-sourced cannabis, grown exclusively on a single 12-acre farm run by the University of Mississippi. SRI used this cannabis for its Phase II trials. It arrived in powdered form, tainted with extraneous material like sticks and seeds, and many samples were moldy. Whatever reasons the government may have for sanctioning this cannabis and no other, considerations of quality are not among them. It is not suited for any clinical trials, let alone the ones SRI is doing. Simply put, this cannabis is sub-par.

Thirty months ago, Sisley thought she had a fix. After the Drug Enforcement Administration ("DEA") announced a new policy designed to increase the number of entities permitted to manufacture cannabis for clinical trials and other research endeavors, SRI applied to grow cannabis for its clinical research. Allowing SRI to grow its own cannabis will improve drug quality and give it tighter control over dosages. But the agency has yet to respond. With new trials around the corner, SRI can wait no longer.

And it shouldn't have to. Before Sisley submitted SRI's application, Congress amended the Controlled Substances Act ("CSA") to address this problem. As part of the "Improving Regulatory Transparency for New Medical Therapies Act," it added a requirement that the Attorney General, upon receiving an application to manufacture a Schedule I substance for use only in a clinical trial, publish a notice of application not later than 90 days after accepting the application for filing. 21 U.S.C. § 823(i)(2).

That date was more than two years ago.

Thus, agency action has been unlawfully withheld. And in view of an express directive to prioritize applications relating to clinical research, agency action has most certainly been unreasonably delayed.

To determine whether to issue a writ of mandamus to compel agency action, this Court applies the six-part "*TRAC*" standard. This case passes

the test: the agency has flouted a non-discretionary deadline to complete a perfunctory—but vitally important—task; significant economic interests and human health and welfare are at stake; it cannot be said that expediting delayed action will interfere with agency activities of a higher or competing priority; and mandamus is warranted regardless of the purity of the motives underlying DEA's unexplained delay.

SRI turns to this Court having exhausted all other avenues of relief. Sisley reached out to the agency no fewer than five times, the media has done a full-court press, and the number of letters from frustrated members of Congress from both parties imploring the agency to act is quickly approaching a dozen. At this juncture, nothing short of a writ from this Court compelling the agency to act will stop the ongoing harm caused by DEA's unlawful and unreasonable delay.

RELIEF SOUGHT

SRI seeks a writ of mandamus directing the Attorney General, DEA, or its Acting Administrator to issue a "notice of application" by 90 days from the date of service of this amended petition or fifteen days after the writ issues, whichever is later.

JURISDICTIONAL STATEMENT

This petition arises under the Administrative Procedure Act ("APA"), 5 U.S.C. §§ 555(b), 702, and 706(1). DEA's failure to issue a notice of SRI's application is agency action both unlawfully withheld and unreasonably delayed.

The Controlled Substances Act, 21 U.S.C. § 801 et seq., authorizes direct review in this Court of all final determinations, findings, and conclusions of the Attorney General or agency decisions, *id.* § 877. Because agency delay can thwart judicial review, this Court may resolve claims of unreasonable delay "to protect its future jurisdiction." *Telecomms. Research & Action Ctr. v. FCC*, 750 F.2d 70, 76 (D.C. Cir. 1984) ("*TRAC*"); *Gottlieb v. Pena*, 41 F.3d 730, 734 (D.C. Cir. 1994). "Were it otherwise, agencies could effectively prevent judicial review of their policy determinations by simply refusing to take final action." *Cobell v. Norton*,

240 F.3d 1081, 1095 (D.C. Cir. 2001). Finally, the All Writs Act, 28 U.S.C. § 1651(a), permits this Court to issue writs of mandamus to cure unreasonable delay. *TRAC*, 750 F.2d at 75.

ISSUE PRESENTED

After DEA announced a new policy designed to increase the number of entities permitted to manufacture cannabis for clinical trials and other research endeavors, SRI applied to manufacture cannabis to support its own FDA-approved clinical trials. Yet thirty months have passed since SRI filed its application, and the agency has done nothing.

Thus, SRI's petition presents two questions:

1. Has the DEA unlawfully withheld or unreasonably delayed agency action under 5 U.S.C. § 706(1)? and
2. Should this Court issue a writ of mandamus under 28 U.S.C. § 1651(a) to compel the agency to issue the statutorily required notice?

STATEMENT OF THE CASE

The CSA regulates the production, possession, and distribution of controlled substances. *See* 21 U.S.C. § 801 et seq. It contains five schedules of drugs, based on their accepted medical uses, their potential for abuse, and their psychological and physical effects on the body, with Schedule I being the most restrictive. *Gonzales v. Raich*, 545 U.S. 1, 13-14 (2005). Schedule I substances cannot be used, except in research. *See id*. at 14.

When Congress enacted the CSA in 1970, it made cannabis a Schedule I drug. *Id*. It did so based, in part, on a recommendation from the Assistant Secretary of the U.S. Department of Health, Education, and Welfare that cannabis be placed in Schedule I "at least until the completion of certain research." *Id*.

Although the CSA provides a mechanism to administratively reschedule cannabis without legislative intervention, *see* 21 U.S.C. § 811, neither DEA nor the Attorney General has ever exercised that prerogative. In fact, DEA repeatedly rejects requests to reschedule. Most recently, in August 2016, it denied a petition from the states of Rhode Island and Washington. *See* Ex. 16 (A157). The agency's rationale for refusing to reschedule is always the same: the dearth of clinical trials demonstrating

cannabis's medical efficacy. *See, e.g.*, *id.* at A154. ("[T]here are no adequate and well controlled studies proving efficacy.").

I. Through a "closed" regulatory regime, DEA tightly controls clinical research with controlled substances.

a. Registration framework.

The CSA establishes a "closed" registration system. *Raich*, 545 U.S. at 13. Manufacture and distribution may occur only among registered handlers of controlled substances, referred to as "registrants." *See id.*; 21 C.F.R. § 1300.02(b) (2017). Thus, anyone seeking to manufacture or distribute a controlled substance must apply to DEA. 21 U.S.C. § 822(a)(1). DEA grants a registration if it determines that doing so is consistent with (1) the public interest and (2) U.S. obligations under the Single Convention on Narcotic Drugs, 1961. *Id.* § 823(a).

DEA has promulgated rules and regulations to implement these registration requirements. *See id.* § 821. 21 C.F.R. § 1301.13 (2014), for example, establishes application fees. Section 1301.14(c) explains how DEA processes applications:

> Applications submitted for filing are dated upon receipt. If found to be complete, the application will be accepted for filing. Applications failing to comply with the requirements of this part will not generally be accepted for filing. In the case of minor defects as to completeness, the Administrator may accept the application for filing with a request to the applicant for additional information. A defective application will be returned

> to the applicant within 10 days following its receipt with a statement of the reason for not accepting the application for filing. A defective application may be corrected and resubmitted for filing at any time; the Administrator shall accept for filing any application upon resubmission by the applicant, whether complete or not.

21 C.F.R. § 1301.14(c) (2010).

DEA's authority over the registration process is not without limits. For example, the agency must register only the number of bulk manufacturers of a Schedule I or II substance necessary to "produce an adequate and uninterrupted supply of these substances under adequately competitive conditions for legitimate medical, scientific, research, and industrial purposes." 21 U.S.C. § 823(a)(1); 74 Fed. Reg. 2,101, 2,127-2,130 (Jan. 14, 2009) (discussing section 823(a)(1)). From the time it was passed in 1970 until 2015, however, the CSA placed no deadlines on DEA's duty to process applications to manufacture controlled substances.

b. Delays in processing applications and scheduling.

Without deadlines, DEA could delay processing applications—even those seeking to facilitate clinical research—for years, with little recourse available to the applicant. These delays can be detrimental to innovation and public health, and they began to cause problems as the CSA moved into the 21st century.

The cases of Belviq and Fycompa are illustrative. *See generally Eisai, Inc. v. FDA*, 134 F. Supp. 3d 384, 387 (D.D.C. 2015) (chronicling the two drugs' stories). The U.S. Food and Drug Administration ("FDA") approved Belviq in June 2012, but the U.S. Department of Health and Human Services ("HHS") recommended the drug for scheduling. With no timetable governing its review, DEA took another year to approve the drug's placement in Schedule IV, delaying its entry into the market. *Id.* at 389. The story with Fycompa, a drug used to treat seizures in patients suffering from epilepsy, is largely the same. *See id.* In fact, the agency's fourteen-month delay led Eisai to seek mandamus from this Court.[1]

Problems with delay were felt all-around, including with controlled substances like cannabis. In one notable instance, an applicant waited more than three years after applying before the agency responded, proposing a denial. *Craker v. DEA*, 714 F.3d 20-21 (1st Cir. 2013). The saga spanned an entire decade, start to finish. *Id.* at 29.

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[1] Eisai filed a petition in this Court on August 13, 2013. *See In re Eisai Inc.*, No. 13-1243, Doc. 1452261 (D.C. Cir.). Eisai argued that DEA's failure to timely schedule Fycompa was unreasonable and asked the Court to intervene. DEA responded that it expected to act by the end of October. *Id.* at Doc. 1454740. Then, through an October 17, 2013 notice, DEA informed the Court that the rule was submitted for publication in the Federal Register. The Court denied the mandamus petition the next week. *Id.* at Doc. 1462438.

c. Congress adds statutory deadlines to address opaqueness and delay in DEA's processing of a single class of applications: those seeking to manufacture for clinical trials.

In 2015, Congress passed the "Improving Regulatory Transparency for New Medical Therapies Act," H.R. No. 639, Pub. L. No. 114-89, 129 Stat. 703 (2015). Relevant here, the Act added section 823(i)(2), which requires the Attorney General to notice applications to manufacture Schedule I substances for clinical research not later than 90 days after the application is "accepted for filing":

> For purposes of registration to manufacture a controlled substance under subsection (a) for use only in a clinical trial, the Attorney General shall, in accordance with the regulations issued by the Attorney General, issue a notice of application not later than 90 days after the application is accepted for filing. Not later than 90 days after the date on which the period for comment pursuant to such notice ends, the Attorney General shall register the applicant, or serve an order to show cause upon the applicant in accordance with section 824(c) of this title, unless the Attorney General has granted a hearing on the application under section 958(i) of this title.

21 U.S.C. § 823(i)(2).

The purpose of the amendment was clear: to improve transparency and to prioritize applications relating to clinical research. In a section titled "Background and Need for Legislation," the House Report underscores three needs triggering the new "timetable": (1) addressing "[i]nconsistency and lengthy review times at DEA," (2) distinguishing between

"manufacturing of a controlled substance *for marketing* and the manufacturing of a controlled substance *for use in clinical trial*," and (3) putting in place a "*transparent process* for the applicant to determine the reasons for a delay in the application." Ex. 18 at A168-69 (emph. added).

II. SRI falls within the class of researchers Congress sought to protect from delay.

SRI is an Arizona company dedicated to clinical research. To date, it is the only entity federally approved to do clinical research into the effects of cannabis on veterans with treatment-resistant PTSD. SRI does not encourage or sanction recreational cannabis use, but it does support research to determine the applicability of cannabis as medicine. *See* Decl. at ¶ 2.

The journey of SRI's principal, Dr. Sue Sisley, is well-documented. Over a decade ago, she treated veterans with PTSD in her private practice. Sisley prescribed approved medicines on the market, but discovered that for some, none helped. Many clients disclosed that cannabis worked better. For some, it was the only thing that worked. These experiences inspired her to do clinical research into the safety and efficacy of cannabis with veterans suffering from PTSD. *See* Decl. at ¶¶ 7-11.

Little did she know how difficult it would be. Start to finish, it took her *seven* years to amass the necessary approvals just to *begin* the study.

Unlike other controlled substances, clinical research with cannabis requires obtaining approval from four federal agencies, on top of Institutional Review Board approval. *See* Decl. at ¶¶ 8-19 & n.8 (discussing CNN's Weed 3 documentary); *see also* Ex. 21 (A179) (Rolling Stone article titled "Why Is It So Hard to Study Pot?"). She put together a protocol in 2009, which the FDA approved in 2011. Over the next three years, Sisley secured the approvals of the United States Public Health Service and the National Institute on Drug Abuse ("NIDA"), which was necessary to acquire cannabis for the study. Finally, after other significant setbacks, she obtained a Schedule I research license from DEA in April 2016. Only after obtaining these approvals could the research proceed. *See* Decl. at ¶¶ 12-18.

In January 2017, SRI, with the support of the Multidisciplinary Association for Psychedelic Studies ("MAPS"), began its triple-blind clinical study of smoked whole-plant cannabis to treat PTSD symptoms in veterans. A $2.1 million grant to MAPS from the Colorado Department of Public Health and Environment funded the study. Phase II trials[2] finished in

[2] Phase II trials aim to determine if a treatment works, and usually involve 25 to 100 study subjects. Phase III trials compare the safety and effectiveness of a drug against other treatments and involve far more study subjects.

February 2019. *See* Decl. at ¶ 19. As we next explain, however, low-quality government cannabis hampered the research.

Additional trials with veterans are imminent. SRI also hopes to begin clinical trials to assess the efficacy of cannabis to treat breakthrough pain in cancer patients soon. *See* Decl. at ¶ 26.

III. The current supply of federally legal cannabis stifles clinical research.

a. The NIDA monopoly.

For almost 50 years, the only legal source of cannabis for research in the United States has been a single farm at the University of Mississippi. *See generally Craker*, 714 F.3d at 20 (1st Cir. 2013); Ex. 16 at A158 (81 Fed. Reg. 53,846) ("For nearly 50 years, the United States has relied on a single grower to produce marijuana used in research.").

The quality of the cannabis from this farm—and its delivery logistics—are poor. Some has languished on the shelves for years. It looks more like green talcum powder than medical grade cannabis, Decl. at ¶ 21 & n.11:

Most samples SRI received contained extraneous plant material like sticks and seeds. Ex. 14 at A149-A152 (Lab Report). Others had mold. *See id.* at A146. Also, the government demands researchers indemnify the government to use this study drug, *see* Decl. at ¶22:

SRI complies with federal law, so it had to use this cannabis. Unfortunately, its poor quality undermined results. For example, Sisley observed that sticks and seeds caused bronchial irritation in some subjects. Decl. at ¶ 23. SRI is reticent to indemnify the government, especially because it has told the government it is willing and able to manufacture its own, on-site, high-quality, fresh cannabis under the agency's strict regulations and supervision. *See id.* at ¶ 24. This cannabis is inadequate for a third important reason: Phase III trials require cannabis virtually identical to material used in proposed pharmaceutical medicine. *See id.* at ¶ 25.

Now, SRI looks north of the border for true medical-grade cannabis, because the cannabis from NIDA falls short. *See id.* at ¶ 26.

b. To address supply issues, DEA solicits applications to register additional manufacturers of cannabis for clinical research.

On August 12, 2016, DEA denied a petition from Rhode Island and Washington to reschedule cannabis as a Schedule I substance. Ex. 15 (A153) (81 Fed. Reg. 53,687 (Aug. 12, 2016)). But it also committed to improving the supply of cannabis suitable for clinical research.

DEA explained: "the available evidence is not sufficient to determine that marijuana has an accepted medical use" and "more research is needed into marijuana's effects, including potential medical uses for marijuana and its derivatives." *Id.* at A155 (81 Fed. Reg. at 53,689). In the letter accompanying the denial, DEA declared "[r]esearch . . . the bedrock of science," and committed to "support and promote legitimate research regarding marijuana and its constituent parts." Ex. 22 at A194.

Consistent with that goal, DEA issued a separate notice announcing a new policy to increase the number of entities registered to manufacture cannabis. Ex. 16 (A157) (81 Fed. Reg. 53,846 (Aug. 12, 2016)). DEA declared its "full[] support" of cannabis research and "concluded that the best way to satisfy the current researcher demand for a variety of strains of

marijuana and cannabinoid extracts is to increase the number of federally authorized marijuana growers." *Id.* at A158.

c. Answering DEA's call, SRI applies to manufacture cannabis for its clinical research.

Shortly after DEA's August 2016 policy statement, SRI applied to manufacture cannabis to support its clinical research. Ex. 1 (A001) (Oct. 2016 Application); Decl. at ¶ 27. Weeks later, Sisley answered a supplemental questionnaire the agency had remitted. Ex. 2 (A005) (Questionnaire); Decl. at ¶ 28. Asked how cannabis grown by SRI would be used, Sisley stated that the existing supply was not adequate for its clinical trials:

> [SRI] is preparing for phase 3 FDA approved drug development clinical trials with cannabis. Our ultimate goal involves evaluating whether cannabis can be turned into a prescription medicine. The only way to conduct this analysis is through phase 3 trials. However the current supply of research cannabis from cannot be utilized for prescription drug development. It can only be used for academic research. Which is why we are seeking to cultivate a new supply of cannabis to be used for these Phase 3 FDA trials.

Ex. 2 at A011. Sisley also told DEA that SRI could supply other clinical trials in the future. *See id.* at A008, 010, 012.

d. After soliciting applications, DEA processes none of them.

The number of applications the agency has processed since August 2016 is zero.

This delay is unusual, unprecedented even. The typical time from application submission to a notice in the Federal Register is months, not years. A 2016 DEA presentation says the process takes *as much* as 4-6 months to complete. Ex. 3 at A083 (DEA Presentation). DEA routinely processes applications within this timeframe:

- On December 12, 2018, Siemens Healthcare Diagnostics Inc. applied to be a bulk manufacturer of Ecgonine, a Schedule II substance. A notice in the Federal Register followed on March 21, 2019. 84 Fed. Reg. 10,534.
- On October 12, 2018, Johnson Matthey Inc. applied to be a bulk manufacturer of Schedule I and II substances. A notice in the Federal Register followed on February 21, 2019. 84 Fed. Reg. 5,477.
- On August 22, 2018, Insys Manufacturing, LLC applied to be a bulk manufacturer for Marijuana and Tetrahydrocannabinols to produce synthetic ingredients for product development and distribution to customers. A notice in the Federal Register followed on March 21, 2019. 83 Fed. Reg. 54,611.

The agency approved eight applications in September 2017, *see* 82 Fed. Reg. 44,842 (Sept. 26, 2017), and seven more in May 2018, *see* 83 Fed. Reg. 22,518 (May 15, 2018). In short, these applications do not take years to process.

e. Substantial efforts to obtain agency action without Court intervention have failed.

Sisley has repeatedly reached out to DEA to check the status of SRI's application. *See, e.g.*, Ex. 13 (A139) (Aug. 30, 2018 e-mail); *see also* Decl ¶¶ 30-31. Every time, the message is the same: no progress.

This unusual delay has sparked media attention. *See, e.g.*, Ex. 19 (A170) (article titled "Marijuana-Research Applications Go Nowhere at Justice Department"); Ex. 20 (A174) (article titled "Justice Department at Odds with DEA on Marijuana Research, MS-13" explaining how government officials were "sitting on" applications and that DOJ "effectively shut down" the program). Members of Congress from both sides of the aisle have repeatedly asked the Attorney General and DEA for status updates:

- **April 12, 2018:** former Senator Hatch and Senator Harris ask for an update on applications to manufacture cannabis for research and a commitment to resolve outstanding applications by August 11, 2018. Ex. 5 (A107).
- **July 25, 2018:** a bipartisan group of eight senators inquire about the status of the applications and request answers by August 10. Ex. 9 (A124).
- **August 30, 2018:** a bipartisan group of congressmen write to the Secretary of Veterans Administration about the need to conduct "a rigorous clinical trial into the safety and efficacy of medicinal cannabis for veterans with post-traumatic stress disorder (PTSD) and

chronic pain so that we can better understand the potential benefits or dangers of medicinal cannabis." Ex. 6 (A112).

- **August 31, 2018:** another bipartisan group of congressmen urge DEA to end the delay. Ex. 7 (A115).
- **September 28, 2018:** another bipartisan group of fifteen congressmen express concern over DEA's delay. Ex. 8 (A119).
- **March 28, 2019:** Senators Schatz and Booker urge the Attorney General to move forward. Ex. 10 (A128).
- **April 2, 2019:** another bipartisan group of six senators question DEA's efforts to process applications. Ex. 11 (A131).
- **May 7, 2019:** another bipartisan group of *thirty* congressmen urge the agency to do more "because the matter is of such importance." Ex. 12 (A135).

To SRI's knowledge, neither the Attorney General nor DEA has responded to *any* of these inquiries. In fact, as of December 28, 2018, DEA reported that it "continues to review applications for registration . . . ." 83 Fed. Reg. 67,348, 67,350 (Dec. 28, 2018). Thus, well past the two-and-a-half-year mark, SRI's application continues to languish in agency purgatory.

SUMMARY OF THE ARGUMENT

DEA's delay in noticing or responding to SRI's application is unlawful, unreasonable, and egregious. It contravenes the letter and spirit of the CSA, seriously harms SRI, and hampers SRI's efforts to help suffering veterans through clinical research. Everyone—including the agency—agrees that this research is important and that the need for research generally is urgent. Here, DEA can act with little expenditure of resources.

The Court should issue the extraordinary writ of mandamus because DEA's inexplicable delay is the only remaining impediment to research of urgent importance to the health and welfare of millions of Americans.

STANDING

When a claim is based on an alleged deprivation of a procedural right, such as the right to have an agency process an application consistent with congressional command, "the primary focus of the standing inquiry is not the imminence or redressability of the injury to the [petitioner]" but instead whether "the government act performed without the procedure in question will cause a distinct risk to a particularized interest of the plaintiff." *City of Dania Beach v. FAA*, 485 F.3d 1181, 1185 (D.C. Cir. 2007) (cites omitted). A petitioner in such a case "never has to prove that if he had received the

procedure the substantive result would have been altered." *Sugar Cane Growers Co-op. of Fla. v. Veneman*, 289 F.3d 89, 94 (D.C. Cir. 2002). Instead, "[a]ll that is necessary is to show that the procedural step was connected to the substantive result." *Id.* at 94-95.

Petitioner has standing because it is suffering an injury directly traceable to DEA's delay in processing its application that can be redressed by the relief requested. *See generally Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992). Petitioner submitted its application to manufacture cannabis for use in clinical trials and paid DEA thousands of dollars. *See* Ex. 4 at A106 (showing application fee). Under the plain language of both section 823(i)(2) and the APA, Petitioner was entitled to have DEA issue a notice regarding its application in the Federal Register to commence the process for determining whether Petitioner should be registered under the Act. 21 U.S.C. § 823(i)(2); 81 Fed. Reg. at 53,848. Petitioner and its patients have suffered other harms as well from the agency's inaction, including being saddled with cannabis ill-suited for clinical research.

ARGUMENT: REASONS WHY THE WRIT SHOULD ISSUE

I. Legal Standard

To show entitlement to mandamus, SRI must demonstrate: "(1) a clear and indisputable right to relief, (2) the government agency or official is violating a clear duty to act, and (3) that no adequate alternative remedy exists." *Am. Hosp. Ass'n v. Burwell*, 812 F.3d 183, 189 (D.C. Cir. 2016) (citing *United States v. Monzel*, 641 F.3d 528, 534 (D.C. Cir. 2011)). These requirements are jurisdictional; unless all are met, the Court must dismiss. *Id.* (cites omitted). "Even when the legal requirements for mandamus jurisdiction have been satisfied, however, a court may grant relief only when it finds compelling equitable grounds." *Id.* (quoting *In re Medicare Reimbursement Litig.*, 414 F.3d 7, 10 (D.C. Cir. 2005)). SRI must therefore show that its "right to issuance of the writ is clear and indisputable." *Id.* (quoting *Power v. Barnhart*, 292 F.3d 781, 784 (D.C. Cir. 2002)).

Mandamus claims like SRI's that "target agency delay[] turn on 'whether the agency's delay is so egregious as to warrant mandamus.'" *Id.* (quoting *In re Core Commc'ns, Inc.*, 531 F.3d 849, 855 (D.C. Cir. 2008)). In making that assessment, this Court looks to the so-called "*TRAC* factors"

> (1) the time agencies take to make decisions must be governed by a "rule of reason"; (2) where Congress has provided a timetable or other indication of the speed with which it expects

> the agency to proceed in the enabling statute, that statutory scheme may supply content for this rule of reason; (3) delays that might be reasonable in the sphere of economic regulation are less tolerable when human health and welfare are at stake; (4) the court should consider the effect of expediting delayed action on agency activities of a higher or competing priority; (5) the court should also take into account the nature and extent of the interests prejudiced by delay; and (6) the court need not "find any impropriety lurking behind agency lassitude in order to hold that agency action is 'unreasonably delayed.'"

TRAC, 750 F.2d at 80 (cites omitted).

"[W]here the statute imposes a deadline or other clear duty to act, the bulk of the *TRAC* factor analysis may go to the equitable question of whether mandamus *should* issue, rather than the jurisdictional question of whether it *could*." *Am. Hosp. Ass'n*, 812 F.3d at 189-90. That is the case here. Accordingly, SRI folds its discussion of the first two jurisdictional requirements into its analysis of the *TRAC* factors and addresses the only remaining jurisdictional issue—whether an adequate alternative remedy exists—separately.

II. DEA's egregious delay warrants mandamus.

DEA's "recalcitrance . . . in the face of a clear statutory duty" calls out for mandamus. *Pub. Citizen Health Research Grp. v. FDA*, 740 F.2d 21, 32 (D.C. Cir. 1984) (citing 5 U.S.C. §§ 555(b), 706(1)). The first five *TRAC* factors strongly favor the exercise of equitable discretion, and the sixth—improper conduct or motive—is not a prerequisite for mandamus. *TRAC*,

750 F.2d at 80. The APA commands DEA "to conclude a matter presented to it within a reasonable time," 5 U.S.C. § 555(b), and courts must "compel agency action unlawfully withheld or unreasonably delayed," *id.* § 706(1). If those imperatives apply anywhere, they apply here.

a. Congress's mandate that DEA "issue a notice of application not later than 90 days after the application is accepted for filing" supplies the applicable rule of reason.

Of the six *TRAC* factors, "[t]he first and most important . . . is that 'the time agencies take to make decisions must be governed by a "rule of reason."'" *In re Core Comm'cns, Inc.*, 531 F.3d at 855 (quoting *TRAC*, 750 F.2d at 80). Even absent an express statutory deadline, this factor can weigh in favor of mandamus. But as the second *TRAC* factor clarifies, the analysis is simpler where "Congress has provided a timetable or other indication of the speed with which it expects the agency to proceed." *TRAC*, 750 F.2d at 80. When Congress commands an agency to complete a discrete, ministerial duty within a defined timeframe, the "statutory scheme suppl[ies] content for this rule of reason . . . ." *Id.*

That is the case here. Section 823(i)(2)'s command that DEA "shall, in accordance with the regulations issued by the Attorney General, issue a notice of application not later than 90 days after the application is accepted for filing," imposes a non-discretionary duty on DEA to take a discrete,

ministerial action. 21 U.S.C. § 823(i)(2). The statute conveys both a clear duty (on DEA) and an equally clear right (on SRI). Once SRI's application was accepted for filing, DEA had a duty to "issue a notice of [SRI's] application," and SRI's indisputable right to receive that notice within "90 days" arose automatically. *See* Ex. 16 at A160 (recognizing applicants' "due process" interest in having DEA process application to manufacture).[3]

In cases like this one, where Congress has given the agency a *specific* task to complete within a *relatively brief* timeframe, this Court has described "Congress's intent that that agency act promptly" as "manifest[ ]." *In re People's Mojahedin Org. of Iran*, 680 F.3d 832, 837 (D.C. Cir. 2012); *compare, e.g.*, *Baptist Mem. Hosp. v. Sebelius*, 603 F.3d 57, 63 (D.C. Cir. 2010) (denying mandamus relief because there is no clear duty to act where the statutory language—"may"—is permissive and not mandatory). Although there "is 'no *per se* rule as to how long is too long' to wait for agency action," this Court has held that "a reasonable time for agency action is typically counted in weeks or months, not years." *In re Am. Rivers and Idaho Rivers United*, 372 F.3d 413, 419 (D.C. Cir.

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[3] Of course, the agency also has a duty not to unreasonably delay agency action under the APA. *See* 5 U.S.C. §§ 555(b), 706(1). The 90-day deadline confirms that Congress intended reasonable delay to be months, not years.

2004) (quoting *In re Int'l Chem. Workers Union*, 958 F.2d 1144, 1149 (D.C. Cir. 1992) (per curiam)); *see also, e.g.*, *MCI Telecomms. Corp. v. FCC*, 627 F.2d 322, 327 (D.C. Cir. 1980) (over three years); *Midwest Gas Users Ass'n v. FERC*, 833 F.2d 341, 359 (D.C. Cir. 1987) (four years).

In *People's Mojahedin*, for example, this Court held that a twenty-month failure to act on a 180-day statutory deadline "plainly frustrates the congressional intent and cuts strongly in favor of granting [the] mandamus petition." 680 F.3d at 837. DEA's inaction in this case is far more egregious: in the face of a command to complete a ministerial act due in half the time, the agency has unlawfully withheld the required action for almost twice as long. If an agency's refusal to act that exceeds the statutory timeframe by 333% "cuts strongly in favor of granting [the] mandamus petition," as this Court held in *People's Mojahedin*, 680 F.3d at 837, then it is hard to see how unexplained delay outstripping the congressionally-imposed timeframe by a staggering 1200% (and counting) is not also egregious.

DEA's delay also indisputably "frustrates congressional intent." *Id.* Congress imposed the 90-deadline in section 823(i)(2) as a direct response to DEA's delays with respect to applications like SRI's. *See* Ex. 18 at A168-69 (explaining that purpose of amendment was to remedy "[i]nconsistency and *lengthy* review times at DEA" and to establish a "*transparent process*

for the applicant to determine the reasons for a delay in the application.") (emph. added). DEA's flat disregard of that mandate doesn't just *frustrate* Congress's purpose; it eviscerates it. This strongly favors mandamus. *See Cutler v. Hayes*, 818 F.2d 879, 897-98 (D.C. Cir. 1987) ("The court must also estimate the extent to which delay may be undermining the statutory scheme.").

Several other considerations confirm the unreasonableness of the delay. First, DEA interprets similar statutory deadlines under the CSA as requiring agency action by a date certain. Consider, for example, section 811(j), another 90-day deadline Congress added to the CSA with the 2015 Improving Regulatory Transparency for New Medical Therapies Act. 21 U.S.C. § 811(j). In language that mirrors section 823(i)(2)'s mandate, section 811(j) provides that when DEA receives notification from HHS that it has indexed a drug under section 572 of the Food Drug and Cosmetic Act, 21 U.S.C. § 360, "the Attorney General shall, not later than 90 days after the date described in paragraph (2), issue an interim final rule . . . ." 21 U.S.C. § 811(j)(1).

Less than a year after both sections 811(j)(1) and 823(i)(2) were added to the CSA, DEA had already issued an interim final rule within section 811(j)(1)'s 90-deadline. In that interim rule, DEA noted the

deadlines Congress had imposed in the 2015 amendment and interpreted the 90-day deadline in section 811(j)(1) as requiring it to act on HHS's recommendation "not later than 90 days" after the date described in section 811(j)(2). 81 Fed. Reg. 58,834, 58,835 (Aug. 26, 2016). "[I]dentical words used in different parts of the same statute are generally presumed to have the same meaning." *IBP, Inc. v. Alvarez*, 546 U.S. 21, 34 (2005). *See also Ne. Hosp. Corp. v. Sebelius*, 657 F.3d 1,11 (D.C. Cir. 2011) (same).

Here, the agency's disparate treatment of these twin deadlines is not reasonable. Indeed, though Congress gave DEA 90 days to complete the tasks required under sections 811(j)(1) and 823(i)(2), the agency's duty under the former requires substantially more resources than its duty under the latter. Unlike section 823(i)(2), which merely requires DEA to publish a two-page notice in the Federal Register, section 811(j)(1) requires the agency to "issue an interim final rule" controlling a drug. The August 26, 2016 interim final rule discussed above fills 15 pages of the Federal Register. DEA's ability to complete these complex administrative tasks in 90 days underscores the egregiousness of its failure to take simpler action here.

Second, other CSA provisions give DEA *less* time to do *more*. Section 823(i)(1), for example, gives DEA just 180 days to process, review, and decide whether to grant or issue an order show cause as to applications to

manufacture other controlled substances for use in clinical trials. 21 U.S.C. § 823(i)(1). If six months is a reasonable amount of time for DEA to process, review, and issue an initial decision with respect to similar applications, then it is more than enough time to do far less: notice SRI's application. Other examples abound.[4]

Third, DEA routinely notices applications to manufacture controlled substances, including cannabis, months after filing. *See* examples listed *supra* p. 17. And in a presentation DEA's Office of Diversion Control made in mid-April 2016—right around the time that it received SRI's application—the agency described its process for noticing applications in detail before warning that it *sometimes* "takes 4-6 *months* to complete." Ex. 3 at A083 (2016 DEA Presentation) (emph. added). Whether measured by the agency's past practice or its public statements, the delay at issue here is beyond the pale.

Fourth, DEA's extensive delays persist years after (1) Congress amended the statute to demand the very action DEA continues to withhold, (2) DEA told the public it desired applications like SRI's, *see* Ex. 16 (A158), and (3) DEA publicly acknowledged SRI's due process right to

[4] *E.g.*, 21 U.S.C. § 826(h)(1), § 826a, § 827(f)(1)-(3)(A).

consideration of its application, *id.* at A160 ("Any person who applies for a registration to grow marijuana . . . is entitled to due process in the consideration of the application by the Agency."). There is no excuse for DEA's refusal to act in this case. Nor is there any reason to believe it will act absent judicial intervention. Accordingly, the Court should not hesitate to exercise its equitable discretion.

b. DEA's unreasonable delay has caused and continues to cause extreme prejudice and concrete harm to health and human welfare.

The third and fifth *TRAC* factors, which assess the impact of the delay, strongly favor mandamus. 750 F.2d at 80. Under the third *TRAC* factor, courts recognize that delays that relate to health and welfare are more likely to necessitate judicial intervention than those that simply may have economic consequences. *Id.* Under the fifth *TRAC* factor, courts consider the nature and extent of the interests prejudiced by the agency's delay. *Id.* These factors are appropriately addressed together because the prejudice SRI suffers is co-extensive with the harm courts have found particularly suited for mandamus relief: harm to human health and welfare.

It was concern for human health and welfare that prompted Congress to add statutory deadlines to the CSA provisions requiring DEA to process applications to manufacture controlled substances for use in clinical trials.

The Committee Report on H.R. 639—the bill that would eventually become the "Improving Regulatory Transparency for New Medical Therapies Act"—explains that the deadlines were necessary "to facilitate patient access to new therapies in an efficient and transparent manner . . . ." Ex. 18 at A168-69; *see also* Ex. 19 at A164 (representative Pitts stating that deadlines were meant to "improve the transparency and consistency of the [DEA]'s . . . registration process for the manufacture of controlled substances for use in clinical trials" because doing so would "allow new and innovative treatments to get to patients who desperately need them"); *id.* ("This legislation was introduced . . . to provide a solution to delays experienced by patients in need."); *id.* ("Further, section 3 of this bill would bring much-needed certainty to another open-ended DEA process . . . manufacturers of controlled substances intended to be used in clinical trials for products not yet approved by the FDA."). Representative Pitts, Chairman of the House Subcommittee on Health of the Committee on Energy and Commerce explained:

> This bill also establishes a timeline for DEA to grant approval of manufacturers' applications to register controlled substances not yet approved by FDA to be used in clinical trials, allowing companies to properly plan clinical trial schedules for prospective new therapies. *This provision will get products to the market faster because innovators will be able to get clinical*

> *trials under way in a timely and predictable way, which is critical to drug developers and patients alike.*

Ex. 23 at A199 (hearing remarks) (emph. added).

DEA's ongoing delays on an issue so vital to public health have frustrated just about everyone. As one bipartisan group of Senators put it in their July 25, 2018 letter to then Attorney General Jeff Sessions: "Our nation's need for meaningful federally sanctioned research is critical" because "[r]esearch and medical communities should have access to research-grade materials to answer questions around marijuana's efficacy and potential impacts, both positive and adverse." Ex. 9 at A125. And just a week ago, a Second Circuit panel reviewing the propriety of classifying cannabis as a Schedule I substance emphasized that, in light of the "unusual health related circumstances" implicated by DEA's approach to cannabis regulation, "what has counted as appropriate speed in the past may not count as appropriate speed" anymore. *Washington v. Barr*, No. 18-859-CV, 2019 WL 2292194, at *8 (2d Cir. May 30, 2019).

Millions of Americans believe cannabis holds the key to ending their pain and suffering, making the need for clinical trials acute no matter the outcome of SRI's clinical trials. If those studies show that thirty-eight states (and counting), doctors, legislators, and the American public are all

wrong—i.e., that cannabis lacks medical utility—then we must know this now. Those using cannabis to treat conditions like PTSD may be jeopardizing their health and welfare. But in the more likely alternative—i.e., SRI's studies prove that cannabis has medical value—DEA's delay inexcusably deprives combat veterans and others of a treatment option necessary to ease their pain. Either way, more delay is unconscionable.

Simply put, the ongoing harm to human health from DEA's delay in this case is *certain*. As a result, any deference owed the agency is "sharply reduced." *See Cutler*, 818 F.2d at 898 ("The deference traditionally accorded an agency to develop its own schedule is sharply reduced when injury likely will result from avoidable delay.").

DEA's delay is also a disincentive to investors. As DEA has acknowledged, "[f]unding may actually be the most important factor in whether research with marijuana (or any other experimental drug) takes place." Ex. 16 at A158, n.2. But when DEA won't even process applications to obtain the materials to *begin* research, investors are less likely to support the research to completion. Where economic considerations implicate human health and welfare, this Court has favored compelling agency action. *See TRAC*, 750 F.2d at 86 (finding that the third *TRAC* factor weighed in favor of compelling agency action because of impact on health and human

welfare where the agency had delayed adjudicating claims for a form of unemployment assistance payments).

Zooming out brings other important concerns into focus. For example, it is no secret that, despite federal prohibition, medicinal cannabis is a growing billion-dollar industry at the state level; it might be the largest industry focused solely on transacting contraband since Prohibition. And with that comes profound economic consequences. The conflict between state and federal law is reason enough to compel the agency to act. DEA says the main obstacle preventing it from recognizing medicinal cannabis at the federal level is the lack clinical research. SRI is trying to solve that problem. But the agency won't act, making the problem worse, not better.

Were it just human health and welfare at stake, the case for mandamus would be quite compelling. But the convergence of health interests and important national interests behind SRI's application should remove any hesitation this Court may have.

c. No competing priority justifies DEA's delay.

DEA's unlawful delay has not been, and cannot be, justified by any need to attend to competing priorities. *TRAC*, 750 F.2d at 80. Because Congress expressly amended the CSA to add deadlines for clinical-research-based manufacture applications, it necessarily concluded that these

applications must be an agency priority. *See People's Mojahedin*, 680 F.3d at 837 (where command is specific and deadline to act imposed is relatively brief, Congress's intent that the agency act with dispatch is "manifest[]").

Moreover, just three months ago, the President issued an Executive Order on a National Roadmap to Empower Veterans and End Suicide declaring "we must do better in fulfilling our solemn obligation to care for all those who have served our country," that it "*is the policy of the United States* to end veteran suicide through the development of a comprehensive plan to empower veterans and end suicide through coordinated suicide prevention efforts, *prioritized research activities*, and strengthened collaboration across the public and private sectors," that "[a]nswering this call to action requires an aspirational, innovative, all-hands-on-deck approach to public health — *not government as usual*." Exec. Order No. 13,861, 84 Fed. Reg. 8,585 (Mar. 5, 2019) (emph. added). Noticing SRI's application would be a great start.

Where an agency offers no "'plea of administrative error, administrative convenience, practical difficulty in carrying out a legislative mandate, or need to prioritize in the face of limited resources,"' this factor favors mandamus. *In re Am. Rivers*, 372 F.3d at 420 (quoting *Cutler*, 818 F.2d at 898). DEA has never offered such a plea, and for good reason. It

cannot seriously argue drafting and publishing a two-page notice in the Federal Register would deplete agency resources. This is the epitome of perfunctory.

Accordingly, this *TRAC* factor also underscores the urgency of mandamus relief.

d. Agency impropriety is not a prerequisite for mandamus.

SRI does not concede the purity of DEA's motives,[5] but ultimately, the agency's intent is of little concern. The manifest egregiousness of its ongoing delay justifies mandamus even without ill intent. *See TRAC*, 750 F.2d at 80.

III. SRI has no adequate alternative remedy.

Mandamus is SRI's only path to relief. The "no adequate remedy" requirement is "'a condition designed to ensure that the writ will not be used as a substitute for the regular appeals process.'" *United States v. Jicarilla Apache Nation*, 564 U.S. 162, 206 n.11 (2011) (Ginsburg, J., concurring) (quoting *Cheney v. United States Dist. Ct. for D.C.*, 542 U.S.

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5 *See* Ex. 19 (A170) (article quoting official who said DOJ "effectively shut down [the] program to increase research registrations"); *cf. Washington*, 2019 WL 2292194, at *7 (May 30, 2019) (average delay in deciding petitions to reclassify drugs approximately nine years).

367, 380-81 (2004)). Mandamus is appropriate, however, when an agency's unreasonable delay threatens to thwart judicial review, making issuance of the writ necessary "to protect its future jurisdiction." *TRAC*, 750 F.2d at 76; *Gottlieb v. Pena*, 41 F.3d 730, 734 (D.C. Cir. 1994) ("[T]he proper recourse for a party aggrieved by delay that violates a statutory deadline is to apply for a court order compelling agency action.") (cites omitted).

Here, DEA's refusal to take even the simplest administrative step cuts off all other avenues of judicial review, thrusting SRI's application into administrative purgatory.

CONCLUSION

Petitioner SRI respectfully requests this Court issue a writ of mandamus compelling the Attorney General, DEA, or its Acting Administrator to issue a "notice of application" by 90 days from the date of service of this amended petition or fifteen days after the writ issues, whichever is later. Notably, mandamus here will not divest the agency of its discretion. It simply allows the process contemplated by the statute to begin, not end. The agency still maintains discretion to deny or delay the application, *see, e.g.*, 21 U.S.C. § 823(i)(2) (". . . the Attorney General shall register the applicant, *or serve an order to show cause* upon the applicant

in accordance with section 824(c) . . .”), should that continue to be its choice.

Dated June 11, 2019

Respectfully Submitted,

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CERTIFICATE OF COMPLIANCE

This Petition complies with the Federal Rule of Appellate Procedure 21(d) because it contains 7,773 words, excluding the accompanying documents required by Rule 21(a)(2)(C).

I further certify that this Petition complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type style requirements of Federal Rule of Appellate Procedure 32(a)(6) because the Petition has been prepared in Georgia 14-point font for text and footnotes using Microsoft Word.

Dated June 11, 2019

/s/ Shane Pennington

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CERTIFICATE OF SERVICE

I certify that on June 11, 2019, I caused this amended petition, including all exhibits and addenda, to be served by U.S. postal mail and/or Federal Express on Respondents, as follows:

William P. Barr, Attorney General
United States Department of Justice
950 Pennsylvania Avenue NW
Washington, DC 20530

Uttam Dhillon, Acting Administrator
United States Drug Enforcement Administration
8701 Morrissette Drive
Springfield, VA 22152

United States Drug Enforcement Administration
8701 Morrissette Drive
Springfield, VA 22152

/s/ *Shane Pennington*
Shane Pennington

ADDENDA

Certificate as to Parties, Rulings, and Related Cases

Pursuant to D.C. Circuit Rules 21(d) and 28(a)(1), counsel for Petitioner states as follows:

A. Parties and Amici

SRI and Respondents William P. Barr, Uttam Dhillon, and DEA are the only parties to this matter. SRI is not aware of any amici who may appear.

B. Rulings Under Review

This is a corrected petition for a writ of mandamus to redress agency action unlawfully withheld and unreasonable delayed by DEA in noticing Petitioner's application. Accordingly, there is no agency or judicial decision under review.

C. Related Cases

Although there are no related cases that have been litigated in the district court, in this Court, or elsewhere, SRI may file a petition for review in this Court concurrent with this petition in a separate action soon after.

/s/ *Shane Pennington*
Shane Pennington

Dated: June 11, 2019

Corporate Disclosure Statement

In accordance with Federal Rule of Appellate Procedure 26.1 and D.C. Circuit Rule 26.1, Petitioner provides the following:

Scottsdale Research Institute, LLC states that it is an Arizona-based limited liability company under Arizona law. It is dedicated to advancing the state of medical care through rigorous research. Specifically, Petitioner aims to conduct high quality, controlled scientific studies intended to ascertain the general medical safety and efficacy of cannabis and cannabis products and examine various forms of cannabis administration. Petitioner has no parent corporation and no publicly held company owns a 10 percent or greater interest of its stock.

/s/ *Shane Pennington*
Shane Pennington

Dated: June 11, 2019

Statutory Addendum

KeyCite Yellow Flag - Negative Treatment
Proposed Legislation

United States Code Annotated
Title 21. Food and Drugs (Refs & Annos)
Chapter 13. Drug Abuse Prevention and Control (Refs & Annos)
Subchapter I. Control and Enforcement
Part C. Registration of Manufacturers, Distributors, and Dispensers of Controlled Substances

21 U.S.C.A. § 823

§ 823. Registration requirements

Effective: October 24, 2018
Currentness

(a) Manufacturers of controlled substances in schedule I or II

The Attorney General shall register an applicant to manufacture controlled substances in schedule I or II if he determines that such registration is consistent with the public interest and with United States obligations under international treaties, conventions, or protocols in effect on May 1, 1971. In determining the public interest, the following factors shall be considered:

(1) maintenance of effective controls against diversion of particular controlled substances and any controlled substance in schedule I or II compounded therefrom into other than legitimate medical, scientific, research, or industrial channels, by limiting the importation and bulk manufacture of such controlled substances to a number of establishments which can produce an adequate and uninterrupted supply of these substances under adequately competitive conditions for legitimate medical, scientific, research, and industrial purposes;

(2) compliance with applicable State and local law;

(3) promotion of technical advances in the art of manufacturing these substances and the development of new substances;

(4) prior conviction record of applicant under Federal and State laws relating to the manufacture, distribution, or dispensing of such substances;

(5) past experience in the manufacture of controlled substances, and the existence in the establishment of effective control against diversion; and

(6) such other factors as may be relevant to and consistent with the public health and safety.

(b) Distributors of controlled substances in schedule I or II

The Attorney General shall register an applicant to distribute a controlled substance in schedule I or II unless he determines that the issuance of such registration is inconsistent with the public interest. In determining the public interest, the following factors shall be considered:

(1) maintenance of effective control against diversion of particular controlled substances into other than legitimate medical, scientific, and industrial channels;

(2) compliance with applicable State and local law;

(3) prior conviction record of applicant under Federal or State laws relating to the manufacture, distribution, or dispensing of such substances;

(4) past experience in the distribution of controlled substances; and

(5) such other factors as may be relevant to and consistent with the public health and safety.

(c) Limits of authorized activities

Registration granted under subsections (a) and (b) of this section shall not entitle a registrant to (1) manufacture or distribute controlled substances in schedule I or II other than those specified in the registration, or (2) manufacture any quantity of those controlled substances in excess of the quota assigned pursuant to section 826 of this title.

(d) Manufacturers of controlled substances in schedule III, IV, or V

The Attorney General shall register an applicant to manufacture controlled substances in schedule III, IV, or V, unless he determines that the issuance of such registration is inconsistent with the public interest. In determining the public interest, the following factors shall be considered:

(1) maintenance of effective controls against diversion of particular controlled substances and any controlled substance in schedule III, IV, or V compounded therefrom into other than legitimate medical, scientific, or industrial channels;

(2) compliance with applicable State and local law;

(3) promotion of technical advances in the art of manufacturing these substances and the development of new substances;

(4) prior conviction record of applicant under Federal or State laws relating to the manufacture, distribution, or dispensing of such substances;

(5) past experience in the manufacture, distribution, and dispensing of controlled substances, and the existence in the establishment of effective controls against diversion; and

(6) such other factors as may be relevant to and consistent with the public health and safety.

(e) Distributors of controlled substances in schedule III, IV, or V

The Attorney General shall register an applicant to distribute controlled substances in schedule III, IV, or V, unless he determines that the issuance of such registration is inconsistent with the public interest. In determining the public interest, the following factors shall be considered:

(1) maintenance of effective controls against diversion of particular controlled substances into other than legitimate medical, scientific, and industrial channels;

(2) compliance with applicable State and local law;

(3) prior conviction record of applicant under Federal or State laws relating to the manufacture, distribution, or dispensing of such substances;

(4) past experience in the distribution of controlled substances; and

(5) such other factors as may be relevant to and consistent with the public health and safety.

(f) Research by practitioners; pharmacies; research applications; construction of Article 7 of the Convention on Psychotropic Substances

The Attorney General shall register practitioners (including pharmacies, as distinguished from pharmacists) to dispense, or conduct research with, controlled substances in schedule II, III, IV, or V and shall modify the registrations of pharmacies so registered to authorize them to dispense controlled substances by means of the Internet, if the applicant is authorized to dispense, or conduct research with respect to, controlled substances under the laws of the State in which he practices. The Attorney General may deny an application for such registration or such modification of registration if the Attorney General determines that the issuance of such registration or modification would be inconsistent with the public interest. In determining the public interest, the following factors shall be considered:

(1) The recommendation of the appropriate State licensing board or professional disciplinary authority.

(2) The applicant's experience in dispensing, or conducting research with respect to controlled substances.

(3) The applicant's conviction record under Federal or State laws relating to the manufacture, distribution, or dispensing of controlled substances.

(4) Compliance with applicable State, Federal, or local laws relating to controlled substances.

(5) Such other conduct which may threaten the public health and safety.

Separate registration under this part for practitioners engaging in research with controlled substances in schedule II, III, IV, or V, who are already registered under this part in another capacity, shall not be required. Registration applications by practitioners wishing to conduct research with controlled substances in schedule I shall be referred to the Secretary, who shall determine the qualifications and competency of each practitioner requesting registration, as well as the merits of the research protocol. The Secretary, in determining the merits of each research protocol, shall consult with the Attorney General as to effective procedures to adequately safeguard against diversion of such controlled substances from legitimate medical or scientific use. Registration for the purpose of bona fide research with controlled substances in schedule I by a practitioner deemed qualified by the Secretary may be denied by the Attorney General only on a ground specified in section 824(a) of this title. Article 7 of the Convention on Psychotropic Substances shall not be construed to prohibit, or impose additional restrictions upon, research involving drugs or other substances scheduled under the convention which is conducted in conformity with this subsection and other applicable provisions of this subchapter.

(g) Practitioners dispensing narcotic drugs for narcotic treatment; annual registration; separate registration; qualifications; waiver

(1) Except as provided in paragraph (2), practitioners who dispense narcotic drugs to individuals for maintenance treatment or detoxification treatment shall obtain annually a separate registration for that purpose. The Attorney General shall register an applicant to dispense narcotic drugs to individuals for maintenance treatment or detoxification treatment (or both)

(A) if the applicant is a practitioner who is determined by the Secretary to be qualified (under standards established by the Secretary) to engage in the treatment with respect to which registration is sought;

(B) if the Attorney General determines that the applicant will comply with standards established by the Attorney General respecting (i) security of stocks of narcotic drugs for such treatment, and (ii) the maintenance of records (in accordance with section 827 of this title) on such drugs; and

(C) if the Secretary determines that the applicant will comply with standards established by the Secretary (after consultation with the Attorney General) respecting the quantities of narcotic drugs which may be provided for unsupervised use by individuals in such treatment.

(2)(A) Subject to subparagraphs (D) and (J), the requirements of paragraph (1) are waived in the case of the dispensing (including the prescribing), by a practitioner, of narcotic drugs in schedule III, IV, or V or combinations of such drugs if the practitioner meets the conditions specified in subparagraph (B) and the narcotic drugs or combinations of such drugs meet the conditions specified in subparagraph (C).

(B) For purposes of subparagraph (A), the conditions specified in this subparagraph with respect to a practitioner are that, before the initial dispensing of narcotic drugs in schedule III, IV, or V or combinations of such drugs to patients for maintenance or detoxification treatment, the practitioner submit to the Secretary a notification of the intent of

the practitioner to begin dispensing the drugs or combinations for such purpose, and that the notification contain the following certifications by the practitioner:

(i) The practitioner is a qualifying practitioner (as defined in subparagraph (G)).

(ii) With respect to patients to whom the practitioner will provide such drugs or combinations of drugs, the practitioner has the capacity to provide directly, by referral, or in such other manner as determined by the Secretary--

(I) all drugs approved by the Food and Drug Administration for the treatment of opioid use disorder, including for maintenance, detoxification, overdose reversal, and relapse prevention; and

(II) appropriate counseling and other appropriate ancillary services.

(iii)(I) The total number of such patients of the practitioner at any one time will not exceed the applicable number. Except as provided in subclause (II), the applicable number is 30.

(II) The applicable number is--

(aa) 100 if, not sooner than 1 year after the date on which the practitioner submitted the initial notification, the practitioner submits a second notification to the Secretary of the need and intent of the practitioner to treat up to 100 patients;

(bb) 100 if the practitioner holds additional credentialing, as defined in section 8.2 of title 42, Code of Federal Regulations (or successor regulations);

(cc) 100 if the practitioner provides medication-assisted treatment (MAT) using covered medications (as such terms are defined in section 8.2 of title 42, Code of Federal Regulations (or successor regulations)) in a qualified practice setting (as described in section 8.615 of title 42, Code of Federal Regulations (or successor regulations)); or

(dd) 275 if the practitioner meets the requirements specified in sections 8.610 through 8.655 of title 42, Code of Federal Regulations (or successor regulations).

(III) The Secretary may by regulation change such applicable number.

(IV) The Secretary may exclude from the applicable number patients to whom such drugs or combinations of drugs are directly administered by the qualifying practitioner in the office setting.

(C) For purposes of subparagraph (A), the conditions specified in this subparagraph with respect to narcotic drugs in schedule III, IV, or V or combinations of such drugs are as follows:

(i) The drugs or combinations of drugs have, under the Federal Food, Drug, and Cosmetic Act or section 262 of Title 42, been approved for use in maintenance or detoxification treatment.

(ii) The drugs or combinations of drugs have not been the subject of an adverse determination. For purposes of this clause, an adverse determination is a determination published in the Federal Register and made by the Secretary, after consultation with the Attorney General, that the use of the drugs or combinations of drugs for maintenance or detoxification treatment requires additional standards respecting the qualifications of practitioners to provide such treatment, or requires standards respecting the quantities of the drugs that may be provided for unsupervised use.

(D)(i) A waiver under subparagraph (A) with respect to a practitioner is not in effect unless (in addition to conditions under subparagraphs (B) and (C)) the following conditions are met:

(I) The notification under subparagraph (B) is in writing and states the name of the practitioner.

(II) The notification identifies the registration issued for the practitioner pursuant to subsection (f).

(III) If the practitioner is a member of a group practice, the notification states the names of the other practitioners in the practice and identifies the registrations issued for the other practitioners pursuant to subsection (f).

(ii) Upon receiving a determination from the Secretary under clause (iii) finding that a practitioner meets all requirements for a waiver under subparagraph (B), the Attorney General shall assign the practitioner involved an identification number under this paragraph for inclusion with the registration issued for the practitioner pursuant to subsection (f). The identification number so assigned shall be appropriate to preserve the confidentiality of patients for whom the practitioner has dispensed narcotic drugs under a waiver under subparagraph (A).

(iii) Not later than 45 days after the date on which the Secretary receives a notification under subparagraph (B), the Secretary shall make a determination of whether the practitioner involved meets all requirements for a waiver under subparagraph (B) and shall forward such determination to the Attorney General. If the Secretary fails to make such determination by the end of the such 45-day period, the Attorney General shall assign the practitioner an identification number described in clause (ii) at the end of such period.

(E)(i) If a practitioner is not registered under paragraph (1) and, in violation of the conditions specified in subparagraphs (B) through (D), dispenses narcotic drugs in schedule III, IV, or V or combinations of such drugs for maintenance treatment or detoxification treatment, the Attorney General may, for purposes of section 824(a)(4) of this title, consider the practitioner to have committed an act that renders the registration of the practitioner pursuant to subsection (f) to be inconsistent with the public interest.

(ii)(I) Upon the expiration of 45 days from the date on which the Secretary receives a notification under subparagraph (B), a practitioner who in good faith submits a notification under subparagraph (B) and reasonably believes that the conditions specified in subparagraphs (B) through (D) have been met shall, in dispensing narcotic drugs in schedule III, IV, or V or combinations of such drugs for maintenance treatment or detoxification treatment, be considered to have a waiver under subparagraph (A) until notified otherwise by the Secretary, except that such a practitioner may commence

to prescribe or dispense such narcotic drugs for such purposes prior to the expiration of such 45-day period if it facilitates the treatment of an individual patient and both the Secretary and the Attorney General are notified by the practitioner of the intent to commence prescribing or dispensing such narcotic drugs.

(II) For purposes of subclause (I), the publication in the Federal Register of an adverse determination by the Secretary pursuant to subparagraph (C)(ii) shall (with respect to the narcotic drug or combination involved) be considered to be a notification provided by the Secretary to practitioners, effective upon the expiration of the 30-day period beginning on the date on which the adverse determination is so published.

(F)(i) With respect to the dispensing of narcotic drugs in schedule III, IV, or V or combinations of such drugs to patients for maintenance or detoxification treatment, a practitioner may, in his or her discretion, dispense such drugs or combinations for such treatment under a registration under paragraph (1) or a waiver under subparagraph (A) (subject to meeting the applicable conditions).

(ii) This paragraph may not be construed as having any legal effect on the conditions for obtaining a registration under paragraph (1), including with respect to the number of patients who may be served under such a registration.

(G) For purposes of this paragraph:

(i) The term "group practice" has the meaning given such term in section 1395nn(h)(4) of Title 42.

(ii) The term "qualifying physician" means a physician who is licensed under State law and who meets one or more of the following conditions:

(I) The physician holds a board certification in addiction psychiatry or addiction medicine from the American Board of Medical Specialties.

(II) The physician holds an addiction certification or board certification from the American Society of Addiction Medicine or the American Board of Addiction Medicine.

(III) The physician holds a board certification in addiction medicine from the American Osteopathic Association.

(IV) The physician has, with respect to the treatment and management of opiate-dependent patients, completed not less than 8 hours of training (through classroom situations, seminars at professional society meetings, electronic communications, or otherwise) that is provided by the American Society of Addiction Medicine, the American Academy of Addiction Psychiatry, the American Medical Association, the American Osteopathic Association, the American Psychiatric Association, or any other organization that the Secretary determines is appropriate for purposes of this subclause. Such training shall include--

(aa) opioid maintenance and detoxification;

(bb) appropriate clinical use of all drugs approved by the Food and Drug Administration for the treatment of opioid use disorder;

(cc) initial and periodic patient assessments (including substance use monitoring);

(dd) individualized treatment planning, overdose reversal, and relapse prevention;

(ee) counseling and recovery support services;

(ff) staffing roles and considerations;

(gg) diversion control; and

(hh) other best practices, as identified by the Secretary.

(V) The physician has participated as an investigator in one or more clinical trials leading to the approval of a narcotic drug in schedule III, IV, or V for maintenance or detoxification treatment, as demonstrated by a statement submitted to the Secretary by the sponsor of such approved drug.

(VI) The physician has such other training or experience as the State medical licensing board (of the State in which the physician will provide maintenance or detoxification treatment) considers to demonstrate the ability of the physician to treat and manage opiate-dependent patients.

(VII) The physician has such other training or experience as the Secretary considers to demonstrate the ability of the physician to treat and manage opiate-dependent patients. Any criteria of the Secretary under this subclause shall be established by regulation. Any such criteria are effective only for 3 years after the date on which the criteria are promulgated, but may be extended for such additional discrete 3-year periods as the Secretary considers appropriate for purposes of this subclause. Such an extension of criteria may only be effectuated through a statement published in the Federal Register by the Secretary during the 30-day period preceding the end of the 3-year period involved.

(VIII) The physician graduated in good standing from an accredited school of allopathic medicine or osteopathic medicine in the United States during the 5-year period immediately preceding the date on which the physician submits to the Secretary a written notification under subparagraph (B) and successfully completed a comprehensive allopathic or osteopathic medicine curriculum or accredited medical residency that--

(aa) included not less than 8 hours of training on treating and managing opioid-dependent patients; and

(bb) included, at a minimum--

(AA) the training described in items (aa) through (gg) of subclause (IV); and

(BB) training with respect to any other best practice the Secretary determines should be included in the curriculum, which may include training on pain management, including assessment and appropriate use of opioid and non-opioid alternatives.

(iii) The term "qualifying practitioner" means--

(I) a qualifying physician, as defined in clause (ii);

(II) a qualifying other practitioner, as defined in clause (iv), who is a nurse practitioner or physician assistant; or

(III) for the period beginning on October 1, 2018, and ending on October 1, 2023, a qualifying other practitioner, as defined in clause (iv), who is a clinical nurse specialist, certified registered nurse anesthetist, or certified nurse midwife.

(iv) The term "qualifying other practitioner" means a nurse practitioner, clinical nurse specialist, certified registered nurse anesthetist, certified nurse midwife, or physician assistant who satisfies each of the following:

(I) The nurse practitioner, clinical nurse specialist, certified registered nurse anesthetist, certified nurse midwife, or physician assistant is licensed under State law to prescribe schedule III, IV, or V medications for the treatment of pain.

(II) The nurse practitioner, clinical nurse specialist, certified registered nurse anesthetist, certified nurse midwife, or physician assistant has--

(aa) completed not fewer than 24 hours of initial training addressing each of the topics listed in clause (ii)(IV) (through classroom situations, seminars at professional society meetings, electronic communications, or otherwise) provided by the American Society of Addiction Medicine, the American Academy of Addiction Psychiatry, the American Medical Association, the American Osteopathic Association, the American Nurses Credentialing Center, the American Psychiatric Association, the American Association of Nurse Practitioners, the American Academy of Physician Assistants, or any other organization that the Secretary determines is appropriate for purposes of this subclause; or

(bb) has such other training or experience as the Secretary determines will demonstrate the ability of the nurse practitioner, clinical nurse specialist, certified registered nurse anesthetist, certified nurse midwife, or physician assistant to treat and manage opiate-dependent patients.

(III) The nurse practitioner, clinical nurse specialist, certified registered nurse anesthetist, certified nurse midwife, or physician assistant is supervised by, or works in collaboration with, a qualifying physician, if the nurse practitioner, clinical nurse specialist, certified registered nurse anesthetist, certified nurse midwife, or physician assistant is

required by State law to prescribe medications for the treatment of opioid use disorder in collaboration with or under the supervision of a physician.

The Secretary may, by regulation, revise the requirements for being a qualifying other practitioner under this clause.

(H)(i) In consultation with the Administrator of the Drug Enforcement Administration, the Administrator of the Substance Abuse and Mental Health Services Administration, the Director of the National Institute on Drug Abuse, and the Commissioner of Food and Drugs, the Secretary shall issue regulations (through notice and comment rulemaking) or issue practice guidelines to address the following:

(I) Approval of additional credentialing bodies and the responsibilities of additional credentialing bodies.

(II) Additional exemptions from the requirements of this paragraph and any regulations under this paragraph.

(III) Such other elements of the requirements under this paragraph as the Secretary determines necessary for purposes of implementing such requirements.

Nothing in such regulations or practice guidelines may authorize any Federal official or employee to exercise supervision or control over the practice of medicine or the manner in which medical services are provided.

(ii) Not later than 18 months after the date of enactment of the Opioid Use Disorder Treatment Expansion and Modernization Act, the Secretary shall update the treatment improvement protocol containing best practice guidelines for the treatment of opioid-dependent patients in office-based settings. The Secretary shall update such protocol in consultation with experts in opioid use disorder research and treatment.

(I) Notwithstanding section 903 of this title, nothing in this paragraph shall be construed to preempt any State law that--

(i) permits a qualifying practitioner to dispense narcotic drugs in schedule III, IV, or V, or combinations of such drugs, for maintenance or detoxification treatment in accordance with this paragraph to a total number of patients that is more than 30 or less than the total number applicable to the qualifying practitioner under subparagraph (B)(iii)(II) if a State enacts a law modifying such total number and the Attorney General is notified by the State of such modification; or

(ii) requires a qualifying practitioner to comply with additional requirements relating to the dispensing of narcotic drugs in schedule III, IV, or V, or combinations of such drugs, including requirements relating to the practice setting in which the qualifying practitioner practices and education, training, and reporting requirements.

(J) Repealed. Pub.L. 114-198, Title III, § 303(b), July 22, 2016, 130 Stat. 723

(h) Applicants for distribution of list I chemicals

The Attorney General shall register an applicant to distribute a list I chemical unless the Attorney General determines that registration of the applicant is inconsistent with the public interest. Registration under this subsection shall not be required for the distribution of a drug product that is exempted under clause (iv) or (v) of section 802(39)(A) of this title. In determining the public interest for the purposes of this subsection, the Attorney General shall consider--

(1) maintenance by the applicant of effective controls against diversion of listed chemicals into other than legitimate channels;

(2) compliance by the applicant with applicable Federal, State, and local law;

(3) any prior conviction record of the applicant under Federal or State laws relating to controlled substances or to chemicals controlled under Federal or State law;

(4) any past experience of the applicant in the manufacture and distribution of chemicals; and

(5) such other factors as are relevant to and consistent with the public health and safety.

(i) Registration to manufacture certain controlled substances for use only in a clinical trial

(1) For purposes of registration to manufacture a controlled substance under subsection (d) for use only in a clinical trial, the Attorney General shall register the applicant, or serve an order to show cause upon the applicant in accordance with section 824(c) of this title, not later than 180 days after the date on which the application is accepted for filing.

(2) For purposes of registration to manufacture a controlled substance under subsection (a) for use only in a clinical trial, the Attorney General shall, in accordance with the regulations issued by the Attorney General, issue a notice of application not later than 90 days after the application is accepted for filing. Not later than 90 days after the date on which the period for comment pursuant to such notice ends, the Attorney General shall register the applicant, or serve an order to show cause upon the applicant in accordance with section 824(c) of this title, unless the Attorney General has granted a hearing on the application under section 958(i) of this title.

(j) Emergency medical services that administer controlled substances

(1) Registration

For the purpose of enabling emergency medical services professionals to administer controlled substances in schedule II, III, IV, or V to ultimate users receiving emergency medical services in accordance with the requirements of this subsection, the Attorney General--

(A) shall register an emergency medical services agency if the agency submits an application demonstrating it is authorized to conduct such activity under the laws of each State in which the agency practices; and

(B) may deny an application for such registration if the Attorney General determines that the issuance of such registration would be inconsistent with the requirements of this subsection or the public interest based on the factors listed in subsection (f).

(2) Option for single registration

In registering an emergency medical services agency pursuant to paragraph (1), the Attorney General shall allow such agency the option of a single registration in each State where the agency administers controlled substances in lieu of requiring a separate registration for each location of the emergency medical services agency.

(3) Hospital-based agency

If a hospital-based emergency medical services agency is registered under subsection (f), the agency may use the registration of the hospital to administer controlled substances in accordance with this subsection without being registered under this subsection.

(4) Administration outside physical presence of medical director or authorizing medical professional

Emergency medical services professionals of a registered emergency medical services agency may administer controlled substances in schedule II, III, IV, or V outside the physical presence of a medical director or authorizing medical professional in the course of providing emergency medical services if the administration is--

(A) authorized by the law of the State in which it occurs; and

(B) pursuant to--

(i) a standing order that is issued and adopted by one or more medical directors of the agency, including any such order that may be developed by a specific State authority; or

(ii) a verbal order that is--

(I) issued in accordance with a policy of the agency; and

(II) provided by a medical director or authorizing medical professional in response to a request by the emergency medical services professional with respect to a specific patient--

(aa) in the case of a mass casualty incident; or

(bb) to ensure the proper care and treatment of a specific patient.

(5) Delivery

A registered emergency medical services agency may deliver controlled substances from a registered location of the agency to an unregistered location of the agency only if the agency--

(A) designates the unregistered location for such delivery; and

(B) notifies the Attorney General at least 30 days prior to first delivering controlled substances to the unregistered location.

(6) Storage

A registered emergency medical services agency may store controlled substances--

(A) at a registered location of the agency;

(B) at any designated location of the agency or in an emergency services vehicle situated at a registered or designated location of the agency; or

(C) in an emergency medical services vehicle used by the agency that is--

(i) traveling from, or returning to, a registered or designated location of the agency in the course of responding to an emergency; or

(ii) otherwise actively in use by the agency under circumstances that provide for security of the controlled substances consistent with the requirements established by regulations of the Attorney General.

(7) No treatment as distribution

The delivery of controlled substances by a registered emergency medical services agency pursuant to this subsection shall not be treated as distribution for purposes of section 828 of this title.

(8) Restocking of emergency medical services vehicles at a hospital

Notwithstanding paragraph (13)(J), a registered emergency medical services agency may receive controlled substances from a hospital for purposes of restocking an emergency medical services vehicle following an emergency response, and without being subject to the requirements of section 828 of this title, provided all of the following conditions are satisfied:

(A) The registered or designated location of the agency where the vehicle is primarily situated maintains a record of such receipt in accordance with paragraph (9).

(B) The hospital maintains a record of such delivery to the agency in accordance with section 827 of this title.

(C) If the vehicle is primarily situated at a designated location, such location notifies the registered location of the agency within 72 hours of the vehicle receiving the controlled substances.

(9) Maintenance of records

(A) In general

A registered emergency medical services agency shall maintain records in accordance with subsections (a) and (b) of section 827 of this title of all controlled substances that are received, administered, or otherwise disposed of pursuant to the agency's registration, without regard to subsection 827(c)(1)(B) of this title.

(B) Requirements

Such records--

(i) shall include records of deliveries of controlled substances between all locations of the agency; and

(ii) shall be maintained, whether electronically or otherwise, at each registered and designated location of the agency where the controlled substances involved are received, administered, or otherwise disposed of.

(10) Other requirements

A registered emergency medical services agency, under the supervision of a medical director, shall be responsible for ensuring that--

(A) all emergency medical services professionals who administer controlled substances using the agency's registration act in accordance with the requirements of this subsection;

(B) the recordkeeping requirements of paragraph (9) are met with respect to a registered location and each designated location of the agency;

(C) the applicable physical security requirements established by regulation of the Attorney General are complied with wherever controlled substances are stored by the agency in accordance with paragraph (6); and

(D) the agency maintains, at a registered location of the agency, a record of the standing orders issued or adopted in accordance with paragraph (9).

(11) Regulations

The Attorney General may issue regulations--

(A) specifying, with regard to delivery of controlled substances under paragraph (5)--

(i) the types of locations that may be designated under such paragraph; and

(ii) the manner in which a notification under paragraph (5)(B) must be made;

(B) specifying, with regard to the storage of controlled substances under paragraph (6), the manner in which such substances must be stored at registered and designated locations, including in emergency medical service vehicles; and

(C) addressing the ability of hospitals, emergency medical services agencies, registered locations, and designated locations to deliver controlled substances to each other in the event of--

(i) shortages of such substances;

(ii) a public health emergency; or

(iii) a mass casualty event.

(12) Rule of construction

Nothing in this subsection shall be construed--

(A) to limit the authority vested in the Attorney General by other provisions of this subchapter to take measures to prevent diversion of controlled substances; or

(B) to override the authority of any State to regulate the provision of emergency medical services consistent with this subsection.

(13) Definitions

In this section:

(A) The term "authorizing medical professional" means an emergency or other physician, or another medical professional (including an advanced practice registered nurse or physician assistant)--

(i) who is registered under this chapter;

(ii) who is acting within the scope of the registration; and

(iii) whose scope of practice under a State license or certification includes the ability to provide verbal orders.

(B) The term "designated location" means a location designated by an emergency medical services agency under paragraph (5).

(C) The term "emergency medical services" means emergency medical response and emergency mobile medical services provided outside of a fixed medical facility.

(D) The term "emergency medical services agency" means an organization providing emergency medical services, including such an organization that--

(i) is governmental (including fire-based and hospital-based agencies), nongovernmental (including hospital-based agencies), private, or volunteer-based;

(ii) provides emergency medical services by ground, air, or otherwise; and

(iii) is authorized by the State in which the organization is providing such services to provide emergency medical care, including the administering of controlled substances, to members of the general public on an emergency basis.

(E) The term "emergency medical services professional" means a health care professional (including a nurse, paramedic, or emergency medical technician) licensed or certified by the State in which the professional practices and credentialed by a medical director of the respective emergency medical services agency to provide emergency medical services within the scope of the professional's State license or certification.

(F) The term "emergency medical services vehicle" means an ambulance, fire apparatus, supervisor truck, or other vehicle used by an emergency medical services agency for the purpose of providing or facilitating emergency medical care and transport or transporting controlled substances to and from the registered and designated locations.

(G) The term "hospital-based" means, with respect to an agency, owned or operated by a hospital.

(H) The term "medical director" means a physician who is registered under subsection (f) and provides medical oversight for an emergency medical services agency.

(I) The term "medical oversight" means supervision of the provision of medical care by an emergency medical services agency.

(J) The term "registered emergency medical services agency" means--

(i) an emergency medical services agency that is registered pursuant to this subsection; or

(ii) a hospital-based emergency medical services agency that is covered by the registration of the hospital under subsection (f).

(K) The term "registered location" means a location that appears on the certificate of registration issued to an emergency medical services agency under this subsection or subsection (f), which shall be where the agency receives controlled substances from distributors.

(L) The term "specific State authority" means a governmental agency or other such authority, including a regional oversight and coordinating body, that, pursuant to State law or regulation, develops clinical protocols regarding the delivery of emergency medical services in the geographic jurisdiction of such agency or authority within the State that may be adopted by medical directors.

(M) The term "standing order" means a written medical protocol in which a medical director determines in advance the medical criteria that must be met before administering controlled substances to individuals in need of emergency medical services.

(N) The term "verbal order" means an oral directive that is given through any method of communication including by radio or telephone, directly to an emergency medical services professional, to contemporaneously administer a controlled substance to individuals in need of emergency medical services outside the physical presence of the medical director or authorizing medical professional.

(k) "Factors as may be relevant to and consistent with the public health and safety" defined

In this section, the phrase "factors as may be relevant to and consistent with the public health and safety" means factors that are relevant to and consistent with the findings contained in section 801 of this title.

CREDIT(S)

(Pub.L. 91-513, Title II, § 303, Oct. 27, 1970, 84 Stat. 1253; Pub.L. 93-281, § 3, May 14, 1974, 88 Stat. 124; Pub.L. 95-633, Title I, § 109, Nov. 10, 1978, 92 Stat. 3773; Pub.L. 98-473, Title II, § 511, Oct. 12, 1984, 98 Stat. 2073; Pub.L. 103-200, § 3(c), Dec. 17, 1993, 107 Stat. 2336; Pub.L. 106-310, Div. B, Title XXXV, § 3502(a), Oct. 17, 2000, 114 Stat. 1222; Pub.L. 107-273, Div. B, Title II, § 2501, Nov. 2, 2002, 116 Stat. 1803; Pub.L. 109-56, § 1(a), (b), Aug. 2, 2005, 119 Stat. 591; Pub.L. 109-177, Title VII, § 712(a)(3), Mar. 9, 2006, 120 Stat. 263; Pub.L. 109-469, Title XI, § 1102, Dec. 29, 2006, 120 Stat. 3540; Pub.L. 110-425, § 3(b), Oct. 15, 2008, 122 Stat. 4824; Pub.L. 114-89, § 3, Nov. 25, 2015, 129 Stat. 701; Pub.L. 114-145, § 2(a)(1), Apr. 19, 2016, 130 Stat. 354; Pub.L. 114-198, Title III, § 303(a)(1), (b), July 22, 2016, 130

Stat. 720, 723; Pub.L. 115-83, § 2, Nov. 17, 2017, 131 Stat. 1267; Pub.L. 115-271, Title III, §§ 3201(a) to (d), 3202(a), Oct. 24, 2018, 132 Stat. 3943, 3944.)

Notes of Decisions (12)

21 U.S.C.A. § 823, 21 USCA § 823
Current through P.L. 116-19.

End of Document

Declaration of Suzanne Sisley, M.D.

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

In re Scottsdale Research Institute, LLC, *Petitioner*.	)	No. _____

DECLARATION OF SUZANNE SISLEY, M.D.

1. I am the President and Founder of Scottsdale Research Institute, LLC ("SRI"). I am also the Site Principal Investigator for SRI's FDA-approved clinical trial examining safety/efficacy of whole plant cannabis in combat veterans with treatment-resistant post-traumatic stress disorder ("PTSD"). I make this declaration based on my personal knowledge and in support of the Petition for a Writ of Mandamus.

2. SRI is an Arizona based limited liability company and clinical trials site dedicated to advancing the state of medical care through rigorous research. It is located at 5436 E Tapekim Rd., Cave Creek, AZ 85331 and our website is at http://www.sriresearch.org/. SRI strives to conduct high quality, controlled scientific studies to ascertain the general medical safety

and efficacy of cannabis products and examine forms of cannabis administration. SRI does not encourage recreational use of cannabis.

3. I am also a physician licensed to practice medicine in the State of Arizona and am in good standing. I completed my medical degree at the University of Arizona College of Medicine and did my residency at Good Samaritan Regional Medical Center in the fields of Internal Medicine and Psychiatry. I also served as Clinical Faculty at St. Joseph's Hospital and Medical Center at the MercyCare Adult Medicine Clinic for indigent patients.

4. I have received many honors and awards for my work, both in private practice and in research. For example, in 2001, I won the UA's Leo B. Hart Humanitarian Award from the University of Arizona College of Medicine. I also received the Arizona Medical Association's highest honor, the President's Distinguished Service Award.

5. I have received significant support from patient rights organizations including veteran groups around the country, such as the American Legion. In September 2016, the American Legion passed a resolution in support of our research, urging the DEA to license privately-

funded cannabis production to enable safe and efficient cannabis drug development.[1]

Private Practice

6. My primary care practice has always had a focus on treating veterans as well as underserved populations across Arizona.

7. More than a decade ago, I began noticing intractable PTSD and a suicide epidemic among veterans first-hand. PTSD is a mental health condition experienced by some who go through traumatic events. Symptoms vary from individual to individual. Common symptoms include anxiety, insomnia, depression, and nightmares. Currently there are limited approved pharmaceutical remedies for PTSD. Only two anti-depressants, sertraline (Zoloft) and paroxetine (Paxil), are approved by the FDA to treat PTSD.[2]

8. PTSD is quite prevalent among combat veteran populations. The association between combat exposure and PTSD is established. Measured rates of PTSD among combat veterans consistently exceeds 10%.[3] For example, according to a RAND study published on the VA website, the

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[1] See https://archive.legion.org/bitstream/handle/20.500.12203/5763/2016N011.pdf. See also B. Bender, American Legion to Trump: Allow marijuana research for vets, Politico (May 20, 2017).

[2] See https://www.youtube.com/watch?v=Idujb84MwPE ("Weed 3") at 3:30 (April 19, 2015).

[3] See Hines, L. A., Sundin, J., Rona, R. J., Wessely, S., & Fear, N. T. (2014). Posttraumatic stress disorder post Iraq and Afghanistan: prevalence among military subgroups. Canadian journal of psychiatry. Revue canadienne de psychiatrie, 59(9), 468–479. doi:10.1177/070674371405900903

prevalence of PTSD in Operation Enduring Freedom and Operation Iraqi Freedom was 13.8% out of 1,938 participants. Another study found that prevalence rates for PTSD or depression with serious functional impairment ranged between 8.5% and 14.0%.[4] PTSD is one of the most common psychiatric diagnosis among veterans using the VA hospitals.[5]

9. Suicide rates are also quite high among veteran population. The VA estimates that around 20 veterans per day take their own lives.[6]

10. Many of my veteran clients with PTSD did not respond to conventional medications. Some clients told me that using cannabis helped alleviate their symptoms.[7] For many, cannabis was the only drug that worked, reversing insomnia or easing depression and anxiety. Patients told me that cannabis effectively quelled nightmares, flashbacks, and hypervigilance.

11. This first-hand experience inspired me to conduct clinical trials on the safety and efficacy of cannabis use to suppress treatment resistant

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4 See https://www.ptsd.va.gov/professional/treat/essentials/epidemiology.asp.

5 Ralevski, E., Olivera-Figueroa, L. A., & Petrakis, I. (2014). PTSD and comorbid AUD: a review of pharmacological and alternative treatment options. Substance abuse and rehabilitation, 5, 25–36. doi:10.2147/SAR.S37399.

6 See https://www.mentalhealth.va.gov/docs/2016suicidedatareport.pdf at 22.

7 See Weed 3 at 5:00.

PTSD, which I discussed in CNN's "Weed 3: The Marijuana Revolution,"[8] an April 19, 2015 special report by CNN's chief medical correspondent Dr. Sanjay Gupta. This documentary not only explains in detail how veterans that struggle with PTSD have come to rely on cannabis, but also how we overcame numerous obstacles to be able to do our research, which I discuss below.

The Road to Clinical Trials

12. I struggled for seven years to get approval from four different federal agencies to conduct clinical trials of cannabis as a treatment for PTSD symptoms in veterans.

13. In 2009, I began collaborating with the Multidisciplinary Association for Psychedelic Studies (MAPS) on a proposal for the FDA. On Nov. 11, 2010, MAPS' clinical research team submitted our protocol to the FDA, and FDA approval came in April 2011.

14. On July 30, 2012, we submitted the protocol to the University of Arizona Institutional Review Board (IRB), which approved the study in October 2012.

[8] Although the video does not appear to be available from CNN, the video is widely available online, for example on YouTube at https://www.youtube.com/watch?v=Idujb84MwPE. I am introduced in the video at 3:30, and our struggle to obtain all the necessary government permissions begins at 5:30.

15. Shortly after FDA approval, we sent the proposal to NIDA and PHS for approval. After a series of rejections, we finally obtained approval from these agencies around March 2014. That approval was critical because it allowed us to be able to purchase federally legal cannabis from NIDA, the only source of cannabis legal for use in federally regulated research.

16. On April 17, 2014, NIDA informed us that it did not have the cannabis we needed for our study. Shortly after that, NIDA told us that it would have to grow the cannabis we needed for our protocol.

17. In June 2014, I was released by the University of Arizona. They chose not to renew my contract of employment and two other subcontracts. My assistant professorship was terminated. As a result, I lost my healthcare, primary income, and pension. And without an academic appointment, I was unable to continue my research with the university. I discussed this in an interview with CNN's Sanjay Gupta in July 2014.[9]

18. On November 2, 2015, we submitted our protocol to the DEA. As part of the approval process, the DEA inspected SRI. In April 2016, the DEA approved my Schedule I license to do research with cannabis, which is still active. That license removed the last barrier to the study.

[9] The interview is available at https://www.cnn.com/2014/07/12/health/marijuana-researcher-arizona/index.html.

19. Our phase II clinical trials titled "Placebo-Controlled, Triple-Blind, Randomized Crossover Pilot Study of the Safety and Efficacy of Four Different Potencies of Smoked Marijuana in 76 Veterans with Chronic, Treatment-Resistant Posttraumatic Stress Disorder (PTSD)" began in early 2017, and we concluded it in early 2019. SRI treated 76 participants as part of the study. MAPS sponsored the study and it was funded with a $2.1 million grant from the Colorado Department of Public Health and Environment. The study's protocol is available online.[10] We are aiming to publish our results in late 2019. The data looks promising, and justifies further examination with an alternative supply of high-quality natural cannabis flower.

NIDA Cannabis

20. On August 10, 2016, NIDA approved SRI's request to order 6.3kg of cannabis for our clinical trials. We had requested multiple cannabis strains with varying levels of THC and CBD, including high THC, high CBD, balanced THC/CBD, and placebo. On August 25, 2016, I received the first shipment. The cannabis arrived frozen, in dried bulk form. SRI tested the cannabis at a DEA-licensed laboratory.

21. Generally speaking, the NIDA cannabis SRI received looked nothing like commercial grade medical cannabis one can buy from

[10] See https://www.sriresearch.org/MJP1-A6V1-FINAL-16MAR2017-Web%20(1).html.

dispensaries states where medicinal cannabis is legal. NIDA cannabis consistently appears to have extraneous material like sticks, stems, and seeds. Many packages looked like the green powder shown below from a 2017 article on pbs.org that I am quoted in:[11]

22. I am also quoted in a 2017 Washington Post article titled "Government marijuana looks nothing like the real stuff. See for yourself," where a side by side comparison of commercial medicinal cannabis and NIDA cannabis can be seen:[12]

[11] See C. Hellerman "Scientists say the government's only pot farm has moldy samples — and no federal testing standards," PBS (Mar. 8, 2017) (https://www.pbs.org/newshour/nation/scientists-say-governments-pot-farm-moldy-samples-no-guidelines). I took this picture.

[12] See C. Ingraham and T. Chappell, "Government marijuana looks nothing like the real stuff. See for yourself," Washington Post (Mar. 13, 2017) (https://www.washingtonpost.com/news/wonk/wp/2017/03/13/government-marijuana-looks-nothing-like-the-real-stuff-see-for-yourself/?utm_term=.2dcae33401d3/).

23. In my opinion, both as a researcher and physician, the quality of this cannabis had an adverse impact on the study results and sometimes on the study subjects. For example, I noticed that bronchial irritation was a common complaint among the study subjects. I believe this side effect could have been mitigated if not eliminated had SRI been able to grow and use its own cannabis (which would have only contained the flowering tops of the plant without the extraneous plant material that can burn more harshly and cause excessive mucosal irritation) or simply if SRI could have used other cannabis that did not have extraneous material and excessively high levels of mold.

24. Before I could use the study drug, I had to sign a Release and Indemnity Agreement and take full responsibility for the preparation and

distribution of the government's cannabis. Physicians and principal investigators should not be put into a position where we must knowingly distribute cannabis flower to enrolled study subjects, while then being forced to accept full liability for this suboptimal study drug.

25. NIDA cannabis was not only inadequate for the Phase II trial we just completed, but will be inadequate for further studies, such as Phase III clinical trials or other Phase II clinical trials. The presence of sticks, stems, and seeds and significant mold makes this drug unsuitable for clinical research in certain patient populations.

26. Because NIDA cannabis is inadequate, SRI is now looking to import cannabis from a Canadian company for other projects, such as clinical trials to test the safety and efficacy of cannabis versus fentanyl for management of breakthrough pain in terminal cancer patients.

Application to DEA

27. On October 1, 2016, I submitted SRI's application for registration under the Controlled Substances Act. I submitted answers to supplemental questionnaire to DEA shortly after.

28. In the supplemental questionnaire, I told DEA that SRI was conducting an FDA approved Phase 2 randomized controlled trial evaluating the safety and efficacy of cannabis for military veterans with PTSD, that SRI

planned to move into Phase 3 trials in next 3 years, and that it would need a supply of cannabis other than from NIDA. The purpose of SRI's application was to allow it to cultivate cannabis that could be used for Phase 3 FDA trials. The only way cannabis could ever be approved as an FDA prescription medicine is through Phase 3 trials.

29. I explained that once SRI was licensed, it would supply its own internal, FDA sanctioned and licensed clinical trials. I also discussed supplying academic and private researchers across the country to provide them with a consistent supply of medical product for clinical trials. I did not list anybody else as prospective customers because I am unaware of any other researchers allowed to do clinical trials involving cannabis.

30. Since I filed SRI's application more than two-and-a-half years ago, I have followed up with the DEA numerous times. I believe I called DEA five times between June 2017 to August 2018. I also exchanged e-mails with the agency on June 22, 2017, but after a follow up e-mail on July 15, 2017, I did not hear back from the agency.

31. One year later, I followed up on my application again in an August 30, 2018 e-mail, writing:

> I have contacted my local DEA office regularly asking them the status of our application over the past two years and continue to get a vague response saying they have no idea when the application will ever be processed.

> Can you provide us another update from the national office on when the applications will be evaluated?
>
> I know we've discussed this on the phone several times over the last few years and I continue to hear from you that you are unsure of when this application above will be assessed. So given the continual uncertainty from your office, I've stopped inquiring with national office because this seemed futile.

In response, I was only told that the status of SRI's application remained the same.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on _5_, June 2019.

Suzanne Sisley, M.D.
President of Petitioner SRI, LLC

Exhibit 22

DEA announces steps necessary to improve access to marijuana research

Drug Enforcement Administration

DEA Headquarters

@DEAHQ

August 26, 2019

Contact: National Media Affairs Office

Phone Number: (202) 307-7977

FOR IMMEDIATE RELEASE

DEA announces steps necessary to improve access to marijuana research

WASHINGTON – The Drug Enforcement Administration today announced that it is moving forward to facilitate and expand scientific and medical research for marijuana in the United States. The DEA is providing notice of pending applications from entities applying to be registered to manufacture marijuana for researchers. DEA anticipates that registering additional qualified marijuana growers will increase the variety of marijuana available for these purposes.

Over the last two years, the total number of individuals registered by DEA to conduct research with marijuana, marijuana extracts, derivatives and delta-9-tetrahydrocannabinol (THC) has increased by more than 40 percent from 384 in January 2017 to 542 in January 2019. Similarly, in the last two years, DEA has more than doubled the production quota for marijuana each year based on increased usage projections for federally approved research projects.

“I am pleased that DEA is moving forward with its review of applications for those who seek to grow marijuana legally to support research,” said Attorney General William P. Barr. “The Department of Justice will continue to work with our colleagues at the Department of Health and Human Services and across the Administration to improve research opportunities wherever we can.”

“DEA is making progress in the program to register additional marijuana growers for federally authorized research, and will work with other relevant federal agencies to expedite the necessary next steps,” said DEA Acting Administrator Uttam Dhillon. “We support additional research into marijuana and its components, and we believe registering more growers will result in researchers having access to a wider variety for study.”

This notice also announces that, as the result of a recent amendment to federal law, certain forms of cannabis no longer require DEA registration to grow or manufacture. The Agriculture Improvement Act of 2018, which was signed into law on Dec. 20, 2018, changed the definition of marijuana to exclude “hemp”—plant material that contains 0.3 percent or less delta-9 THC on a dry weight basis. Accordingly,

hemp, including hemp plants and cannabidiol (CBD) preparations at or below the 0.3 percent delta-9 THC threshold, is not a controlled substance, and a DEA registration is not required to grow or research it.

Before making decisions on these pending applications, DEA intends to propose new regulations that will govern the marijuana growers program for scientific and medical research. The new rules will help ensure DEA can evaluate the applications under the applicable legal standard and conform the program to relevant laws. To ensure transparency and public participation, this process will provide applicants and the general public with an opportunity to comment on the regulations that should govern the program of growing marijuana for scientific and medical research.

Notice of Application.

Exhibit 23

Controlled substance	Drug code	Schedule
AH-7921 (3,4-dichloro-N-[(1-dimethylamino)cyclohexylmethyl]benzamide))	9551	I
Acetylmethadol	9601	I
Allylprodine	9602	I
Alphacetylmethadol except levo-alphacetylmethadol	9603	I
Alphameprodine	9604	I
Alphamethadol	9605	I
Betacetylmethadol	9607	I
Betameprodine	9608	I
Betamethadol	9609	I
Betaprodine	9611	I
Dextromoramide	9613	I
Dipipanone	9622	I
Hydroxypethidine	9627	I
Noracymethadol	9633	I
Norlevorphanol	9634	I
Normethadone	9635	I
Racemoramide	9645	I
Trimeperidine	9646	I
1-Methyl-4-phenyl-4-propionoxypiperidine	9661	I
Tilidine	9750	I
Para-Fluorofentanyl	9812	I
3-Methylfentanyl	9813	I
Alpha-methylfentanyl	9814	I
Acetyl-alpha-methylfentanyl	9815	I
Beta-hydroxyfentanyl	9830	I
Beta-hydroxy-3-methylfentanyl	9831	I
Alpha-methylthiofentanyl	9832	I
3-Methylthiofentanyl	9833	I
Thiofentanyl	9835	I
Methamphetamine	1105	II
Methylphenidate	1724	II
Amobarbital	2125	II
Pentobarbital	2270	II
Secobarbital	2315	II
Glutethimide	2550	II
Nabilone	7379	II
1-Phenylcyclohexylamine	7460	II
Phencyclidine	7471	II
Phenylacetone	8501	II
1-Piperidinocyclohexanecarbonitrile	8603	II
Alphaprodine	9010	II
Dihydrocodeine	9120	II
Ecgonine	9180	II
Ethylmorphine	9190	II
Levomethorphan	9210	II
Levorphanol	9220	II
Meperidine	9230	II
Dextropropoxyphene, bulk (non-dosage forms)	9273	II
Levo-alphacetylmethadol	9648	II
Noroxymorphone	9668	II
Racemethorphan	9732	II
Alfentanil	9737	II
Remifentanil	9739	II
Sufentanil	9740	II
Carfentanil	9743	II
Tapentadol	9780	II

The company plans to import the listed controlled substances for the manufacture of analytical reference standards and distribution to their research and forensic customers. Approval of permit application will occur only when the registrant's activity is consistent with what is authorized under 21 U.S.C. 952(a)(2). Authorization will not extend to the import of FDA approved or non-approved finished dosage forms for commercial sale.

Dated: August 9, 2019.

Neil D. Doherty,

Acting Assistant Administrator.

[FR Doc. 2019–18455 Filed 8–26–19; 8:45 am]

BILLING CODE 4410–09–P

DEPARTMENT OF JUSTICE

Drug Enforcement Administration

[Docket No. DEA–392]

Bulk Manufacturer of Controlled Substances Applications: Bulk Manufacturers of Marihuana

ACTION: Notice of applications.

SUMMARY: The Drug Enforcement Administration (DEA) is providing

notice of certain applications it has received from entities applying to be registered to manufacture in bulk a basic class of controlled substances listed in schedule I. Prior to making decisions on these pending applications, DEA intends to promulgate regulations that govern the program of growing marihuana for scientific and medical research under DEA registration. In addition, this notice informs applicants that they may withdraw their applications if they no longer need to obtain a registration because of the recent amendments made by the Agriculture Improvement Act of 2018 to the definition of marihuana to no longer include ''hemp'' as defined by law.

DATES: Registered bulk manufacturers of the affected basic classes, and applicants therefor, may file written comments on or objections to the issuance of the proposed registration on or before October 28, 2019.

ADDRESSES: Written comments should be sent to: Drug Enforcement Administration, Attention: DEA Federal Register Representative/DPW, 8701 Morrissette Drive, Springfield, Virginia 22152–2639. To ensure proper handling of comments, please reference ''Docket No. DEA–392'' in all correspondence, including attachments.

SUPPLEMENTARY INFORMATION: The Controlled Substances Act (CSA) prohibits the cultivation and distribution of marihuana except by persons who are registered under the CSA to do so for lawful purposes. In accordance with the purposes specified in 21 CFR 1301.33(a), DEA is providing notice that the entities identified below have applied for registration as bulk manufacturers of schedule I controlled substances. In response, registered bulk manufacturers of the affected basic classes, and applicants therefor, may file written comments on or objections to the issuance of the requested registrations, as provided in this notice. This notice does not constitute any evaluation or determination of the merits of the applications submitted.

The applicants plan to manufacture bulk active pharmaceutical ingredients (APIs) for product development and distribution to DEA-registered researchers. If their applications for registration are granted, the registrants would not be authorized to conduct other activity under those registrations, aside from those coincident activities specifically authorized by DEA regulations. DEA will evaluate the applications for registration as bulk manufacturers for compliance with all applicable laws, treaties, and regulations and to ensure adequate safeguards against diversion are in place.

In particular, in accordance with the criteria specified in 21 U.S.C. 823(a), DEA is required, among other things, to maintain ''effective controls against diversion . . . by limiting the . . . bulk manufacture of such controlled substances to a number of establishments which can produce an adequate and uninterrupted supply of these substances under adequately competitive conditions for legitimate medical, scientific, research, and industrial purposes.'' 21 U.S.C. 823(a); *see* Lyle E. Craker;—Denial of Application, 74 FR 2101, 2118–23, 2127–33 (2009) (''[A]n applicant seeking to become registered to bulk manufacture a schedule I or II controlled substance bears the burden of demonstrating that the existing registered bulk manufacturers of a given schedule I or II controlled substance are unable to produce an adequate and uninterrupted supply of that substance under adequately competitive conditions.''), *pet. for rev. denied, Craker* v. *DEA,* 714 F.3d 17, 27–29 (1st Cir. 2013); *see also* Applications to Become Registered under the Controlled Substances Act to Manufacture Marijuana to Supply Researchers in the United States, 81 FR 53846, 53847 (Aug. 12, 2016) (''As subsection 823(a)(1) provides, DEA is obligated to register only the number of bulk manufacturers of a given schedule I or II controlled substance that is necessary to 'produce an adequate and uninterrupted supply of these substances under adequately competitive conditions for legitimate medical, scientific, research, and industrial purposes.' '').

Thus, in accordance with the criteria of section 823(a), DEA anticipates evaluating the applications and, of those applications that it finds are compliant with relevant laws, regulations, and treaties, granting the number that the agency determines is necessary to ensure an adequate and uninterrupted supply of the controlled substances at issue under adequately competitive conditions. By registering these additional growers in accordance with the criteria of section 823(a), DEA anticipates that additional strains of marihuana will be produced and made available to researchers. This should facilitate research, advance scientific understanding about the effects of marihuana, and potentially aid in the development of safe and effective drug products that may be approved for marketing by the Food and Drug Administration.

The applicants noticed below applied to become registered with DEA to grow marihuana as bulk manufacturers subsequent to a 2016 DEA policy statement that provided information on how it intended to expand the number of registrations, and described in general terms the way it would oversee those additional growers. Therein, DEA recognized the need to move past the single grower system and register additional growers. DEA has received 33 pending applications, as listed below; the most recent was filed in May 2019. Because the size of the applicant pool is unprecedented in DEA's experience, the Agency has determined that adjustments to its policies and practices with respect to the marihuana growers program are necessary to fairly evaluate the applicants under the 823(a) factors, including 823(a)(1).

In addition, since publication of the 2016 policy statement, the Department of Justice, in consultation with other federal agencies, has been engaged in a policy review process to ensure that the marihuana growers program is consistent with applicable laws and treaties. That review process remains ongoing; however, it has progressed to the point where DEA is able to issue Notices of Application. Over the course of this policy review process, the Department of Justice has also determined that adjustments to DEA's policies and practices related to the marihuana growers program may be necessary. Accordingly, before DEA completes this evaluation and registration process, DEA intends to propose regulations in the near future that would supersede the 2016 policy statement and govern persons seeking to become registered with DEA to grow marihuana as bulk manufacturers, consistent with applicable law.

DEA notes that, as the result of a recent amendment to federal law, certain forms of cannabis no longer require DEA registration to grow or manufacture. The Agriculture Improvement Act of 2018, Public Law 115–334, which was signed into law on December 20, 2018, changed the definition of marihuana under the CSA. As amended, the definition of marihuana no longer includes ''hemp,'' which is defined as ''the plant Cannabis sativa L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis.'' 7 U.S.C. 1639*o*(1). Pursuant to the amended definition, cannabis plant material which contains 0.3 percent or less delta-9 tetrahydrocannabinol (THC) on a dry

weight basis is not a controlled substance and does not require a DEA registration to grow. Accordingly, if any of the below-listed applicants have applied for a DEA registration exclusively for the purpose of growing cannabis that contains no more than 0.3 percent delta-9 THC on a dry weight basis, including cannabis that contains cannabidiol (CBD) and falls below the delta-9 THC threshold, the applicants no longer require DEA registration for that purpose. If desired, these applicants may respond in writing with a request to withdraw their applications. Upon receipt of a request to withdraw an application that is received no later than November 1, 2019, DEA will refund all related application fees paid by the applicant.

In addition, any listed applicants who no longer wish to obtain registration for any other reason may also request to withdraw their application in writing, and DEA will refund all related application fees paid by the applicant, provided the withdrawal is received no later than November 1, 2019. Applicants who wish to withdraw their application may do so by sending a letter to: Drug Enforcement Administration, Attn: Regulatory/DRG, 8701 Morrissette Drive, Springfield, VA 22152–2639.

List of Applications Received

In accordance with 21 CFR 1301.33(a), DEA is providing notice that on the following dates, the following entities applied to be registered as bulk manufacturers of the following basic classes of controlled substances:

Date	Applicant	Address	Controlled substance	Drug Code	Sch.
2/6/17	7218737 Delaware Inc	50 Otis Street, Westborough, MA 01581.	Marihuana	7360	I
5/11/17	A and C Laboratories	155 Federal Street, Suite 700, Boston, MA 02110.	Marihuana extract, Marihuana, Tetrahydrocannabinols.	7350, 7360, 7370	I
2/14/18	Abatin Cultivation Center	2146 Queens Chapel Rd., Washington, DC 20018.	Marihuana extract, Marihuana	7360	I
12/30/16.	Annac Medical Center LLC	5172 W Patrick Lane, Suite 100, Las Vegas, NV 89117–8911.	Marihuana extract, Marihuana	7350, 7360	I
1/4/18	Battelle Memorial Institute	1425 Plain City—Gorgesville Road, Bldg. JS–1–009, Powell, OH 43065–9647.	Marihuana, Tetrahydrocannabinols	7360, 7370	I
3/16/17	Biopharmaceutical Research Company, LLC.	11045 Commercial Parkway, Castroville, CA 95012–3209.	Marihuana extract	7350	I
11/2/16	Cannamed Pharmaceuticals, Inc	27120 Ocean Gateway, Salisbury, MD 21803.	Marihuana extract, Marihuana, Tetrahydrocannabinols.	7350, 7360, 7370	I
3/13/17	Columbia Care NY, LLC	Eastman Business Park, Bldg. 12, 4th Floor, 1669 Lake Ave., Rochester, NY 14615.	Marihuana extract	7350	I
5/3/18	Contract Pharmacal Corp	135 Adams Avenue, Hauppauge, NY 11788.	Marihuana extract, Marihuana, Tetrahydrocannabinols.	7350, 7360, 7370	I
8/2/17	Confederated Tribes of the Colville	P.O. Box 150, 21 Colville Street, Nespelem, WA 99155.	Marihuana,	7360	I
11/10/16.	Fraunhofer USA	Center for Molecular Biotechnology, 9 Innovation Way, Newark, DE 19711.	Marihuana extract	7350	I
7/31/14	Gary Gray DBA Complex Pharmacist Owner.	P.O. Box 2522, 1721 W Burrel Ave., Visalia, CA 93279–2522.	Marihuana, Tetrahydrocannabinols	7360, 7370	I
10/22/18.	GB Sciences, Inc. DBA GB Sciences Nevada, LLC.	3550 W Teco Ave., Las Vegas, NV 89118–6876.	Marihuana extract, Marihuana, Tetrahydrocannabinols.	7350, 7360, 7370	I
4/27/17	Green Leaf Inc	4614 Halibut Point Rd., Sitka, AK 99835.	Marihuana extract, Marihuana, Tetrahydrocannabinols.	7350, 7360, 7370	I
11/23/16.	Hawaii Agriculture Research Institute	94–340 Kunia Road, Kunia, HI 96759–0100.	Marihuana extract	7350	I
8/30/16	Hemp CBD LLC	190 Eagle Ford Dr., Pleasanton, TX 78064.	Marihuana, Tetrahydrocannabinols	7360, 7370	I
5/22/17	JT Medical, LLC	598 South Juniata St., Box 311, Lewistown, PA 17044–0311.	Marihuana extract, Marihuana	7350, 7360	I
5/5/17	Maridose LLC	23378 Barlake Dr., Boca Raton, FL 33433.	Marihuana, Tetrahydrocannabinols	7360, 7370	I
10/3/16	MCRGC LLC	811 Western Ave., Manchester, ME 04351.	Marihuana extract, Marihuana, Tetrahydrocannabinols.	7350, 7360, 7370	I
9/12/16	Medpharm Research, LLC	4880 Havana St., Denver, CO 80239.	Marihuana extract, Marihuana	7350, 7360	I
12/27/18.	MMJ Biopharma Cultivation	14930 Reflection Key Circle, Apt. 2511, Fort Myers, FL 33907.	Marihuana, Tetrahydrocannabinols	7360, 7370	I
1/17/17	Modern Pharmacy, LLC	123 Alton Rd., Miami Beach, FL 33139.	Marihuana extract, Marihuana	7350, 7360	I
4/5/17	National Center for Development of Natural Products.	The University of Mississippi, 135 Coy Waller Lab Complex, P.O. Box 1848, University, MS 38677.	Marihuana extract	7350	I

Date	Applicant	Address	Controlled substance	Drug Code	Sch.
5/2/19	Nuvue Pharma, LLC	4740 Dillion Drive, Pueblo, CO 81008–2112.	Marihuana	7360	I
3/31/17	Pharmacann LLC	1010 Lake St., 2nd Fl., Oak Park, IL 60301–1132.	Marihuana	7360	I
11/8/16	PS Patients Collective, Inc	36555 Bankside Drive, Cathedral City, CA 92234.	Marihuana, Tetrahydrocannabinols	7360, 7370	I
1/13/17	Scientific Botanical Pharmaceutical, Inc.	1225 W Deer Valley Rd., Phoenix, AZ 85027.	Marihuana extract, Marihuana, Tetrahydrocannabinols.	7350, 7360, 7370	I
11/29/16.	Scottsdale Research Institute	1225 W Deer Valley Rd., Phoenix, AZ 85027.	Marihuana extract	7350	I
10/3/16	The Giving Tree Wellness Center	21617 N 9th Avenue, Phoenix, AZ 85027.	Marihuana	7360	I
9/21/18	Trail Blazin' Productions	2005 Division St., Bellingham, WA 98226.	Marihuana	7360	I
2/21/17	Ultra Rich CBD	30 Rockcreek Rd., Orovada, NV 89425.	Marihuana extract	7350	I
11/1/17	University of California, Davis	One Shields Avenue, EH&S Hoagland Hall 276, Davis, CA 95616.	Marihuana	7360	I
2/22/17	University of Massachusetts	80 Campus Center Way, Amherst, MA 01003–9246.	Marihuana extract	7350	I

Dated: August 22, 2019.

Neil D. Doherty,

Acting Assistant Administrator, Deputy Assistant Administrator.

[FR Doc. 2019–18456 Filed 8–26–19; 8:45 am]

BILLING CODE 4410–09–P

DEPARTMENT OF LABOR

Office of the Secretary

Agency Information Collection Activities; Submission for OMB Review; Comment Request; National Medical Support Notice—Part B

ACTION: Notice of availability; request for comments.

SUMMARY: The Department of Labor (DOL) is submitting the Employee Benefits Security Administration (EBSA) sponsored information collection request (ICR) titled, ''National Medical Support Notice—Part B,'' to the Office of Management and Budget (OMB) for review and approval for continued use, without change, in accordance with the Paperwork Reduction Act of 1995 (PRA). Public comments on the ICR are invited.

DATES: The OMB will consider all written comments that agency receives on or before September 26, 2019.

ADDRESSES: A copy of this ICR with applicable supporting documentation; including a description of the likely respondents, proposed frequency of response, and estimated total burden may be obtained free of charge from the *RegInfo.gov* website at *http://www.reginfo.gov/public/do/PRAViewICR?ref_nbr=201907-1210-001* (this link will only become active on the day following publication of this notice) or by contacting Frederick Licari by telephone at 202–693–8073, TTY 202–693–8064, (these are not toll-free numbers) or by email at *DOL_PRA_PUBLIC@dol.gov.*

Submit comments about this request by mail to the Office of Information and Regulatory Affairs, Attn: OMB Desk Officer for DOL–EBSA, Office of Management and Budget, Room 10235, 725 17th Street NW, Washington, DC 20503; by Fax: 202–395–5806 (this is not a toll-free number); or by email: *OIRA_submission@omb.eop.gov.* Commenters are encouraged, but not required, to send a courtesy copy of any comments by mail or courier to the U.S. Department of Labor-OASAM, Office of the Chief Information Officer, Attn: Departmental Information Compliance Management Program, Room N1301, 200 Constitution Avenue NW, Washington, DC 20210; or by email: *DOL_PRA_PUBLIC@dol.gov.*

FOR FURTHER INFORMATION CONTACT: Frederick Licari by telephone at 202–693–8073, TTY 202–693–8064, (these are not toll-free numbers) or by email at *DOL_PRA_PUBLIC@dol.gov.*

SUPPLEMENTARY INFORMATION: This ICR seeks to extend PRA authority for the National Medical Support Notice—Part B information collection. Section 609 of the Employee Retirement Income Security Act (ERISA) and regulations at 29 CFR 2590.609–2 establish a National Medical Support Notice to provide group health benefits coverage pursuant to Qualified Medical Child Support Orders. Part B, Medical Support Notice to Plan Administrator, is a notice from an employer to a benefits plan administrator to implement coverage of children under ERISA covered group health plans. ERISA section 609(a) authorizes this information collection. *See* 29 U.S.C. 1169(a).

This information collection is subject to the PRA. A Federal agency generally cannot conduct or sponsor a collection of information, and the public is generally not required to respond to an information collection, unless the OMB under the PRA approves it and displays a currently valid OMB Control Number. In addition, notwithstanding any other provisions of law, no person shall generally be subject to penalty for failing to comply with a collection of information that does not display a valid Control Number. *See* 5 CFR 1320.5(a) and 1320.6. The DOL obtains OMB approval for this information collection under Control Number 1210–0113.

OMB authorization for an ICR cannot be for more than three (3) years without renewal, and the current approval for this collection is scheduled to expire on August 31, 2019. The DOL seeks to extend PRA authorization for this information collection for three (3) more years, without any change to existing requirements. The DOL notes that existing information collection requirements submitted to the OMB receive a month-to-month extension while they undergo review. For additional substantive information about this ICR, see the related notice published in the **Federal Register** on March 27, 2019 (84 FR 11573).

Interested parties are encouraged to send comments to the OMB, Office of

Exhibit 24

ORAL ARGUMENT NOT SCHEDULED

No. 19-1120

IN THE

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

In re Scottsdale Research Institute, LLC,

Petitioner

_____

ON PETITION FOR A WRIT OF MANDAMUS TO WILLIAM P. BARR, U.S. ATTORNEY GENERAL, UTTAM DHILLON, ACTING ADMINISTRATOR OF THE U.S. DRUG ENFORCEMENT ADMINISTRATION, AND THE U.S. DRUG ENFORCEMENT ADMINISTRATION

Petitioner Scottsdale Research Institute, LLC's Reply in Support of Petition for a Writ of Mandamus

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Counsel for Petitioner
Scottsdale Research Institute, LLC

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TABLE OF AUTHORITIES

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Cases

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* Authorities upon which we chiefly rely are marked with asterisks.

Statutes

Rules

Regulation

Other Authority

GLOSSARY

CSA	Controlled Substances Act
DEA	U.S. Drug Enforcement Administration
Decl.	Declaration of Suzanne Sisley, M.D.
DOJ	U.S. Department of Justice
Ex.	Exhibit (Appendix/Supplemental Appendix)
FLRA	Federal Labor Relations Authority
FDA	U.S. Food and Drug Administration
NHTSA	National Highway Traffic Safety Administration
NIDA	National Institute on Drug Abuse
NIH	National Institutes of Health
OLC	Office of Legal Counsel
OMB	Office of Management and Budget
SRI	Scottsdale Research Institute, LLC

INTRODUCTION AND SUMMARY OF ARGUMENT

DEA does not dispute a single factual or legal point in SRI's Amended Petition. Instead, the agency argues that by publishing a document entitled "Bulk Manufacturer of Controlled Substances Applications: Bulk Manufacturers of Marihuana," the day before submitting its Response, it has rendered this case moot. Resp. 4-5, 7 (citing 84 Fed. Reg. 44,920 (Aug. 27, 2019) ("August 27th Notice")). But the August 27th Notice is not the relief SRI requested. In fact, it is not relief at all.

SRI requested an order compelling DEA to publish a notice of SRI's application to manufacture marijuana for use in clinical trials. Am. Pet. 4, 37-38. And it requested that relief for a reason. Congress established deadlines to govern DEA's processing of applications to manufacture Schedule I and II controlled substances for clinical trials. The notice of application SRI requested activates those deadlines, ensuring the promptness and transparency Congress intended.

The August 27th Notice, however, disclaims the triggering effect of a 21 U.S.C. § 823(i)(2) notice. Moreover, DEA embedded the supposed notice in a broader document that announces DEA's intent to delay further while it

creates new rules, thus ignoring its duty to make an up-or-down decision on SRI's application within the timeframe Congress intended.

In short, SRI sought an order compelling DEA to take a simple but important step to guarantee prompt processing of its application. What it got was more delay—the very delay that prompted the filing of this action. As a result, the controversy is more intense than ever. This case is not moot. Nor has DEA met its heavy burden under the voluntary cessation doctrine.

Finally, because DEA does not dispute SRI's *TRAC* analysis, this Court should retain jurisdiction to ensure the agency acts with dispatch and processes SRI's application promptly.

RELIEF SOUGHT

SRI continues to request a writ of mandamus directing the Attorney General, DEA, or its Acting Administrator to issue a notice of SRI's application to manufacture marijuana for clinical trials, commencing the registration process contemplated by section 823(i)(2) of the CSA, not later than 15 days after the writ issues.[1] SRI also requests this Court retain jurisdiction over this case.

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[1] *See* Am. Pet. 4 ("SRI seeks a writ of mandamus directing the Attorney General, DEA, or its Acting Administrator to issue a 'notice of application'"); *id.* 10-13 (explaining history of section 823(i)(2) and

ARGUMENT

I. The Case Is Not Moot.

A case is moot when "the issues presented are no longer live or the parties lack a legally cognizable interest in the outcome." *Cnty. of L.A. v. Davis*, 440 U.S. 625, 631 (1979) (quotes omitted). Here, because DEA bases its mootness argument on its own conduct in response to this action, it bears the "heavy burden" of demonstrating that "(1) there is no reasonable expectation that the conduct will recur and (2) interim relief or events have completely and irrevocably eradicated the effects of the alleged violation." *True the Vote, Inc. v. Internal Revenue Serv.*, 831 F.3d 551, 561 (D.C. Cir. 2016) (cites and quotes omitted).

DEA has not carried that burden. Contrary to its characterization, the August 27th Notice is not the relief SRI requested. And even if it were, far from demonstrating that there is no reasonable expectation that the conduct will recur, the August 27th Notice assures it will. Nor does the August 27th

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how "SRI falls within the class of researchers Congress sought to protect from delay"); *id.* 21 (citing section 823(i)(2) and arguing that SRI was entitled to a notice "to commence the process for determining whether Petitioner should be registered under the Act"); *id.* 24-25 (explaining DEA's duty to issue a notice); *id.* 30-32 (describing purpose of section 823(i)(2)); *id.* 37-38 (quoting section 823(i)(2) and explaining how requested notice would "allow the process contemplated by the statute to begin, not end").

Notice eradicate the effects of DEA's unlawful delays. Indeed, it compounds them.

a. DEA did not grant the relief SRI requested.

SRI requested an order compelling DEA to "issue a notice regarding *its* application in the Federal Register." Am. Pet. 21 (emph. added). While DEA claims to have fulfilled this request, it hasn't. The August 27th Notice differs from the relief SRI sought in form and substance.

SRI applied under section 823(i)(2) to manufacture marijuana for use in clinical trials. *See* Am Pet. 11-13, 16; Resp. 4. In contrast, the August 27th Notice never mentions clinical trials or section 823(i)(2). Also, instead of noticing SRI's application to manufacture *marijuana*, the August 27th Notice says SRI seeks to manufacture "marihuana extract." Ex. 24 at SA005 (84 Fed. Reg. at 44,921). SRI did not apply to manufacture "marihuana extract" and it did not request a notice of application to do so in its Amended Petition. *See* Ex. 1 at A004; Am. Pet. 16. Finally, SRI submitted its application on October 1, 2016. Ex. 1 at A003. DEA agrees. Resp. at 3. The August 27th Notice, however, says "11/29/2016." Ex. 24 at SA005 (84 Fed. Reg. at 44,921).

These discrepancies have consequences. DEA acknowledges that Congress singled out applications to manufacture Schedule I and II

controlled substances for clinical trials to receive expedited and transparent processing:

> If an applicant seeks to manufacture a schedule I or schedule II controlled substance "for use only in a clinical trial," the Administrator will "issue a notice of application not later than 90 days after the application is accepted for filing." 21 U.S.C. § 823(i)(2). The notice will allow for a comment period, and 90 days after the comment period ends, the Administrator will "register the applicant, or serve an order to show cause upon the applicant in accordance with" section 824(c). *Id.* If the Administrator issues a show cause order, then the Administrator will provide "a statement of the basis for the denial" of the application, will direct the applicant to appear at a hearing, and will notify the applicant "of the opportunity to submit a corrective action plan on or before" the hearing date. *Id.* § 824(c)(2).

Resp. 3. As DEA's description of this statutory timetable makes plain, a notice under section 823(i)(2) triggers the remaining statutory deadlines that guarantee an up-or-down decision on an application within months. *Id.* SRI relied on this triggering function when it requested a notice of its application. Am. Pet. 37-38. We all know this. Were it not for that triggering function, SRI's claim—that the harms it suffered from DEA's inaction could "be redressed by the relief requested"—would make little sense. Am. Pet. 21 (DEA's issuance of the requested notice would, "[u]nder the plain language of section 823(i)(2)," "commence the process for determining whether Petitioner should be registered"). DEA even acknowledges that SRI requested a notice under "21 U.S.C. § 823(i)(2)" to "'*commence the process*

for determining whether [Scottsdale] should be registered under the Act.'" Resp. 4 (quoting Am. Pet. 21) (emph. added).

Yet the August 27th Notice that DEA says provides SRI the relief it requested further undermines section 823(i)(2)'s deadlines and promises more indefinite delay. According to DEA, it needs more time to make new rules before it can make a decision to approve or deny SRI's application. Ex. 24 at SA003 (84 Fed. Reg. at 44,921); *see also* Ex. 25 (SA006) (Aug. 26, 2019 DEA letter to Dr. Sisley). These new rules are necessary, DEA says, because it has received an "unprecedented" number of applications. Ex. 24 at SA003 (84 Fed. Reg. at 44,921). But of course, that "unprecedented" backlog of 33 noticed-but-not-decided applications exists only because DEA inexplicably and unlawfully failed to process a single application to manufacture marijuana *for three years*. DEA can't use the consequences of its past egregious delays to justify even more unlawful delays going forward.

Boiled down, the August 27th Notice announces a plan to keep SRI's application in agency purgatory. That is *not* the relief SRI requested, and DEA's attempt to moot this case by doubling down on the unlawful conduct that prompted this action must be rejected.

b. Even if DEA had granted the relief SRI requested, the case still would not be moot.

Under the voluntary cessation doctrine, even if the August 27th Notice were the relief SRI requested, DEA has not carried its heavy burden to establish mootness. First, far from "completely and irrevocably eradicat[ing] the effects" of DEA's unlawful delays, the August 27th Notice compounds them. *True the Vote*, 831 F.3d at 561 (cites and quotes omitted). Second, instead of making it "absolutely clear that the allegedly wrongful behavior could not reasonably be expected to recur," *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., Inc.*, 528 U.S. 167, 190 (2000), the August 27th Notice all but guarantees the *same* unlawful conduct complained of will recur under the *same* statute in a matter of months.

In re Center for Auto Safety, 793 F.2d 1346 (D.C. Cir. 1986) ("*Auto Safety*") is instructive. The National Highway Traffic Safety Administration ("NHTSA") repeatedly missed a statutory deadline requiring it to promulgate fuel-economy standards for light trucks 18 months before the start of each model year. *Id.* at 1347-48. Petitioners asked this Court to compel the agency to promulgate standards. *See id.* While the petition was pending, NHTSA promulgated the 1987 model-year standards, and in response to this Court's request for timetables, the agency also issued the 1988 model-year

standards. *Id.* By the time this Court issued its opinion, the agency had also proposed 1989 model-year standards and assured this Court it would issue final standards timely. *Id.* at 1350. Like DEA here, NHTSA urged mootness, claiming it had granted the relief petitioners requested. But this Court rejected the plea, explaining that "petitioners have challenged a *pattern* of delay by the agency," *id.* at 1348 (emph. original), and the "pattern of missing deadlines remain[ed]," *id.* at 1352.

Nor did the agency's voluntary cessation moot the case. Despite NHTSA issuing standards more promptly in view of the pending lawsuit and assuring this Court it would act promptly going forward, this Court held the agency had not carried its burden of showing "no reasonable expectation" that it would not once again miss the statutory deadline. *Id.* at 1348. The Court emphasized the agency's history of delays and its refusal "to admit the illegality of its past conduct." *Id.* at 1352-53. These considerations increased the probability the agency would "once again fail to meet statutory deadlines in the future." *Id.*

For even stronger reasons, DEA has not carried its burden here.

First, DEA offers no assurances in the August 27th Notice, its Response, or anywhere else, that it will process SRI's application consistent with statutory mandate or in an otherwise timely manner. In fact, DEA promises

more of the same delay that inspired both section 823(i)(2) and this action. At the end of the Response, for example, DEA quotes SRI's Amended Petition, which acknowledges DEA's "discretion to deny or delay the application." Resp. 8 (quoting Am. Pet. 37). DEA takes SRI's statement out of context, however. SRI recognized DEA's discretion to delay but not beyond the confines of the timetable Congress established:

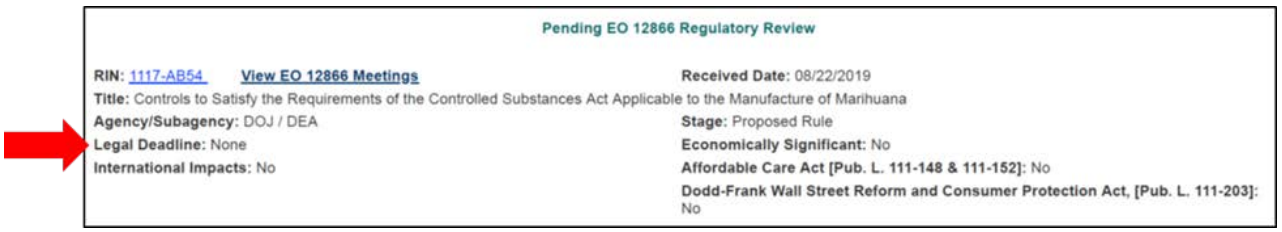
> Petitioner SRI respectfully requests this Court issue a writ of mandamus compelling the Attorney General, DEA, or its Acting Administrator to issue a "notice of application" by 90 days from the date of service of this petition or fifteen days after the writ issues, whichever is later. Notably, mandamus here will not divest the agency of its discretion. It simply allows the process contemplated by the statute to begin, not end. The agency still maintains discretion to deny or delay the application, *see, e.g.*, 21 U.S.C. § 823(i)(2) (". . . the Attorney General shall register the applicant, or serve an order to show cause upon the applicant in accordance with section 824(c) . . ."), should that continue to be its choice.

Am Pet. 37-38. DEA's confusion underscores exactly why this case is not moot, namely, because the agency plainly has no concrete deadlines going forward and has not recognized a duty to adhere to any timeline.

The August 27th Notice all but guarantees unlawful delay will persist. DEA isn't close to approving or denying SRI's application. Even if the proposed rulemaking process were well underway, it would be impossible for

the agency to promulgate new rules *and* apply them to decide SRI's application in such a short window of time.[2]

All other signs point to indefinite delay. The "policy review process" that DEA says must be completed before it can issue new rules "remains ongoing." Ex. 24 at SA003 (84 Fed. Reg. at 44,921). DEA will not be able to issue a notice of proposed rulemaking until the Office of Management and Budget ("OMB") completes its own review of the agency's proposal. Resp. 5. At the time of this writing, OMB's website reflects *no* progress on that review. Ex. 27 at SA015 (screenshot). Indeed, it provides little information at all, and as the screenshot below illustrates, what it *does* say is not reassuring—"**Legal Deadline**: None":



Pending EO 12866 Regulatory Review

RIN: 1117-AB54 View EO 12866 Meetings
Received Date: 08/22/2019
Title: Controls to Satisfy the Requirements of the Controlled Substances Act Applicable to the Manufacture of Marihuana
Agency/Subagency: DOJ / DEA
Stage: Proposed Rule
Legal Deadline: None
Economically Significant: No
International Impacts: No
Affordable Care Act [Pub. L. 111-148 & 111-152]: No
Dodd-Frank Wall Street Reform and Consumer Protection Act, [Pub. L. 111-203]: No

[2] *See, e.g.*, Congressional Research Serv., *Agency Delay: Congressional and Judicial Means to Expedite Agency Rulemaking* at 5 and nn.37, 41 (Oct. 5, 2018), *available at* https://fas.org/sgp/crs/misc/R45336.pdf (noting average administrative rulemaking takes between one and two years but many take "41 months or longer").

Second, DEA's refusal to acknowledge its obligation to process applications promptly—even in the face of a statute designed to cure opaqueness and delay—demonstrates it will likely continue to ignore deadlines. Two days before filing the Response, DEA, the Acting Administrator, DOJ, and the Attorney General all went on record touting DEA's plan to promulgate new rules to facilitate marijuana research. Ex. 26 (SA010) (Aug. 26, 2019 press releases). Nobody acknowledged an obligation to process any applications promptly. Nor did DEA say anything about the unlawfulness or unreasonableness of its refusal to process applications that have been pending for years. As this Court explained *Auto Safety*, a "refusal to admit the illegality of its past conduct heightens the probability that the agency will once again fail to meet statutory deadlines in the future." 793 F.2d at 1353.

The cases DEA relies on are not persuasive. Most stand for the unremarkable proposition that, as a general matter, a mandamus action becomes moot when the government takes the action requested in the petition. *See, e.g.*, Resp. 7-8 & n.2. Consider *In re American Federation of Government Employees, AFL-CIO*, 837 F.2d 503, 505 (D.C. Cir. 1988)

("*American Federation*"), one of the two cases DEA chiefly relies on.[3] It undercuts DEA's argument. DEA correctly notes that this Court held a mandamus action that sought to compel the Federal Labor Relations Authority ("FLRA") to decide certain appeals within thirty days was moot because "all the negotiability appeals listed in the petition ha[d] been decided." Resp. 7 (citing *American Federation*, 83 F.2d at 505). But there, the request for prompt resolution of the appeals at issue was an end in itself. *American Federation*, 837 F.2d at 504-05. Once FLRA disposed of the appeals, petitioners had received all the relief they requested. Here, in contrast, SRI's request for a notice of application was a means to end DEA's unlawful delay. Am. Pet. 37 ("[M]andamus here will . . . simply allow[] the process contemplated by the statute to begin, not end."). But by embedding the August 27th Notice in a broader document that disclaims the effectiveness of the notice of SRI's application to activate section 823(i)(2)'s remaining deadlines, DEA stripped the notice of the power that motivated SRI to request it in the first place.

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[3] The other is *Gordon v. Gray*, 193 F.2d 367 (D.C. Cir. 1951), a two-paragraph per curiam opinion that is also distinguishable. Unlike this case, the "substantive objectives which could be served by a writ of mandamus" in *Gordon* "ha[d] been served." *Id.* at 367. Not so here where DEA intends to continue its unlawful delays.

Furthermore, in *American Federation*, this Court concluded that the request for an order requiring FLRA to process all future negotiability appeals within six months was *not moot*. 837 F.2d at 507. Although FLRA was apologetic—promising to act more promptly in the future and implementing internal improvements to facilitate faster resolution of appeals—this Court held that the agency still had not shown the unlawful delays were unlikely to recur. *Id*. Here, in contrast, DEA has never acknowledged its unlawful conduct and offers no assurance it will change its ways in the future.

More important, DEA's cases do not involve an agency's attempt to manufacture mootness by doubling down on the same unlawful conduct that triggered the filing of the action. This Court has held that an agency cannot establish mootness when it equivocates about its intent to refrain from unlawful conduct going forward. *See, e.g.*, *True the Vote*, 831 F.3d at 563 (D.C. Cir. 2016) (holding agency's statement that it had merely *suspended* unlawful activity was insufficient to demonstrate "no reasonable expectation of resumption"). For even stronger reasons, DEA cannot establish mootness while promising to continue its unlawful delays.

II. The Court Should Retain Jurisdiction Over This Case.

Even in cases where this Court has declined to issue a writ of mandamus, it has retained jurisdiction to ensure the agency acts with appropriate dispatch going forward. The writ should issue, for the reasons stated above and in the Amended Petition. But in any case, the Court should retain jurisdiction.

Auto Safety is, once again, instructive. Even after NHTSA took the requested action, this Court retained jurisdiction because of the agency's history of chronic delay, the effect the delay had on the statutory scheme, and the agency's refusal to admit the illegality of its past conduct. 793 F.2d at 1354. In *TRAC*, although this Court declined to compel agency action via mandamus, it retained jurisdiction until final disposition by the agency to ensure the agency kept its promise of expeditious treatment of petitioners' claim. *Telecomms. Research & Action Ctr. v. F.C.C.*, 750 F.2d 70, 81 (D.C. Cir. 1984). The Court also required periodic updates from the agency, and stated that "[p]rior to final agency orders, any party may petition this court to take additional appropriate action as may be warranted." *Id.*; *see also In re Monroe Commc'ns Corp.*, 840 F.2d 942, 947 (D.C. Cir. 1988) ("[T]he unusual circumstance of an unrebutted allegation of bad faith leads us to retain jurisdiction over the case until the license is awarded to ensure the kind of progress promised at oral argument."); *In re Bluewater Network*, 234 F.3d 1305, 1316 (D.C. Cir. 2000) (similar).

More recently, in *In re United Mine Workers of Am. Int'l Union*, the Court declined to issue a writ of mandamus, but retained jurisdiction where the agency had violated a ninety-day deadline for rulemaking under the Mine Safety and Health Act of 1977, 30 U.S.C. § 811(a)(4) ("Mine Act"). 190 F.3d 545, 549-50 (D.C. Cir. 1999). The parties agreed the rulemaking had great significance to the health and safety of miners. While the agency contended it had discretion to defer the deadline, this Court disagreed, concluding that the deadline put a "closure date" on the process. *Id.* at 550-51. Faced with a transparent violation of the statutory deadline, this Court declined to issue mandamus relief which would have interfered with the agency's internal processes and damaged the interests petitioner sought to protect with the writ. *Id.* at 551, 556. At the same time, however, in view of the agency's briefs, which contained "no hint of a schedule for coming into compliance with the Mine Act," this Court accepted the alternative suggestion to retain jurisdiction. *Id.* at 554, 556.

The circumstances here justify similar relief. They are as concerning, if not more concerning, than those in the cases cited above. DEA does not justify its unlawful delay in publishing a two-page notice, but instead, proposes to stall on SRI's application while the agency makes new rules. DEA disputes *none* of SRI's analysis under *TRAC*. In particular, it does not dispute that good science using medical grade cannabis is an urgent national priority that implicates the health and welfare of our nation's veterans and everyone

else that uses medicinal cannabis. If, as the agency maintains, marijuana has "no currently accepted medical use in in treatment the United States" because of a lack of adequate and well controlled studies proving efficacy, *see* Am. Pet. 6-7 (citing Ex. 16), then robust FDA approved clinical trials involving true medical-grade cannabis are needed as soon as possible. Indeed, the very same day DEA published the August 27th Notice, FDA and the National Institutes of Health ("NIH") explained exactly what Dr. Sisley declared, Decl. ¶¶ 20-29—that the NIDA monopoly stifles robust cannabis-based clinical trials:

> There are a variety of barriers to conducting research on cannabis and cannabanoids. First, through a contract with University of Mississippi, which is the only entity registered with the Drug Enforcement Agency (DEA) to cultivate marijuana for research purposes, NIDA is the only source of marijuana permitted for use in research, thereby limiting the diversity products and formulations available to researchers and slowing the development of cannabis-based medications. *Although the University of Mississippi supplies cannabis for clinical trials, it does not have the capacity to manufacture a broad array of cannabis-derived formulations for research or to supply these cannabis products for commercial development.*

Ex. 28 at SA019 (Aug. 27, 2019 FDA/NIH Ltr. to Sen. Schatz) (emph. added).

For three years, DEA and DOJ shirked congressional inquiries about this important program essential to facilitating robust clinical trials. Am. Pet. at 18-19. Even today, neither explains—to Congress, the public, or even to this Court—why more than three years lapsed before the agency *announced* the supposed need for new rules, or more fundamentally, why special rules for manufacturing *marijuana*, as opposed to other controlled substances, are

necessary at all. And over three years, only one event ever triggered any visible agency action: this Court ordering DEA to respond to SRI's Amended Petition, which it basically did not do.[4]

DEA's non-response makes it impossible to gauge the purity of its motives. But at the very least, the facts and circumstances of this case justify this Court maintaining jurisdiction.

CONCLUSION

It is time for the "administrative keep-away" game to end. *In re Am. Rivers & Idaho Rivers United*, 372 F.3d 413, 420 (D.C. Cir. 2004). The Court should issue the writ, and in any case, retain jurisdiction to ensure the agency acts with dispatch going forward.

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[4] SRI suspects (although it cannot be certain) that DEA's non-response in this case and its refusal to allow applications to manufacture marijuana to mature into reviewable final agency action share a common root: a desire to shield from judicial scrutiny an undisclosed Office of Legal Counsel ("OLC") interpretation of the Single Convention on Narcotic Drugs of 1961, contrary to the view DEA took in August 2016. *See* Ex. 16 at A159 ("Treaty Considerations"); Ex. 20 at A176 (Sept. 2018 Wall St. Journal article explaining OLC concluded growers program violated 1961 Treaty); *see also* Ex. 24 at SA003 (DOJ, in consultation with other federal agencies, has been engaged in "policy review process to ensure that the marihuana growers program is consistent with applicable law *and treaties*") (emph. added).

Dated September 11, 2019

Respectfully Submitted,

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Counsel for Petitioner
Scottsdale Research Institute, LLC

CERTIFICATE OF COMPLIANCE

This Reply complies with this Court's July 29, 2019 Order because it contains 3,852 words.

I further certify that this Reply complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type style requirements of Federal Rule of Appellate Procedure 32(a)(6) because the Reply has been prepared in Georgia 14-point font for text and footnotes using Microsoft Word.

Dated September 11, 2019

/s/ Shane Pennington

Shane Pennington
YETTER COLEMAN LLP
811 Main St. Suite 4100
Houston, TX 77002
(713) 632-8000

Counsel for Petitioner
Scottsdale Research Institute, LLC

CERTIFICATE OF SERVICE

I certify that on September 11, 2019, I electronically filed this document with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit by using the appellate CM/ECF system. Participants in the case are registered CM/ECF users, and service will be accomplished by the appellate CM/ECF system.

/s/ *Shane Pennington*
Shane Pennington

Exhibit 25

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 19-1120 **September Term, 2019**

Filed On: October 18, 2019

In re: Scottsdale Research Institute, LLC,

Petitioner

BEFORE: Millett, Pillard, and Wilkins, Circuit Judges

O R D E R

Upon consideration of the amended petition for writ of mandamus, the response thereto, the reply, and respondent's Rule 28(j) letter; and the motion to supplement the appendix, it is

ORDERED that the motion to supplement the appendix, and the Federal Register notice that petitioner seeks to include in the appendix, be construed as a Federal Rule of Appellate Procedure 28(j) letter advising of supplemental authority, because the Federal Register notice is a judicially noticeable public record document. Therefore, petitioner's motion to supplement the appendix was unnecessary. It is

FURTHER ORDERED that the amended petition for writ of mandamus be denied. In light of respondent's October 11, 2019 publication in the Federal Register of a corrected notice of petitioner's application to manufacture controlled substances in bulk, petitioner's request for a writ of mandamus directing respondent to issue a notice of application is now moot. See McBryde v. Comm. to Review, 264 F.3d 52, 55 (D.C. Cir. 2001) ("If events outrun the controversy such that the court can grant no meaningful relief, the case must be dismissed as moot."). Further, because respondent's publication of the corrected notice "is more accurately characterized as the provision of appropriate relief to petitioner than as the 'cessation of illegal conduct,'" the "voluntary cessation" exception to mootness does not apply here. Nat. Res. Def. Council v. Nuclear Regulatory Comm'n, 680 F.2d 810, 814 n.8 (D.C. Cir. 1982).

Finally, to the extent petitioner requests that this court retain jurisdiction over this case to ensure respondent's compliance with future statutory deadlines to act on its application, petitioner has not demonstrated a "history of chronic delay and [the agency's] repeated failure to meet its own projections," In re: Ctr. for Auto Safety, 793 F.2d 1346, 1354 (D.C. Cir. 1986), or that respondent has acted in bad faith, see In re: Monroe Commc'ns Corp., 840 F.2d 942, 947 (D.C. Cir. 1988). Denial of this aspect of the mandamus petition is without prejudice to renewal in the event of significant delay.

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 19-1120 **September Term, 2019**

Pursuant to D.C. Circuit Rule 36, this disposition will not be published.

Per Curiam

FOR THE COURT:
Mark J. Langer, Clerk

BY: /s/
Amanda Himes
Deputy Clerk

Exhibit 26

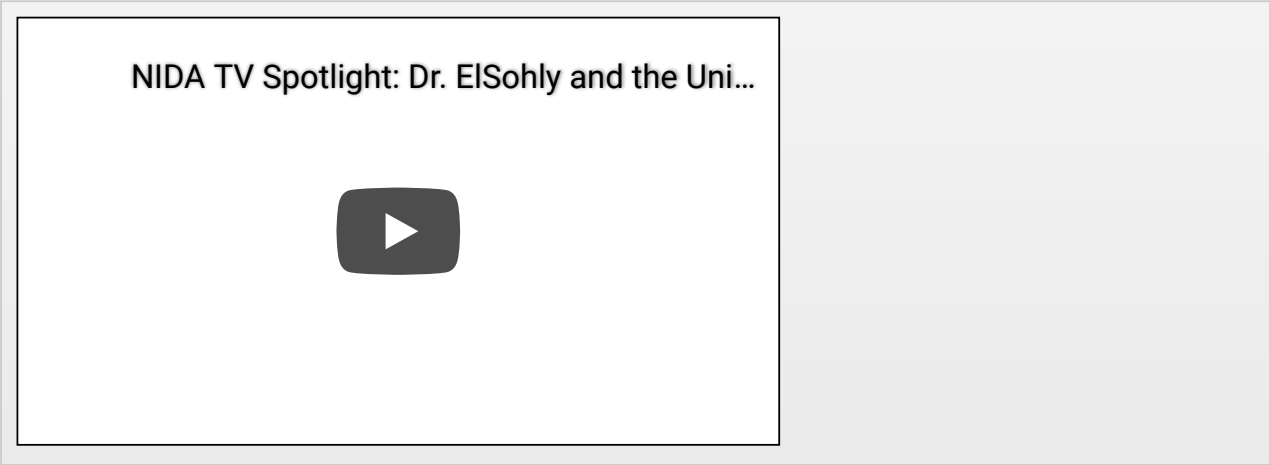
National Institute on Drug Abuse
Advancing Addiction Science

NIDA's Role in Providing Marijuana for Research

Revised August 2019

Under the 1961 international Single Convention on Narcotic Drugs (PDF, 680KB) (amended in 1972), cannabis is designated a Schedule I substance, and participating countries are required to restrict production, manufacture, possession and distribution of marijuana except for medical and scientific purposes. The Drug Enforcement Administration (DEA) regulates the cultivation of marijuana for research purposes through registration requirements and establishing annual aggregate production quotas under the authority of the 1970 Controlled Substances Act (CSA), which implements the Single Convention. Since then, the DEA has only issued a single registration for the cultivation of marijuana for research, to the University of Mississippi, which is funded through a NIDA contract. However, in August 2016, the DEA announced it will allow additional growers to register with them to produce and distribute marijuana for research purposes. The DEA issued an additional announcement in August 2019 outlining plans to move forward with registering additional growers. Questions on the authority to issue additional registrations would have to be addressed to the DEA.

NIDA contracts with the University of Mississippi to grow marijuana for use in research studies. The contract was renewed in 2015 under an open solicitation process. The University designates a secure plot of land where marijuana crops are grown every few years, based on current and expected demand. The marijuana is grown, harvested, stored, and made available as bulk marijuana or other purified elements of marijuana to use for research. For more information on the marijuana farm and current supply: See Information on marijuana farm contract.



Marijuana for use in research can be obtained through the NIDA drug supply program through a process that was updated by the Department of Health and Human Services in June 2015 (PDF, 381KB). Applicants are encouraged to contact the NIDA Drug Supply Program prior to submitting their application to obtain information on availability of the marijuana strain(s) to be requested. All applicants must fulfill the following requirements:

For NIH Funded Projects (for all studies from basic science to human trials):

1. **Demonstrate scientific validity and ethical soundness through NIH review**, consisting of three steps: (1) the NIH peer review system, which assesses the scientific and technical merit of all grant applications; (2) the National Advisory Council of the funding institute, comprising eminent scientists as well as public members; and (3) the funding Institute's Director, who makes the final decision on the merit of an application for funding, based on peer review, public health significance, and Institute priorities. To find studies approved through this NIH review process, go to https://projectreporter.nih.gov/reporter.cfm (you should use the search terms "marijuana," "cannabis," and "cannabinoid").
2. **An active-status Investigational New Drug (IND) application on file with the FDA (for human research only), which has been evaluated by FDA and found safe to proceed.**
3. **A DEA registration for marijuana, a Schedule I controlled substance.**

For Non-NIH Funded Human Research Projects:

1. **Demonstrate scientific validity and ethical soundness through review by the Food and Drug Administration (FDA) IND process**. Research protoco
which assures the safety and rights of subjects and the scientif
investigations, and assesses the likelihood that investigations w
the statutory standards for drug marketing approval; and
2. **A DEA registration for marijuana, a Schedule I controlled substance.**

When the above steps have been completed, investigators contact the NIDA Drug Supply Program to place an order for marijuana with specific characteristics with regard to concentrations of delta-9-tetrahydro-cannabinol (THC), cannabidiol (CBD), and other cannabinoids. The program official verifies that the application is complete (with all the above-mentioned steps fulfilled), and forwards the order on to the contractor responsible for shipping the marijuana.

For Non-NIH Funded Non-Human/Basic Research Projects: See NIDA Drug Supply Program

Note: While not required in all cases it is recommended that researchers contact the NIDA Drug Supply Program early in the planning of a study to obtain information on specific strains of marijuana available so that this information can be included in the protocol and IND.

Mold and Yeast Standards

The National Institute on Drug Abuse (NIDA) has supplied marijuana to researchers through our drug supply program for over 40 years without any known health consequences from contaminants. All plant materials contain mold and yeast, which are naturally occurring in air and soil.

There is currently no universally accepted standard for levels of mold and yeast on marijuana and different health organizations set cutoffs for acceptable levels spanning an enormous range [from 500-200,000 colony forming units (CFU)/g]. In response, NIDA is conferring with the Food and Drug Administration (FDA) to determine what analyses and specifications are appropriate for NIDA-supplied marijuana.

This page was last updated August 2019

Exhibit 27

Congress of the United States
Washington, DC 20515

December 6, 2019

The Honorable William P. Barr
Attorney General
U.S. Department of Justice
950 Pennsylvania Avenue, NW
Washington, DC 20530

Dear Attorney General Barr:

We write to ask for clarification in the Justice Department's current and proposed policies regarding the access to research-grade cannabis, including forthcoming new regulations governing schedule I licenses to manufacture cannabis for research.[1]

In response to a congressional inquiry, both the National Institutes of Health (NIH) and the U.S. Food and Drug Administration (FDA) discussed how federal restrictions inhibit marijuana research in a variety of ways, including limitations on the diversity and quality of research-grade cannabis.[2] The agencies stated that "[a] larger body of rigorous research, including on cannabis and cannabinoid products that are already in use or that could be developed into FDA-approved medications, is key to furthering our understanding of their potential medical benefits and risks."

One barrier to research is that the Drug Enforcement Administration (DEA) has registered one entity to produce research-grade marijuana—the University of Mississippi. Both NIH and FDA note that having one source producing the marijuana necessary for research limits "the diversity of products and formulations available to researchers" and slows "the development of cannabis-based medication." Due to the limitations associated with cultivating all research-grade marijuana at a single facility, the agencies "support licensing additional entities to supply cannabis, including extracts and derivatives, to legitimate researchers and drug product developers in the United States."

As recently as 2016, DEA has acknowledged the need for increased diversity and quality of research-grade cannabis.[3] However, both DEA and the Justice Department have delayed the approval of licenses to manufacture marijuana for over three years. Furthermore, the Justice Department is now considering a new regulatory scheme to govern how additional manufacturers for research will operate.

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[1] Drug Enforcement Administration, "Bulk Manufacturer of Controlled Substances Applications: Bulk Manufacturers of Marihuana," 84 FR 44920, 28 Oct. 2019, https://www.federalregister.gov/documents/2019/08/27/2019-18456/bulk-manufacturer-of-controlled-substances-applications-bulk-manufacturers-of-marihuana.

[2] "FDA and NIH on Marijuana," https://www.scribd.com/document/425284413/FDA-And-NIH-On-Marijuana#from_embed.

[3] Drug Enforcement Agency, "Applications To Become Registered Under the Controlled Substances Act to Manufacture Marijuana To Supply Researchers in the United States," 81 FR 53846 12 Aug. 2016, https://www.federalregister.gov/documents/2016/08/12/2016-17955/applications-to-become-registered-under-the-controlled-substances-act-to-manufacture-marijuana-to.

At the same time, the status quo does not address a barrier to research raised by both NIH and FDA: "under federal law, researchers are unable to purchase strains of marijuana or products containing marijuana from state dispensaries (even with non-federal funds), resulting in a significant gap in our understanding of these products and their impact on health." Both agencies recommended that researchers should be able to obtain cannabis from state-legal sources.

Additionally, NIH and FDA jointly recognized the problems in industry development of licensed drugs with data from products obtained from third-parties, such as the University of Mississippi. In many states, cannabis law and regulations already provide for licensing of industrial manufacturing activities, and products are available for medical use in those states, but not for research leading to FDA licensure.

There is a need for a greater diversity of cannabis products so that research on benefits and risks reflects the realities of what consumers and patients are using. NIH and FDA have strongly recommended streamlining the process for conducting research and product development activities with cannabis and other Schedule I substances, and that the DEA take action to assure that interpretations of processes and policies are universally applied in local DEA jurisdictions.

We request the following:

1) That the DEA amend, in light of the strong statements of continued research needs by both NIH and FDA and without need for further legislative action, its current policies so as to allow researchers with Schedule I licenses to obtain cannabis-derived products from state authorized dispensaries for research purposes.[4]

2) That the DEA issue in the near future a public clarification of its interpretation of the hemp provision in the *Agricultural Improvement Act of 2018*—which removes "hemp" from the definition of "marihuana" under the *Controlled Substances Act*. Cannabis preparations that conform to the hemp definition should not require a Schedule I research registration, regardless of the classification of the cannabis source ingredients used in the final preparation.[5]

Please respond in writing by December 20, 2019. Thank you for your attention to this matter.

Sincerely,

BRIAN SCHATZ
United States Senator

HARLEY ROUDA
Member of Congress

[4] Under 21 U.S.C. § 822(d), "The Attorney General may, by regulation, waive the requirement for registration of certain manufacturers, distributors, or dispensers if he finds it consistent with the public health and safety."

[5] Under P.L. 115-334, hemp is defined as "the plant Cannabis sativa L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis."

KAMALA D. HARRIS
United States Senator

CORY GARDNER
United States Senator

MATT GAETZ
Member of Congress

EARL BLUMENAUER
Member of Congress

TONY CÁRDENAS
Member of Congress

JIMMY PANETTA
Member of Congress

ANGIE CRAIG
Member of Congress

BILL FOSTER
Member of Congress

RASHIDA TLAIB
Member of Congress

KATIE PORTER
Member of Congress

CINDY AXNE
Member of Congress

SCOTT H. PETERS
Member of Congress

JOSEPH P. KENNEDY, III
Member of Congress

BARBARA LEE
Member of Congress

PETER A. DEFAZIO
Member of Congress

DAVID TRONE
Member of Congress

MIKE LEVIN
Member of Congress

JOE NEGUSE
Member of Congress

DAVID E. PRICE
Member of Congress

cc: Uttam Dhillon
Acting Administrator
Drug Enforcement Administration

Exhibit 28

United States Senate
WASHINGTON, DC 20510

December 11, 2019

The Honorable Alex Azar
Secretary
U.S. Department of Health and Human Services
200 Independence Avenue, S.W.
Washington, D.C. 20201

The Honorable James W. Carroll
Director
Office of National Drug Control Policy
750 Seventeenth Street, N.W.
Washington, D.C. 20503

The Honorable Uttam Dhillon
Acting Administrator
U.S. Drug Enforcement Administration
8701 Morrissette Drive
Springfield, Virginia 22152

Dear Secretary Azar, Director Carroll, and Acting Administrator Dhillon:

We write to inquire about your respective agencies' ongoing efforts with regard to scientific research on the potential health and therapeutic benefits of marijuana when used for medical purposes ("medical marijuana"). In light of the Drug Enforcement Administration's (DEA) most recent announcement that it will issue additional marijuana manufacturing licenses for research purposes — an announcement that comes three years after a similar yet unfulfilled DEA commitment — we are also requesting written guidance on how the DEA will make these licenses available to qualified researchers in a timely manner.[1]

Several of us wrote to your respective agencies in December 2015 and June 2016 to request detailed information regarding medical marijuana research and highlight the federal government's unique responsibility to coordinate these efforts.[2] Since we last wrote, an additional eight states have legalized marijuana for medicinal purposes, bringing the national total to thirty-three states plus the District of Columbia.[3] More than fifty-nine percent of Americans now believe marijuana use should be legal, and this number continues to grow.[4] To

[1] United States Drug Enforcement Administration, "DEA announces steps necessary to improve access to marijuana research," August 26, 2019, https://www.dea.gov/press-releases/2019/08/26/dea-announces-steps-necessary-improve-access-marijuana-research.
[2] Letter from Senator Elizabeth Warren et al. to Drug Enforcement Administration, Department of Health and Human Services and Office of National Drug Control Policy, December 21, 2015, https://www.warren.senate.gov/files/documents/2015-12-21_Letter_to_HHS_ONDCP_DEA.pdf; Letter from Senator Elizabeth Warren et al. to Drug Enforcement Administration and Department of Justice, June 23, 2016, https://www.warren.senate.gov/files/documents/2016-6-23_Letter_to_DOJ_and_DEA_on_rescheduling.pdf.
[3] Pew Research Center, "6 facts about marijuana," A.W. Geiger and John Gramlich, November 22, 2019, https://www.pewresearch.org/fact-tank/2019/06/26/facts-about-marijuana/.
[4] *Ibid.*

date, eleven states allow for the legal recreational adult-use of marijuana, and more than a dozen states have passed laws specifically allowing for access to cannabidiol.[5]

While millions of Americans are now lawfully able to use marijuana for recreational and medicinal purposes, there remains limited research on its therapeutic benefits. With an ever-growing number of Americans consulting their doctors about marijuana treatment options for conditions such as chronic pain, post-traumatic stress disorder, and terminal illnesses, it is imperative that your agencies make a concerted effort to improve our understanding of cannabis, its potential health benefits, and its health risks.

Several barriers, many of which have existed for decades, continue to limit this critical research. Under the Controlled Substances Act of 1970, marijuana remains a Schedule 1 substance, alongside dangerous and lethal substances such as heroin and methamphetamine; meanwhile, substances such as cocaine and Oxycontin are Schedule II substances. Marijuana's Schedule I classification as a drug with "no currently accepted medical use and a high potential for abuse," is, in itself, a significant barrier to conducting research.[6] Hampering these research opportunities and discouraging qualified, independent researchers attempting to conduct studies on the benefits of medical marijuana is detrimental to states that wish to thoughtfully implement their own marijuana laws. This research is crucial to developing a thorough understanding of medical marijuana and would be invaluable to doctors, patients, and lawmakers across the nation.

We appreciate the DEA's recent actions to begin to close this gap in knowledge and lack of access for qualified researchers and welcome its August 2019 announcement pledging to issue additional marijuana manufacturing licenses for research purposes. To better understand both the DEA's decision-making, as well as its work in conjunction with the U.S. Department of Health and Human Services (HHS) and Office of National Drug Control Policy (ONDCP) to expand medical marijuana research, we request answers to the following questions:

1. The DEA is responsible for issuing permits for the bulk manufacturing of marijuana for research and scientific purposes. The DEA recently issued notice of pending applications in order to increase the variety of marijuana available for these purposes.
   a. As of today, how many pending applications are currently awaiting DEA consideration?
   b. How many of these applications does the DEA expect to approve?
   c. How many of these applications have been withdrawn?
   d. What is the timeline for DEA to act on these applications?

2. In the past, ONDCP and DEA have suggested that the current supply of marijuana for research purposes was not a significant barrier.[7] Please provide detailed information on the current supply of marijuana, including a breakdown of all strains, amounts available in each strain, amount of each strain researchers have requested, and the amount of each

[5] *Ibid.*
[6] Drug Enforcement Administration, "Drug Scheduling," https://www.dea.gov/drug-scheduling.
[7] Letter from Senator Elizabeth Warren et al. to Drug Enforcement Administration, Department of Health and Human Services, and Office of National Drug Control Policy, December 21, 2015, https://www.warren.senate.gov/files/documents/2015-12-21_Letter_to_HHS_ONDCP_DEA.pdf

strain that is in surplus. How many new strains of marijuana does the DEA hope to gain access to the supply of through its August notice?

3. Marijuana is currently classified as a Schedule I drug, which, according to DEA and HHS, means it has "no currently accepted medical use and a high potential for abuse." Under the authorities outlined under the Controlled Substances Act, does DEA or HHS have plans to review the scheduling of marijuana?

4. Please describe the application process for qualified researchers who wish to conduct research using marijuana. How do your agencies plan to work together to encourage qualified research applicants to grow marijuana for research purposes?

5. Many states that allow for the medicinal use of marijuana, including Massachusetts, permit physicians to prescribe it for the treatment of chronic pain. Do your agencies have any plans to support research on the use of marijuana for the treatment of chronic pain, particularly as a treatment alternative to opioids?

With millions of American adults having access to recreational marijuana and a growing number seeking the drug for medicinal purposes, the federal government is not providing the necessary leadership and tools in this developing field. Evidence-based public policy is crucial to ensuring our marijuana laws best serve patients and health care providers. Federal agencies have a unique opportunity to collaborate with one another to expand our nation's understanding of marijuana's potential to create safe and effective therapies. We respectfully request that you provide responses to these questions no later than January 10, 2019.

We appreciate your attention to this matter.

Sincerely,

Elizabeth Warren
United States Senator

Ron Wyden
United States Senator

Kamala D. Harris
United States Senator

Kirsten Gillibrand
United States Senator

Cory A. Booker
United States Senator

Jeffrey A. Merkley
United States Senator

Edward J. Markey
United States Senator

Jacky Rosen
United States Senator

Exhibit 29

Department of Justice

STATEMENT OF THE
U.S. DEPARTMENT OF JUSTICE

MATTHEW J. STRAIT
SENIOR POLICY ADVISOR
DIVERSION CONTROL DIVISION
DRUG ENFORCEMENT ADMINISTRATION

BEFORE THE

HOUSE ENERGY AND COMMERCE COMMITTEE
SUBCOMMITTEE ON HEALTH
UNITED STATES HOUSE OF REPRESENTATIVES

FOR A HEARING ENTITLED

CANNABIS POLICY – FOR THE NEW DECADE

PRESENTED

JANUARY 15, 2020

Statement of the Department of Justice
Before the United States House of Representatives
Committee on Energy and Commerce
Subcommittee on Health
For a Hearing Entitled "Cannabis Policy – For the New Decade"
January 15, 2020

Chairman Eshoo, Ranking Member Burgess, and distinguished members of the Subcommittee, as the Senior Policy Advisor of the Diversion Control Division, Drug Enforcement Administration (DEA), within the Department of Justice (Department), I am integrally involved in the Department's efforts to expand access to research with controlled substances. The Diversion Control Division is charged with the responsibility to prevent, detect, and investigate the diversion of controlled pharmaceuticals and listed chemicals from legitimate sources while ensuring an adequate and uninterrupted supply for legitimate medical, commercial, and scientific needs. I appreciate the opportunity to share with you an update on the actions that DEA has taken as well as those that are intended to be undertaken in the near future with the goal of improving access to marihuana to meet the research needs of the United States.

Much like our partners at the Department of Health and Human Services (HHS), the Department and DEA fully support research into the effects of marihuana and the potential medical utility of its chemical constituents. In the last few years, the Department and DEA, in close collaboration with HHS and the Office of National Drug Control Policy (ONDCP), have made great strides in improving research with marijuana and its constituent parts. For example:

- In December 2015, DEA announced to all existing schedule I researchers that it was easing the requirements for obtaining a modification of their existing registration for those who wished to conduct research with cannabidiol (CBD), an effort directly aimed at improving research on the substance which ultimately contributed to the subsequent approval by Food and Drug Administration (FDA) of Epidiolex for use in the treatment of certain childhood epilepsy syndromes.[1]

- In early 2018, DEA announced that it had developed and implemented an online portal for researchers to safely and securely submit their qualifications, research protocol and institutional approvals for a proposed schedule I research registration thereby streamlining the acquisition of information necessary to process each application. Presently, the average time it takes for DEA and the FDA to review/approve an application is 52 days.

- Between 2017 and 2020, DEA increased the aggregate production quota[2] for marihuana by 575 percent from 472 kg in 2017 to 3,200 kg in 2020. The increase has directly supported the National Institute on Drug Abuse's (NIDA) provision of various strains of marihuana to researchers in the United States.

[1] See https://www.fda.gov/news-events/press-announcements/fda-approves-first-drug-comprised-active-ingredient-derived-marijuanamarihuana-treat-rare-severe-forms
[2] The "aggregate production quota" for schedule I and II controlled substances.

- Over the last 5 years, there has been a 155 percent increase in the number of active researchers registered with DEA to conduct research with marihuana, marihuana extracts and marihuana derivatives (from 237 in November 2014 to 605 in October 2019).

- At present, more research is conducted on marihuana, marihuana extracts, and marihuana derivatives than any other Schedule I substance in the United States. More than 70 percent of DEA's total Schedule I research registrant population (605 of 829 as of December 2019) conducts research on these substances.

As detailed below, to further expand medical and scientific research, the Department and DEA are taking a number of actions to increase the number of registered marihuana manufacturers (or growers), consistent with applicable law, to meet a demonstrated need for different varieties.

The Controlled Substances Act and Marihuana

Under the Controlled Substances Act (CSA), every controlled substance is classified into one of five schedules based upon its potential for abuse, its currently accepted medical use in treatment in the United States, and the degree of dependence the drug or other substance may cause. 21 U.S.C. § 812. The initial schedules of controlled substances established by Congress are found at 21 U.S.C. § 812(c), and the current list of all scheduled substances is published at 21 CFR part 1308. Substances in Schedule I are those that have a high potential for abuse, no currently accepted medical use in treatment in the United States, and a lack of accepted safety for use under medical supervision. 21 U.S.C. § 812(b)(1).

Congress specifically placed "marihuana" in Schedule I of the CSA in 1970[3] and defined "marihuana" as all parts of the plant Cannabis sativa L., with certain exceptions for the parts of the plant that are not the source of cannabinoids. Among the parts of the cannabis plant included in the definition of marihuana are: the flowering tops, the leaves, viable seeds, and the resin extracted from any part of the plant, and every compound, manufacture, salt, derivative, mixture, or preparation of the plant, its seeds or resin. 21 U.S.C. § 812(c) Schedule I; 21 U.S.C. § 802(16); 21 C.F.R. § 1308.11(d).

The Agriculture Improvement Act of 2018 (Pub.L. 115-334, referred to as the AIA) was signed into law on December 20, 2018. It provided a new statutory definition of "hemp" and amended the definition of "marihuana" under the CSA. The AIA modified the definition by adding that the "term 'marihuana' does not include hemp, as defined in section 1639*o* of Title 7." 21 U.S.C. § 802(16)(B). Furthermore, the AIA added a definition of "hemp" to 7 U.S.C. 1639o, which reads as follows:

> The term "hemp" means the plant Cannabis sativa L. and any part of the plant including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a deltat-9-tetrahydrocannabinol concentration of not more than 0.3% on a dry weight basis.

[3] Controlled Substances Act, Section 100 of the Comprehensive Drug Abuse Prevention and Control Act of 1970, Pub.L. 91-513 Oct. 27, 1970.

The CSA and the Federal Food, Drug, and Cosmetic Act (FDCA) contain provisions that are specifically designed to allow for both clinical research with, and treatment uses of, investigational drugs containing controlled substances, provided certain steps are taken to protect the rights, safety, and welfare of human subjects. The FDA drug approval process, as established and modified by Congress, ensures that safe and effective new medicines are available as soon as possible for the largest numbers of patients; DEA and the Department stand committed to assist our federal partners in this process.

Current Statutory Framework Governing the Registration of Certain Individuals Handling Marihuana under the CSA

Under the CSA, DEA is responsible for registering growers who can produce an adequate and uninterrupted supply of marihuana under adequately competitive conditions for such research.[4] The University of Mississippi (UMiss) has, for several decades, applied for and received a registration from DEA to grow marihuana. This work is performed pursuant to a contractual agreement with NIDA for the production of research-grade marihuana for federally-approved research.[5] Presently, there are no other DEA-registered bulk manufacturers of marihuana authorized to cultivate marihuana for research purposes. The DEA is actively taking steps to expand the program, which should result in additional registered growers and a larger, more diverse variety of marihuana for research.

The CSA requires all individuals who wish to perform research with marihuana to register with DEA. In those instances, DEA's role is to ensure that proper safeguards are in place to prevent diversion (e.g., security and recordkeeping), while HHS (delegated to FDA) is charged with determining the qualifications and competency of the researcher as well as reviewing the merits of the protocol.[6] Those who wish to perform research with marihuana (or any schedule I controlled substance) must submit certain information to assist DEA and HHS with their respective roles:

1. Information about the Investigator – name, address, curriculum vitae and institutional affiliation
2. Information about the Research Project – Purpose, description of the research (i.e., protocol), the location for the research and security
3. Authority – Document approval by the research institution

Importantly, the applicant also provides information about the name of the substance under investigation, the amount required and the proposed source of supply.[7] With regard to this provision, DEA and HHS work in concert to ensure that the source of the schedule I controlled substance is from a DEA registrant to ensure that the substance was produced in accordance with state, federal, and international law. Furthermore, as coincident activity a DEA registered schedule I researcher, may import marijuana for research purposes so long as the activity is

[4] 21 U.S.C. 823(a)(1). https://www.deadiversion.usdoj.gov/21cfr/21usc/823.htm
[5] NIDA has established procedures governing the process for providing marihuana to non-federally approved researchers as well.
[6] 21 U.S.C. 823(f). https://www.deadiversion.usdoj.gov/21cfr/21usc/823.htm
[7] 21 CFR 1301.18

consistent with their protocol and from a legitimate source as authorized through the regulated importation process.

DEA has never denied an application to conduct bona fide research with marihuana from a researcher who has received a favorable recommendation from HHS. As of December 12, 2019, there were 605 DEA-registered schedule I researchers authorized to conduct research with marihuana, marihuana extracts and/or tetrahydrocannabinols in the United States.

DEA's August 2016 Policy Statement and Subsequent Efforts to Expand the Number of Registrants to Grow Marihuana

In August 2016, after consultations with both FDA and NIDA, and following the denial of two petitions from former Governors to reschedule marihuana,[8] DEA published a policy statement in the Federal Register (81 FR 53846) ("2016 Policy Statement"). The 2016 Policy Statement addressed applications by persons seeking to become registered under the CSA to grow marihuana (i.e., manufacture) in order to supply DEA-registered researchers in the United States for bona fide research.

Since publication of the 2016 Policy Statement, the Department of Justice has subsequently engaged in a review of the Policy Statement and the proposed changes, and determined that adjustments to DEA's policies and procedures may be necessary under applicable U.S. law to be consistent with certain treaty functions. As DEA explained in its August 2019 letter to each of the then-33 pending applicants who sought authority to grow marihuana, given that the size of the applicant pool is unprecedented in DEA's experience, the agency has determined that adjustments to its policies and practices with respect to the marihuana growers program are necessary to fairly evaluate the applicants under the factors outlined in 21 U.S.C. 823(a), including 823(a)(1), which requires that DEA "limit the … bulk manufacture of [Schedule I and II] controlled substances to a number of establishments which can produce an adequate and uninterrupted supply of these substances under adequately competitive conditions for legitimate medical, scientific, research and industrial purposes."

In addition, since publication of the 2016 Policy Statement, the Department of Justice, in consultation with other federal agencies, has been engaged in a policy review process to ensure that the marihuana growers program is consistent with applicable laws and treaties. That review process remains ongoing; however, had progressed to the point where DEA was able to issue a notice of applications on August 27, 2019, (84 FR 44920).

In August 2019, DEA acknowledged that the as a result of the AIA, some who applied for a registration pursuant to the 2016 Policy Statement for the purpose of growing cannabis that contains no more than 0.3 percent delta-9-tetrahydrocannabinols on a dry weight basis, including cannabis that contains cannabidiol and falls below the delta-9-tetrahydrocannabinol threshold, no longer need to register for the DEA for that purpose. Accordingly, those applicants were allowed to withdraw their application and were eligible to receive a refund from DEA for fees paid at the time of their application.

[8] 81 FR 53687

In the near future, DEA intends to propose regulations that would govern persons seeking to become registered with DEA to grow marihuana as bulk manufacturers, consistent with applicable law, taking into account recent changes in the Controlled Substances Act. At present, a notice of proposed rulemaking is under review by the Office of Management and Budget.

Throughout this process, DEA and the Department remain committed to supporting research opportunities and these advancements are in effort to register more marihuana manufacturers, and expand the amount and type of marijuana grown for research purposes.

Conclusion

The Diversion Control Division within DEA is charged with preventing the diversion of legitimate sourced controlled substances while ensuring an adequate and uninterrupted supply for legitimate medical, commercial, and scientific needs. We are steadfast in our effort to fulfill that mission, and to work with our partners to improve this process.

DEA is committed, consistent with the CSA, to assisting the health care needs of patients and supporting research involving marihuana. DEA shares the view that medical decisions should be based on science and adherence to the established drug approval process which ensures that only safe and effective drugs are approved to be available in the United States. DEA continues to make the approval of schedule I researchers a top priority and we look forward to continuing our efforts with our interagency partners to expand research efforts for all controlled substances, including marihuana.

Thank you for the opportunity to testify today and we look forward to continuing to work with Congress on this important topic.

Exhibit 30

Billing Code 4410-09-P

DEPARTMENT OF JUSTICE

Drug Enforcement Administration

21 CFR Parts 1301 and 1318

[Docket No. DEA-506]

RIN 1117-AB54

Controls to Enhance the Cultivation of Marihuana for Research in the United States

AGENCY: Drug Enforcement Administration, Department of Justice.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Drug Enforcement Administration is proposing to amend its regulations to comply with the requirements of the Controlled Substances Act, including consistency with treaty obligations, in order to facilitate the cultivation of marihuana for research purposes and other licit purposes. Specifically, this proposed rule would amend the provisions of the regulations governing applications by persons seeking to become registered with DEA to grow marihuana as bulk manufacturers and add provisions related to the purchase and sale of this marihuana by DEA.

DATES: Comments must be submitted electronically or postmarked on or before [INSERT DATE 60 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: To ensure proper handling of comments, please reference "[RIN 1117-AB54/Docket No. DEA-506]" on all electronic and written correspondence, including any attachments.

- *Electronic comments:* DEA encourages that all comments be submitted electronically through the Federal eRulemaking Portal, which provides the ability to type short comments directly into the comment field on the webpage or attach a file for lengthier comments. Please go to *http://www.regulations.gov* and follow the online instructions at that site for submitting comments. Upon completion of your submission, you will receive a Comment Tracking Number for your comment. Please be aware that submitted comments are not instantaneously available for public view on *Regulations.gov*. If you have received a Comment Tracking Number, your comment has been successfully submitted and there is no need to resubmit the same comment. Commenters should be aware that the electronic Federal Docket Management System will not accept any comments after 11:59 p.m. Eastern Time on the last day of the comment period.

- *Paper comments:* Paper comments that duplicate electronic submissions are not necessary. Should you wish to mail a paper comment *in lieu of* an electronic comment, it should be sent via regular or express mail to: Drug Enforcement Administration, Attn: DEA Federal Register Representative/DPW, 8701 Morrissette Drive, Springfield, Virginia 22152-2639.

- *Paperwork Reduction Act Comments:* All comments concerning collections of information under the Paperwork Reduction Act must be submitted to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attention: Desk Officer for DOJ, Washington, DC 20503. Please state that your comment refers to RIN 1117-AB54/Docket No. DEA-506.

FOR FURTHER INFORMATION CONTACT: Scott A. Brinks, Regulatory Drafting and Policy Support Section (DPW), Diversion Control Division, Drug Enforcement Administration; Mailing Address: 8701 Morrissette Drive, Springfield, Virginia 22152-2639; Telephone: (571) 362-3261.

SUPPLEMENTARY INFORMATION:

Posting of Public Comments

Please note that all comments received in response to this docket are considered part of the public record. They will, unless reasonable cause is given, be made available by DEA for public inspection online at *http://www.regulations.gov*. Such information includes personal identifying information (such as your name, address, etc.) that you voluntarily submit. The Freedom of Information Act applies to all comments received. If you want to submit personal identifying information (such as your name, address, etc.) as part of your comment, but do not want it to be made publicly available, you must include the phrase "PERSONAL IDENTIFYING INFORMATION" in the first paragraph of your comment. You must also place all of the personal identifying information you do not want made publicly available in the first paragraph of your comment and identify what information you want redacted.

If you want to submit confidential business information as part of your comment, but do not want it to be made publicly available, you must include the phrase "CONFIDENTIAL BUSINESS INFORMATION" in the first paragraph of your comment. You must also prominently identify the confidential business information to be redacted within the comment.

Comments containing personal identifying information or confidential business information identified as directed above will be made publicly available in redacted form. If a comment has so much confidential business information that it cannot be effectively redacted, all or part of that comment may not be made publicly available. Comments posted to *http://www.regulations.gov* may include any personal identifying information (such as your name, address, etc.) included in the text of your electronic submission that is not identified as directed above as confidential.

An electronic copy of this proposed rule is available at *http://www.regulations.gov* for ease of reference.

Background and Purpose of this Proposed Rule

Under the Controlled Substances Act (CSA), all persons who seek to manufacture a controlled substance must apply for and obtain a DEA registration.[1] 21 U.S.C. 822(a)(1). The CSA defines "manufacture" to include the "production" of a controlled substance, which includes, among other things, the planting, cultivation, growing, or harvesting of a controlled substance. 21 U.S.C. 802(15), (22). Thus, any person who seeks to plant, cultivate, grow, or harvest marihuana[2] to supply researchers or for other uses permissible under the CSA (such as product development) must obtain a DEA manufacturing registration. Because marihuana is a schedule I controlled substance, applications by persons seeking to become registered to manufacture marihuana are governed by 21 U.S.C. 823(a). *See generally* 76 FR 51403 (2011); 74 FR 2101 (2009), *pet. for rev. denied*, *Craker v. DEA*, 714 F.3d 17 (1st Cir. 2013). Under section 823(a), for DEA to grant a registration, the DEA Administrator must determine that two conditions are satisfied: (1) the registration is consistent with the public interest (based on the enumerated criteria in section 823(a)), and (2) the registration is consistent with U.S. obligations under the Single Convention on Narcotic Drugs, 1961 ("Single Convention" or "Treaty"), 18 U.S.T. 1407.[3]

In 2016, DEA issued a policy statement aimed at expanding the number of manufacturers who could produce marihuana for research purposes. *See* Applications to Become Registered

[1] All functions vested in the Attorney General by the CSA have been delegated to the Administrator of DEA. 28 CFR 0.100(b).
[2] This document uses both the CSA spelling "marihuana" and the modern spelling "marijuana" interchangeably.
[3] Section 823(a) provides that the registrations to manufacture controlled substances in schedule I or II must be "consistent with the public interest and with United States obligations under international treaties, conventions, or protocols in effect on May 1, 1971." The Single Convention entered into force for the United States on June 24, 1967. *See* Single Convention, 18 U.S.T. 1407.

under the Controlled Substances Act to Manufacture Marijuana to Supply Researchers in the United States, 81 FR 53846 (Aug. 12, 2016). Subsequently, the Department of Justice (DOJ) undertook a review of the CSA, including the provisions requiring consistency with obligations under international treaties such as the Single Convention, and determined that certain changes to its 2016 policy were needed. The pertinent Treaty provisions are found in articles 23 and 28 of the Single Convention, which are summarized below. Additionally, DEA believes that these changes will enhance and improve research with marihuana and facilitate research that could result in the development of marihuana-based medicines approved by the Food and Drug Administration (FDA).

This proposed rule is being issued pursuant to the Administrator's authority under the CSA "to promulgate rules and regulations and to charge reasonable fees relating to the registration and control of the manufacture, distribution, and dispensing of controlled substances," 21 U.S.C. 821, and to "promulgate and enforce any rules, regulations, and procedures which he may deem necessary and appropriate for the efficient execution of his functions under [the CSA]," 21 U.S.C. 871(b).

A. Relevant Provisions of the Single Convention

Because the terminology used in the Single Convention is somewhat different from that in the CSA, a brief explanation is warranted. The Single Convention uses the terms "cannabis," "cannabis plant," and "cannabis resin"—all of which are generally encompassed by the CSA definition of "marihuana" in 21 U.S.C. 802(16)).[4] The Single Convention defines "cannabis plant" as "any plant of the genus Cannabis." Single Convention art. 1(1)(c). The Single Convention defines "cannabis" as the "flowering or fruiting tops of the cannabis plant (excluding the seeds and leaves when not accompanied by the tops) from which the resin has not been extracted." *Id.* art. 1(1)(b). The Single Convention defines "cannabis resin" as the "separated resin, whether crude or purified, obtained from the cannabis plant." *Id.* art. 1(1)(d).

Article 28 of the Single Convention states in paragraph 1: "If a Party permits the cultivation of the cannabis plant for the production of cannabis or cannabis resin, it shall apply thereto the system of controls as provided in article 23 respecting the control of the opium poppy." Paragraph 2 of that article excludes from the Convention the cultivation of cannabis for industrial or horticultural purposes. Because the United States permits the cultivation of marihuana for the production of cannabis and cannabis resin currently only for research purposes, it is obligated under the Treaty to apply to the marihuana plant cultivated for these purposes the "system of controls" provided in article 23 respecting the control of the opium poppy.

The Commentary to the Single Convention contains the following explanation of articles 23 and 28 within the overall framework of the Treaty:

[4] As discussed below, the Agriculture Improvement Act of 2018, Pub. L. 115-334, removed hemp from the CSA definition of marihuana. This proposed rule applies only to cannabis that is included in the CSA definition of marihuana.

> The system of control over all stages of the drug economy which the Single Convention provides has two basic features: limitation of narcotic supplies of each country . . . to the quantities that it needs for medical and scientific purposes, and authorization of each form of participation in the drug economy, that is, licensing of producers, manufacturers and traders . . . . *In the case of the production of opium, coca leaves, cannabis and cannabis resin, this régime is supplemented by the requirement of maintaining government monopolies for the wholesale and international trade in these drugs in countries which produce them* . . . .

Secretary-General of the United Nations, Commentary on the Single Convention on Narcotic Drugs, 1961, 263 (1973) (emphasis added) (footnotes omitted).[5]

Article 23(2) of the Single Convention, made applicable to marijuana cultivation by Article 28, contains five requirements for the supervision, licensing, and distribution of marijuana.[6]

(a) Designate the areas in which, and the plots of land on which, cultivation of the cannabis plant for the purpose of producing cannabis or cannabis resin shall be permitted.

(b) Ensure that only cultivators licensed by the agency shall be authorized to engage in such cultivation.

(c) Ensure that each license shall specify the extent of the land on which the cultivation is permitted.

(d) Require all cultivators of the cannabis plant to deliver their total crops of cannabis and cannabis resin to the agency and ensure that the agency purchases and takes

[5] The United Nations' Economic and Social Council requested that the Secretary-General prepare the Commentary "in the light of the relevant conference proceedings and other material" in order to aid governments in applying the Single Convention. The Commentary (1973) is not binding on Parties to the Convention. Economic and Social Council Resolution 1962/914(XXXIV) D (Aug. 3, 1962).

[6] The Single Convention provides that the five functions of article 23, paragraph 2 "shall be discharged by a single government agency if the constitution of the Party concerned permits it." Single Convention art. 23(3). Nothing in the Constitution would preclude the United States from discharging all of those controls through one government agency. The Commentary to the Single Convention notes that this is in order to facilitate national planning and coordinated management of the various tasks imposed upon a country by Article 23, and that in countries where more than one agency is needed on constitutional grounds, administrative arrangements should be made to ensure the required coordination.

physical possession of such crops as soon as possible, but not later than four months after the end of the harvest.

(e) Have the exclusive right of importing, exporting, wholesale trading, and maintaining stocks of cannabis and cannabis resin, except that this exclusive right need not extend to medicinal cannabis, cannabis preparations, or the stocks of cannabis and cannabis resin held by manufacturers of such medicinal cannabis and cannabis preparations.[7]

DEA already directly performs functions (a), (b), and (c) by virtue of the CSA registration system as applied to manufacturers of marihuana. In order to ensure that DEA complies with the CSA and grants registrations that are consistent with relevant treaty provisions, namely articles 23 and 28 of the Single Convention, DEA proposes to directly perform functions (d) and (e) as well. This proposed rule would amend DEA's regulations so that DEA directly carries out these remaining two functions.

DEA also recognizes that the Department of Health and Human Services (HHS) has, for nearly 50 years, maintained an essential program aimed at ensuring that marihuana is available to meet the research and scientific needs of the United States. The regulations proposed here, if finalized, will require some changes to this program, but DEA is committed to ensuring that the National Institute on Drug Abuse (NIDA) program continues with minimal disruption and there is no impact on the availability of marihuana through the NIDA Drug Supply Program (DSP).

[7] The meanings of the terms "medicinal cannabis" and "cannabis preparations" are addressed later in this document. Article 23, paragraph 2(e) also refers to "opium alkaloids." However, due to distinctions between the opiates derived from the opium poppy and the cannabinoids derived from the cannabis plant, the notion of "cannabis alkaloids" is inapplicable.

After the publication of the 2016 policy statement, DOJ advised DEA that it must adjust its policies and practices to ensure compliance with the CSA, including the CSA's requirement that registrations be consistent with the Single Convention. Therefore, the regulations being proposed herein, if finalized, would ensure that DEA regulations comply with applicable law. Within that framework, DEA is proposing changes to support using marihuana (including extracts and substances derived therefrom) cultivated in the United States to perform research which, among other things, may lead to the approval of FDA-approved medicines. Thus, the proposed rule, if adopted, would supersede the 2016 policy statement.

To address the foregoing considerations, the proposed rule would add regulations stating:

(1) All registered manufacturers who cultivate cannabis shall deliver their total crops of cannabis to DEA. DEA shall purchase and take physical possession of such crops as soon as possible, but not later than four months after the end of the harvest. DEA may accept delivery and maintain possession of such crops at the registered location of the registered manufacturer authorized to cultivate cannabis consistent with the maintenance of effective controls against diversion. In such cases, DEA shall designate a secure storage mechanism at the registered location in which DEA may maintain possession of the cannabis, and DEA will control access to the stored cannabis. If DEA determines that no suitable location exists at the registered location of the registered manufacturer authorized to cultivate cannabis, then DEA shall designate a location for the authorized grower to deliver the crop as soon as possible, but not later than four months after the end of the harvest. However, in all cases the registrant must comply with the security requirements specified in 21 CFR part 1301.

(2) DEA shall, with respect to cannabis, have the exclusive right of importing, exporting, wholesale trading, and maintaining stocks other than those held by registered manufacturers and

distributors of medicinal cannabis or cannabis preparations. Such exclusive right shall not extend to medicinal cannabis or cannabis preparations. DEA may exercise its exclusive right by authorizing the performance of such activities by appropriately registered persons. DEA will require prior written notice of each proposed importation, exportation, or distribution of cannabis that specifies the quantity of cannabis to be imported, exported, or distributed and the name, address, and registration number of the registered manufacturer or researcher to receive the cannabis before authorizing the importation, exportation, or distribution. All importation and exportation shall be performed in compliance with 21 CFR part 1312, as applicable. Under no circumstance shall a registered manufacturer authorized to grow cannabis import, export, or distribute cannabis without the express written authorization of DEA.

(3) A registered manufacturer authorized to grow cannabis shall notify DEA in writing of its proposed date of harvest at least fifteen days before the commencement of the harvest.

It should be noted that the timing of when DEA would take physical possession of the crops, if delayed, would not only increase the risk of diversion, but would also adversely impact the quality of the crop. Whereas DEA is proposing to take physical possession not later than four months from the time of harvest, it is DEA's intent to take physical possession as soon as possible and to distribute marihuana as soon as is practical to those who are authorized to receive it.

The exceptions made for "medicinal cannabis or cannabis preparations" also warrant explanation. In view of the text of the Single Convention, and taking into account the current wording of Federal law,[8] the regulations being proposed would define these terms as follows:

[8] Among other things, these definitions take into account the current CSA definition of marihuana (21 U.S.C. 802(16)), which was amended in 2018 to exclude "hemp" as defined in section 297A of the Agricultural Marketing Act of 1946 (7 U.S.C. 1639*o*(1)).

- Medicinal cannabis means a drug product made from the cannabis plant, or derivatives thereof that can be legally marketed under the Federal Food, Drug, and Cosmetic Act. However, such term does not include any material, compound, mixture, or preparation that falls outside the CSA definition of marihuana.
- Cannabis preparation means cannabis that was delivered to DEA and subsequently converted by a registered manufacturer into a mixture (solid or liquid) containing cannabis, cannabis resin, or extracts of cannabis. However, such term does not include any material, compound, mixture, or preparation that falls outside the CSA definition of marihuana.

Thus, under the proposed rule, DEA would have the exclusive right of importing, exporting, wholesale trading, and maintaining stocks of marihuana other than those held by DEA-registered manufacturers and distributors of medicinal cannabis or cannabis preparations. Further, this exclusive right would not apply to medicinal cannabis or cannabis preparations.

To summarize those provisions of the proposed rule that are intended to ensure that registrations are granted in compliance with the CSA as the number of registered manufacturers increases, all marihuana grown by DEA-registered manufacturers in the United States would be delivered by such registrants to DEA no later than four months after the end of the harvest. Thereafter, DEA would authorize exportation, distribution, and maintenance of stocks of such marihuana with two important exceptions:

(1) DEA-registered manufacturers of (a) an FDA-approved marihuana-derived drug (i.e., "medicinal cannabis"), and (b) "cannabis preparations" would be permitted to maintain stocks of

cannabis materials obtained from DEA for the purpose of producing such drugs or preparations;[9] and

(2) Once marihuana material that was previously purchased by DEA is subsequently converted by a DEA-registered manufacturer into (a) an FDA-approved drug ("medicinal cannabis") or (b) a "cannabis preparation," the material no longer would be subject to the foregoing exclusive right and could be further distributed or dispensed by a DEA registrant in any manner authorized under the CSA. DEA is committed to ensuring this new requirement is implemented in a manner that supports the policy goal of facilitating research involving marijuana and its chemical constituents.

B. Activities Performed by Bulk Manufacturers of Marihuana and the Application of these Proposed Regulations on those Activities

Based on approximately 35 pending applications resulting from publication of its 2016 policy statement, DEA anticipates that those bulk manufacturers who would obtain a registration from DEA to grow marihuana would be one (or more) of three different types. In this section, DEA describes each type and how the proposed regulations, if finalized as proposed, would impact those registrants with regard to functions (1) and (2) described in the previous section.

(1) A Bulk Manufacturer Who Grows Marihuana for Its Own Research or Drug Development Purposes.

A number of applicants seek to grow marihuana for their own research endeavors, including some who wish to develop an FDA-approved medicine from extracts or derivatives of the

[9] As indicated above, the requirement that registered growers deliver all cannabis to DEA no later than four months after the end of the harvest applies in *all* situations – even where the cannabis will later be distributed by DEA back to the grower for further use. Thus, the above exception that allows DEA-registered manufacturers of medicinal cannabis and cannabis preparations to maintain stocks of cannabis materials for the purpose of producing such drugs or preparations only applies where the raw cannabis material was previously delivered to DEA.

marihuana plant. Based on the accompanying information supplied by the applicant to DEA in connection with their application, these applicants would list themselves as a "purchaser," meaning that once their crop was harvested, they would seek to use the marihuana for their internal research purposes. Applicants must obtain a separate schedule I research registration from DEA to perform research with marihuana in accordance with 21 CFR 1301.13 and 1301.32. However, bulk marihuana growers may manufacture marihuana for use by other researchers under a manufacturing registration (and pursuant to a quota granted to them by DEA for that purpose under 21 CFR 1303.21(a)).

For applicants within this category, within four months of harvest, DEA would travel to the DEA-registered location, purchase, and take title to the crop by issuing the grower a DEA Form 222.[10] Once DEA has taken title to the crop, it would then distribute a quantity of marihuana that does not exceed the company's DEA-issued procurement quota back to that same manufacturer. In this way, DEA would take physical possession of the crop and control its distribution. Additionally, the material owned by the government will be maintained at the DEA-registered manufacturer's location and DEA would maintain its ability to access the storage location at which such crops are located as it deemed necessary.

(2) A Bulk manufacturer Who Supplies Marihuana to Other DEA Registrants, including National Institutes of Health Funded and non-National Institutes of Health Funded Researchers.

Some applicants are seeking to grow marihuana for use by other DEA registrants including "non-bulk" manufacturers and schedule I researchers, including National Institutes of Health

[10] DEA would take title to an amount up to the applicant's manufacturing quota. Growing marihuana in excess of a manufacturing quota is a violation of federal law. 21 U.S.C. 842(b). Thus, any marihuana grown in excess of a manufacturing quota would be subject to seizure and destruction. *See id*. 881(g).

(NIH) funded and non-NIH funded researchers. This sub-set of bulk manufacturers would be required to obtain from each customer a bona fide supply agreement, listing the name and address of the end user, the end user's DEA registration number, the quantity of marihuana to be supplied, and the price that the end user and grower have mutually agreed upon. DEA will consider this information, along with additional information, when establishing an individual manufacturing quota for the grower.

For applicants that fall within this sub-set, within four months of harvest, DEA would travel to the DEA-registered location, purchase, and take title to the crop by issuing the grower a DEA Form 222.[11] For this reason, each grower must provide written notice to DEA of its proposed date of harvest at least fifteen days prior to the commencement of the harvest. Once DEA has purchased and taken title to the crop, the material would be maintained, under seal, in DEA's possession in the manufacturer's schedule I vault until such time that a distribution is necessary. In this scenario, DEA may distribute (or export) the marihuana directly or may choose to authorize the grower to distribute marihuana on the government's behalf. Again, marihuana owned by the government is maintained at the DEA-registered manufacturer's site where DEA would maintain its ability to access the storage location at which such crops are located as it deemed necessary.

(3) A Bulk Manufacturer Who Supplies Marihuana to Support NIDA's Drug Supply Program

[11] As in the first scenario, DEA only would take title to an amount up to the applicant's manufacturing quota. Any marihuana grown in excess of a manufacturing quota would be subject to seizure and destruction. *See* 21 U.S.C. 842(b), 881(g).

Over the last several decades, NIDA has administered a contract to produce high quality marihuana for use by researchers who have obtained federal funding (grants) for such research.[12] This contract has been awarded to the National Center for Natural Products Research at the University of Mississippi (National Center). In accordance with that contract and DEA regulations, NIDA assesses the quantity of marihuana that is necessary to be grown for research purposes in a given year and communicates that information to both the National Center and DEA. The National Center applies for, and must first obtain, a manufacturing quota from DEA and is then authorized to grow marihuana up to the limit established by their DEA-issued quota. At the time of harvest, a portion of that material is held in inventory at the National Center while other portions are distributed to another DEA registrant, Research Triangle Institute (RTI). Currently, at the direction of NIDA, both RTI and the National Center may prepare marihuana in a manner which is suitable for research studies and ship it to researchers. In these instances, marihuana held in inventory at the National Center and RTI are the property of NIDA. The regulations proposed in this notice of proposed rulemaking (NPRM) are intended to enhance and improve upon existing DEA regulations that supported the NIDA DSP and will facilitate research that may lead to the development of FDA-approved medicines.

This regulation, if finalized, would require changes to the current scheme described above. Although NIDA can, and would, continue to administer the contract in support of its DSP and the National Center (or other NIDA contract holder) could continue to grow and produce marihuana in support of research pursuant to that contract (for as long as that contract is renewed), within four months of harvest, DEA would travel to the National Center at the time of

[12] The Department of Health and Human Services maintains procedures for providing this same marihuana to non-NIH funded researchers as well.

harvest and take title and possession to the crop by issuing the National Center a DEA Form 222.[13] Once DEA has taken title and possession of the crop, the material would be maintained, under seal, in DEA's possession in the National Center's schedule I vault until such time that a distribution to another DEA registrant is authorized. In this scenario, DEA may distribute (or export) the marijuana directly or may choose to authorize the National Center to distribute marihuana on the government's behalf. In both situations, DEA's distributions would be in accordance with NIDA's recommendation. And, as such, DEA does not envision a scenario in which it would deny or delay a distribution to a duly registered schedule I researcher authorized to handle marihuana. Marihuana owned by DEA would be maintained at the National Center, where DEA would maintain its ability to access the storage location at which its crops are located.

C. Application of the Public Interest Factors

As indicated, in addition to the foregoing treaty considerations, DEA may grant a registration to manufacture a schedule I or II controlled substance only where the Administrator determines that the registration is consistent with the public interest, based on the criteria listed in 21 U.S.C. 823(a). The first of those criteria, set forth in subsection 823(a)(1), provides that, for the purpose of maintaining effective controls against diversion, the number of registered bulk manufacturers of a given schedule I or II controlled substance should be limited to that which can produce an adequate and uninterrupted supply of marihuana under adequately competitive conditions.[14]

[13] As above, DEA only would take title to an amount up to the National Center's manufacturing quota, with amount grown in excess of the manufacturing quota subject to seizure and destruction. *See* 21 U.S.C. 842(b), 881(g).
[14] For a detailed explanation of subsection 823(a) (1), see 74 FR at 2127–33.

The proposed rule would explain how DEA will evaluate whether a particular application is consistent with the public interest factors of 21 U.S.C. 823(a), including factor 823(a)(1). As discussed above, a bona fide supply agreement between a grower and a duly registered schedule I researcher or manufacturer provides evidence that an applicant's registration is necessary to produce an adequate and uninterrupted supply of marihuana under adequately competitive conditions. An applicant proposing to grow marihuana to supply its own research may also be deemed to have satisfied the public interest factor of 823(a)(1) upon the presentation of evidence that it possesses a registration to conduct research with marihuana under 21 CFR 1301.32. Such a researcher will only be granted quota to the extent authorized by its approved research protocol.

The proposed rule further provides that the Administrator's determination of which applicants to select will be consistent with the public interest factors in section 823(a), with particular emphasis on the criteria discussed in the preceding paragraph as well as the following:

(1) The applicant's ability to consistently produce and supply marihuana of a high quality and defined chemical composition; and

(2) Whether the applicant has demonstrated prior compliance with the CSA and DEA regulations.

The preceding criteria are designed to result in registration of those manufacturers of marihuana that can most efficiently supply the lawful needs of the U.S. market in terms of quantity and quality.[15] These criteria are further aimed at selecting applicants that can be

[15] The proposed rule provides that, in determining the legitimate demand for marihuana and its derivatives in the United States, the Administrator shall consult with the Department of Health and Human Services, including its components.

entrusted with the responsibility of a DEA registration and complying with the corresponding obligations under the CSA and DEA regulations.

As indicated above, following the publication of the 2016 policy statement, DEA received numerous applications by persons seeking to become registered as bulk manufacturers of marihuana. There are approximately 35 such applications currently pending. As explained above, the CSA requires DEA to limit the total number of registered bulk manufacturers of a given schedule I or II controlled substance to that necessary to produce an adequate and uninterrupted supply under adequately competitive conditions. In consultation with HHS, DEA wishes to avoid a situation in which the agency is in the midst of evaluating these applications and has to begin an evaluation anew each time it accepts a new marihuana grower application for filing. Thus, the proposed rule provides that, with a limited exception, applications accepted for filing after the date the final rule becomes effective will not be considered pending until all applications accepted for filing on or before the date the final rule becomes effective have been granted or denied by the Administrator.

D. Consideration of the Amendments to the CSA Made by the Hemp Provisions of the Agriculture Improvement Act of 2018

The Agriculture Improvement Act of 2018 (AIA), Pub. L. 115-334, which became effective December 20, 2018, contained various provisions regarding the cultivation of hemp. The AIA definitions hemp as the plant Cannabis sativa L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis. 7 U.S.C. 1639*o*(1). The AIA amended the CSA definition of marihuana to exclude hemp. Thus, anything that falls within the foregoing definition of hemp

is no longer a controlled substance, and the CSA's requirements no longer apply to such substances. Accordingly, this proposed rule would apply only to persons seeking authorization under the CSA (i.e., seeking a DEA registration) to manufacture marihuana that involves the planting, cultivation, growing, or harvesting of marihuana as that term is currently defined in the CSA (21 U.S.C. 802(16)).[16]

E. Factors Affecting Prices for the Purchase and Sale of Marihuana by DEA

As stated above, under articles 23 and 28 of the Single Convention, the government agency must – in addition to taking physical possession – *purchase* all lawfully grown cannabis crops within four months of harvest. Thus, under the proposed rule, DEA will purchase marihuana grown by DEA-registered manufacturers and subsequently sell the marihuana to DEA registrants who seek to acquire it for research, product development, or other lawful purposes under the CSA.

In purchasing such marihuana, DEA intends to use the Diversion Control Fee Account, as established in 21 U.S.C. 886a. Thus, DEA would, under the proposed rule, need to take into account its obligation under 21 U.S.C. 886a(1)(C) to charge fees under its diversion control program "at a level that ensures the recovery of the full costs of operating the various aspects of that program." There are two potential categories of fees that could be used to recover the costs of carrying out the proposed new aspects of the diversion control program relating to cannabis: (1) fees charged to persons who apply for, and seek to renew, a DEA registration to manufacture marihuana, and (2) fees charged for the sale of marihuana by DEA.

[16] The United States Department of Agriculture has issued regulations and guidance to implement a program for the commercial production of industrial hemp in the United States under the framework of the AIA. *See Establishment of a Domestic Hemp Production Program*, 84 FR 58522 (Oct. 31, 2019).

DEA believes that economic forces will not only drive the types, varieties and strains of marihuana materials that will be produced by growers, but that such forces will also drive the fees that DEA-registrants will be willing to pay for marihuana used for research purposes. Accordingly, DEA proposes to allow market forces to direct prices for marihuana grown by the manufacturer and purchased by DEA. As we have stated elsewhere in this proposal, DEA will establish limits on individual production based on bona fide supply agreements between the grower and the end user (a DEA registered manufacturer or a schedule I researcher). Accordingly, DEA will use these terms as the basis for purchasing marijuana from the grower and additionally, for the basis by which it will sell that same marihuana to an end user.

In addition to that negotiated fee, DEA is proposing to add a variable administrative cost (per kilogram (kg)) which it intends to add onto the sales price of the marihuana it sells to end users. The purpose of this administrative fee is to ensure the full recovery by DEA of the costs of administering the program as required by 21 U.S.C. 886a(1)(C). DEA will calculate this variable cost annually by taking the preceding fiscal year's cost to operate the program and dividing it by the quantity in kg of the manufacturing quota for marihuana issued during the current quota year. For example, based on the economic analysis provided below, DEA would calculate an administrative fee of $304 per kg for marihuana distributed to end users. The calculation below is illustrative:

Variable Administrative Fee = $607,644 / 2,000 kg = $304 per kg[17]

DEA proposes to establish this fee no less than annually and proposes to publish this rate on its website by December 15th of the year preceding the year in which the administrative fee will be collected.

[17] Rounded to nearest whole dollar. The cost of $607,644 is explained below.

Regulatory Analyses

Executive Orders 12866 (Regulatory Planning and Review), 13563 (Improving Regulation and Regulatory Review), and 13771 (Reducing Regulation and Controlling Regulatory Costs)

This proposed rule was developed in accordance with the principles of Executive Orders 12866, 13563, and 13771. Executive Order 12866 directs agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health, and safety, and other advantages; distributive impacts; and equity). Executive Order 13563 is supplemental to and reaffirms the principles, structures, and definitions governing regulatory review established in Executive Order 12866. Section 3(f) of Executive Order 12866 classifies a "significant regulatory action," requiring review by the Office of Management and Budget (OMB), as any regulatory action that is likely to result in a rule that may: (1) have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive order.

DEA has determined that, although this proposed rule is not economically significant, it is a significant regulatory action under section 3(f) of Executive Order 12866, thus subjecting it to review by OMB.

I. Need for the Rule

This rule is needed to ensure that DEA complies with the CSA and grants registrations that are consistent with relevant treaty provisions as DEA seeks to increase the number of registered growers of marihuana. Specifically, this proposed rule would amend the provisions of the regulations governing applications by persons seeking to become registered with DEA to grow marihuana as bulk manufacturers and add provisions related to the purchase and sale of this marihuana by DEA. These amendments will ensure that DEA carries out all five functions under Article 23 and Article 28 of the Single Convention pertaining to marihuana, thus facilitating the planning and coordinated management of marihuana production necessary as the number of registered marihuana manufacturers increases.

II. Alternative Approaches

This proposed rule would amend DEA regulations only to the extent necessary to comply with the CSA and to ensure DEA grants registrations that are consistent with the Single Convention as it pertains to marihuana. In areas where DEA has discretion, such as in setting a fee structure to recover the cost of this proposed rule, alternative approaches would be discussed. However, because DEA does not have sufficient information at this time to discuss alternatives for either the future registration fees or the fees for the sale of marihuana, the alternative approaches for such provisions are not included in this proposed rule. Consistent with past agency practice, any proposed changes to registration fees will be the subject of a separate rulemaking proceeding, including a discussion of alternative approaches.

III. Analysis of Benefits and Costs

There are two key benefits associated with this proposed rule. First, DEA believes it is possible that the approval of new growers may increase the variety (quality, potency, etc.) of bulk marihuana for research, leading to more effective research and potentially resulting in the

development of FDA-approved drug products. Second, this rule would ensure that DEA's regulations comply with the requirements of the CSA by granting registrations that are consistent with the Single Convention relating to marihuana. DEA is unable to quantify these benefits at this time.

DEA analyzed the costs of this proposed rule and estimates an annual cost of $607,644. The details of the analysis are below.

This proposed rule would amend the provisions of the regulations governing applications by persons seeking to become registered with DEA to grow marihuana as bulk manufacturers and add provisions related to the purchase and sale of this marihuana by DEA. If this proposed rule is promulgated, the following key changes are anticipated: more persons will be authorized to grow marihuana, DEA will purchase and take title to the crops of marihuana, and DEA will, with respect to marihuana, have the exclusive right of importing, exporting, wholesale trading, and maintaining stocks. These changes would mean that authorized purchasers of bulk marihuana to be used for research, product development, and other purposes permitted by the CSA may only purchase from DEA, except that DEA's exclusive rights would not extend to medicinal cannabis or cannabis preparations. The changes described above would affect three primary groups of entities: growers and prospective growers, the authorizing agencies,[18] and purchasers (generally medical and scientific researchers). To examine the impact of the proposed rule, DEA first reviewed the current system for growing and distributing bulk marihuana, then examined the impact on each of the three affected groups.

Current System

[18] The "authorizing agency" refers to federal government agencies, including NIDA and DEA.

Under current regulations, DEA has authorized one grower, the National Center, to cultivate marihuana for research. NIDA contracts with the National Center to grow marihuana from seeds supplied initially by NIDA for use in research studies.[19] The National Center has designated a secure plot of land or indoor grow facility where marihuana crops are grown every few years, based on current and expected demand. The marihuana is grown, harvested, stored, and made available as bulk marihuana or other purified elements of marihuana to use for research.[20] NIDA obligated approximately $1.5 million in Fiscal Year 2015 under this contract.[21] This amount included costs unrelated to growing and cultivating marihuana, such as extracting chemical components and producing marihuana cigarettes and other marihuana-related material. However, based on recent discussion with NIDA,[22] DEA estimates NIDA's expenses under the contract with the National Center (and any related subcontracts) for the bulk marihuana for 2019 are approximately $2.9 million.[23] The $2.9 million includes compensation for the cultivating and the 2019 manufacturing quota (MQ) of 2,000 kgs for NIDA (National Center) as well as all other duties required in the contract.[24]

Researchers may obtain marihuana for use in research through NIDA's DSP. Bulk marihuana plant material produced under the NIDA DSP is currently available at no cost to research investigators supported by a NIH grant. Marihuana is also available to research

[19] Production, Analysis, and Distribution of Cannabis and Related Materials, Federal Business Opportunities (Apr. 12, 2015), https://www.fbo.gov/spg/HHS/NIH/NIDA-01/N01DA-15-7793/listing.html.
[20] NIDA's Role in Providing Marijuana for Research, National Institute on Drug Abuse, https://www.drugabuse.gov/drugs-abuse/marijuana/nidas-role-in-providing-marijuana-research.
[21] Information on Marijuana Farm Contract, National Institute on Drug Abuse, https://www.drugabuse.gov/drugs-abuse/marijuana/nidas-role-in-providing-marijuana-research/information-marijuana-farm-contract.
[22] Conference call between DEA Regulatory Drafting and Policy Support section and members of NIDA's Marijuana Drug Supply Program, July 30, 2019.
[23] Anticipated spending for the marihuana DSP for 2019 is $3.3 million to $3.4 million, of which 10%-15% meet the definition of "hemp" under the provisions of the AIA. Using the midpoint of these ranges, the estimated spending is $2.9 million for marihuana, excluding hemp. The figures are based on a general discussion, and actual figures may differ.
[24] The 2019 Aggregate Production Quota for all marihuana is 2,450 kgs. 2,000 of the 2,450 kgs are for the NIDA (National Center) cultivating and manufacturing quota of bulk marihuana. *See* 83 FR 67348.

investigators who are funded through non-federal sources. Although NIDA considered charging for marihuana on a "cost-reimbursement basis,"[25] the current policy is to provide the marihuana at no charge.[26]

Changes to Growers

If this proposed rule is implemented, DEA anticipates approving more than one person to cultivate and harvest bulk marihuana. As explained earlier in this document, the CSA imposes limitations on the number of registrations that DEA may issue to bulk manufacturers of a given schedule I or II controlled substance. In addition, in deciding whether to grant an application for any such registration, the CSA requires DEA to consider the other public interest factors of 21 U.S.C. 823(a), which must be evaluated on an applicant-by-applicant basis. Further, DEA cannot accurately predict in advance which particular applications will be granted, or how many. Accordingly, DEA is unable to accurately estimate the number of registered bulk marihuana growers. As a result, to allow for this analysis, DEA will estimate the economic impact of this proposed rule under two different hypothetical scenarios, the first in which the number of growers expands to three growers, and the second in which the number of growers expands to 15 growers. It should be understood that this range of potential registrants is not necessarily reflective of the actual number of applications that DEA will grant.

In 2016, DEA issued a policy statement regarding applications to become registered to manufacture marihuana to supply research.[27] Since the publication of the 2016 policy statement, DEA has received approximately 35 pending applications for registration as bulk manufacturer

[25] Marijuana Plant Material Available from the NIDA Drug Supply Program, National Institute on Drug Abuse, https://www.drugabuse.gov/research/research-data-measures-resources/nida-drug-supply-program/marijuana-plant-material-available-nida-drug-supply-program.
[26] *See* note 22.
[27] Applications to Become Registered Under the Controlled Substances Act to Manufacture Marijuana to Supply Researchers in the United States, 81 FR 53846 (Aug. 12, 2016). This proposed rule, if adopted, would supersede the 2016 policy statement.

of marihuana for research. As indicated above, the CSA requires DEA to limit the total number of registered bulk manufacturers of a given schedule I or II controlled substance to that necessary to produce an adequate and uninterrupted supply under adequately competitive conditions. Therefore, DEA believes a range of 3 to 15 growers is a reasonable estimate for purposes of this economic analysis, with the understanding that the actual number could vary considerably.

The Aggregate Production Quota (APQ), which includes the MQ, represents the annual quantity of marihuana that is necessary for the estimated medical, scientific, research and industrial needs of the United States, for lawful export requirements, and for the establishment and maintenance of reserve stocks.[28] Therefore, given a constant MQ, if more growers are approved to produce bulk marihuana, the quantities of bulk marihuana produced and the cost of production (and the reimbursement of production cost through sales) is transferred from the single incumbent grower to new growers. This means that there is only a transfer of economic activity rather than any new cost. The estimated economic activity of $2.9 million is transferred from the existing single grower to multiple growers.[29]

Transitioning from one large grower to multiple growers may introduce inefficiencies, driving up production or facility costs. Some growers may introduce more costly growing techniques to produce certain traits. Alternatively, some growers may introduce more efficient growing methods, driving down costs. Additionally, having more growers may spur more demand in bulk marihuana for research, pushing up the MQ. In particular, one of the goals of this new rule is to enhance marijuana availability for product development, which may have the effect of increasing the MQ. However, DEA does not have a basis to estimate the impact of these possibilities. Therefore, for the purposes of this analysis, DEA estimates that an increase in

[28] 21 CFR 1303.11(a).
[29] The phrase "multiple growers" includes the possibility that the current grower is one of "multiple growers."

the number of approved growers does not impact the MQ. In summary, there is no new cost to growers.

Changes to Authorizing Agencies – Cost to DEA

DEA anticipates that there will be a transfer of economic activity from NIDA to DEA as well as several new costs as a result of this rule. This analysis should in no way be construed as a proposal to modify agency funding or funding sources.

As discussed above, assuming a constant MQ for bulk marihuana of 2,000 kgs, DEA estimates the cost of all the activities the National Center performs under its contract with NIDA and the purchase of the entire aggregate crop, regardless of the number of growers, is $2.9 million. This $2.9 million is not a new cost; it is a transfer. Rather than NIDA paying the current single grower, DEA would pay the multiple new growers. In practice, DEA anticipates crops from multiple growers will be purchased at different times of the year, allowing funds from sales of earlier purchases to pay for subsequent purchases. Therefore, to purchase and distribute $2.9 million in bulk marihuana, a working capital of a lesser amount is likely needed. However, due to many unknowns and to be conservative, for the purposes of this analysis, the estimated transfer and working capital requirement is $2.9 million.

DEA anticipates incurring new costs associated with the following activities: taking title to the crops and employing personnel to administer the program. The growers, purchasers, and DEA would already understand prior to growing and harvesting, the quantities of marihuana to be distributed and to whom the distribution would be made because the bona fide supply agreements presented during the registration application process would provide such information. In most instances, DEA is expected to purchase and take title to the crop, then sell

and distribute the crop to the purchaser on the same day at the grower's registered location. For the purposes of this analysis, DEA assumes the following process:

1. After marihuana is harvested and prepared for delivery to DEA, the registered manufacturer will contact DEA to inform it that the marihuana is ready for collection.
2. Within a reasonable timeframe, but in no event later than four months after the harvest, DEA will purchase and take title to the marihuana. Two DEA Special Agents (or Deputized Task Force Officers) from the nearest local DEA field office will drive an estimated 100 miles (200 miles roundtrip) to the registered manufacturer to take title. Any marihuana that is not immediately distributed is stored in a designated secure storage mechanism at the grower's registered location for later distribution. The number of trips by the two DEA Special Agents equals the number of harvests.
3. For marihuana distributed from storage at the grower's registered location, the grower distributes marihuana on DEA's behalf. If DEA deems it necessary to be present at such distribution, the distribution is scheduled to coincide with DEA's visit to take title to the next crop, requiring no additional trips by DEA to the grower.
4. Each grower has three harvests, requiring DEA to collect three times per year per grower.

For each collection, DEA estimates $2,071 of labor cost[30] and $116 of vehicle cost[31] for a total of $2,187 per collection. DEA understands that some growers, employing certain growing methods, may have more harvests per year. However, DEA does not have a basis to estimate these growers' methods or the number of harvests per year. Therefore, DEA believes three

[30] DEA's loaded hourly rate of a Special Agent is $103.54. Assuming 10 hours each (full work-day) for two agents, the total labor cost associated with collection from a registered manufacturer is $2,071. "Loaded hourly rate" includes wages, benefits, and "loading" of "non-productive" hours, i.e., leave, training, travel, etc.
[31] $116 is based on IRS standard mileage rates for 2019 of $0.58 per mile multiplied by the estimated 200 miles driven, roundtrip.

harvests per year is a reasonable estimate. Assuming three collections per year per grower, there would be nine collections with three approved growers and 45 collections with 15 approved growers. Applying the estimated cost of $2,187 per collection, DEA estimates a transport cost of $19,683 and $98,415 for scenarios with three and 15 growers, respectively.

Additionally, DEA anticipates it would need additional personnel resources to operate this program. There are many unknowns and no decisions have been made on hiring. However, for the purposes of this analysis, DEA estimates three full-time-equivalent (FTE) professional staff in the Diversion Control Division would be needed, consisting of one FTE diversion investigator (DI), and two FTE professional/administrative (PA) resources.

Applying the fully loaded annual cost of $211,981 per DI and $168,307 per PA, the estimated total cost of the three FTE employees is $548,595. For the purposes of this analysis, this cost does not vary with the number of growers. Table 1 below summarizes the costs associated with increased staffing.

Table 1: Cost of Personnel Resources

Position	Job Category	Modular Cost/Unit Cost ($)	Number of FTEs	Cost ($)
Staff Coordinator	DI	211,981	1	211,981
Program Analyst	PA	168,307	2	336,614
Total	N/A	N/A	3	548,595

In summary the estimated cost to DEA is:

- $19,683 or $98,415 per year to purchase and take title to the bulk marihuana for scenarios with 3 or 15 authorized growers, respectively;
- $548,595 per year for three DEA FTE employees;

- The estimated total annual cost is $568,278 with three growers and $647,010 with 15 growers and no offsetting cost savings at NIDA. Using the average of the two values, the estimated cost to DEA is $607,644. Table 2 summarizes the costs.

Table 2: DEA Cost Summary

	Low ($)	High ($)	Average ($)
Transport Cost	19,683	98,415	N/A
Personnel Cost	548,596	548,595	N/A
Total Cost	568,278	647,010	607,644

Changes Affecting Researchers

DEA anticipates minimal procedural change for authorized researchers who plan to acquire bulk marihuana for research. The only anticipated procedural change is that some researchers would acquire the bulk marihuana from DEA, rather than from NIDA. As discussed earlier, the only new cost associated with this proposed regulation is the cost to DEA of $607,644, an average of high and low scenarios, which would be recovered by adding an administrative fee of $304 per kg. As discussed earlier, the administrative fee would be adjusted annually.

While the purchaser would purchase marihuana from DEA, this rule does not in any way affect the purchaser's source of funds to purchase from DEA. If marihuana for research is funded by a third party, the researcher may not experience any cost increase. In particular, NIH has long served as a third-party funder for research through grants, including grants to researchers studying marihuana. Nothing in this rule prohibits NIH from continuing to fund such research by continuing to cover the cost of marihuana materials used in research, via grants to researchers.

Cost Summary

DEA estimates the cost of producing the 2019 MQ for bulk marihuana of 2,000 kgs and operating NIDA's marihuana DSP is $2.9 million per year. Under the proposed rule, DEA anticipates more bulk marihuana producers would be approved. DEA estimates the $2.9 million in economic activity would be transferred across multiple growers, without introducing new costs.

DEA's purchase of bulk marihuana is not a new cost (to the economy); it is a transfer from NIDA to DEA. However, $568,278 to $647,010 in operating costs would be incurred by DEA. DEA will recover the costs of carrying out the proposed new aspects of the diversion control program relating to marihuana by selling the marihuana to the buyer at the negotiated sale price, between the grower and the buyer, plus the administrative fee assessed on a per kg basis.

The net present values (NPVs) of the low cost estimate of $568,278 per year over 10 years are $4.8 million and $4.0 million at a three percent discount rate and 7 percent discount rate, respectively. The NPVs of the high cost estimate of $647,010 over 10 years are $5.5 million and $4.5 million at a three percent discount rate and seven percent discount rate, respectively. The average of the estimated low and high costs is $607,644. The NPVs of the average of $607,644 over 10 years are $5.2 million and $4.3 million at three percent and seven percent discount rates, respectively. Table 3 summarizes the estimated annual effect and NPVs calculation for each of the transfers and the three scenarios.

Table 3: Summary of Annual Effect and NPVs

	Annual Effect ($)	NPVs at 3% ($M)	NPVs at 7% ($M)
Cost (Low)	568,278	4.8	4.0
Cost (Average)	607,644	5.2	4.3
Cost (High)	647,010	5.5	4.5

Executive Order 13771 (Reducing Regulation and Controlling Regulatory Costs)

This proposed rule is expected to be a deregulatory action for the purposes of Executive Order 13771. The rule is an enabling rule which, coincidentally with other provisions, expands the number of authorized bulk marihuana growers.

Executive Order 12988 (Civil Justice Reform)

This proposed rule meets the applicable standards set forth in sections 3(a) and 3(b)(2) of Executive Order 12988, Civil Justice Reform, to eliminate ambiguity, minimize litigation, establish clear legal standards, and reduce burdens on regulated parties and the court system.

Executive Order 13132 (Federalism)

This proposed rule does not have federalism implications warranting the application of Executive Order 13132. The proposed rule does not have substantial direct effects on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government.

Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments)

This proposed rule does not have tribal implications warranting the application of Executive Order 13175. It does not have substantial direct effects on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

Regulatory Flexibility Act

In accordance with the Regulatory Flexibility Act (RFA), DEA evaluated the impact of this rule on small entities. DEA's evaluation of economic impact by size category indicates that

the proposed rule will not, if promulgated, have a significant economic impact on a substantial number of these small entities.

The RFA requires agencies to analyze options for regulatory relief of small entities unless the agency can certify that the rule will not have a significant impact on a substantial number of small entities. For purposes of the RFA, small entities include small businesses, nonprofit organizations, and small governmental jurisdictions. DEA evaluated the impact of this rule on small entities and a discussion of its findings is below.

As discussed in the section of this proposed rulemaking relating to Executive Orders 12866, 13565, and 13771, this proposed rule would amend the provisions of the regulations governing applications by persons seeking to become registered with DEA to grow marihuana as bulk manufacturers, and add provisions related to the purchase and sale of this marihuana by DEA. If this proposed rule is promulgated, the following key changes are anticipated: more persons will be authorized to grow marihuana; DEA will purchase and take physical possession of crops; and DEA will, with respect to marihuana, have the exclusive right of importing, exporting, wholesale trading, and maintaining stocks. These changes, as explained above, would mean that authorized purchasers of bulk marihuana may only purchase from DEA, except that DEA's exclusive right would not extend to medicinal cannabis or cannabis preparations as these terms are defined in paragraphs (b) and (c), respectively, of proposed § 1318.02 of this proposed rule.

The changes described above would affect three primary groups of entities: growers and prospective growers, the authorizing agencies (including NIDA and DEA), and purchasers (generally researchers). Because any economic impact on federal agencies is outside the scope of the RFA, the transfer of economic activity between the agencies is excluded from this

discussion. To examine the impact of the proposed rule, DEA first reviewed the current system for growing and distributing bulk marihuana, then examined the impact on each of the two affected non-federal groups: growers (bulk manufacturers of marihuana) and researchers.

Current System

Under current regulations, DEA has authorized one grower, the National Center, to cultivate marihuana for research. NIDA contracts with the National Center to grow marihuana for use in research studies.[32] The National Center designates a secure plot of land where marihuana crops are grown every few years, based on current and expected demand. The marihuana is grown, harvested, stored, and made available as bulk marihuana or other purified elements of marihuana to use for research.[33] As explained previously, DEA estimates NIDA's expenses under the contract with the National Center (and any related subcontracts) for the bulk marihuana for 2019 are approximately $2.9 million.[34] The $2.9 million includes compensation for the cultivating and the 2019 MQ of 2,000 kgs for NIDA as well as all other duties required in the contract.[35]

Researchers may obtain marihuana for use in research through NIDA's DSP. Bulk marihuana plant material produced under the NIDA DSP is available at no cost to research investigators who are supported by an NIH grant. Marihuana is also available to research investigators who are funded through non-federal sources. Although NIDA considered charging

[32] Production, Analysis, and Distribution of Cannabis and Related Materials, Federal Business Opportunities (Apr. 12, 2015), https://www.fbo.gov/spg/HHS/NIH/NIDA-01/N01DA-15-7793/listing.html.
[33] NIDA's Role in Providing Marijuana for Research, National Institute on Drug Abuse, https://www.drugabuse.gov/drugs-abuse/marijuana/nidas-role-in-providing-marijuana-research.
[34] Anticipated spending for the marihuana DSP for 2019 is $3.3 million to $3.4 million, of which 10 percent to 15 percent meet the definition of "hemp" under the provisions of the AIA. Using the midpoint of these ranges, the estimated spending is $2.9 million. The figures are based on a general discussion, and actual figures may differ.
[35] The 2019 APQ for all manufacturers of marihuana is 2,450 kgs. 2,000 kgs are for cultivating and manufacturing of bulk marihuana. *See* 83 FR 67348.

for marihuana on a "cost-reimbursement basis,"[36] the current policy is to provide the marihuana at no charge.[37]

Impact on Growers

If this proposed rule is implemented, DEA anticipates approving more than one person to cultivate and harvest bulk marihuana. In 2016, DEA issued a policy statement regarding applications to become registered to manufacture marihuana to supply research.[38] Since the publication of the 2016 policy statement, there are approximately 35 pending applications for registration as bulk manufacturer of marihuana for research. Additionally, some applicants may not meet the statutory and regulatory criteria for holding a registration as a bulk manufacture and will be denied. Therefore, for the purposes of this analysis, DEA will estimate the economic impact of this proposed rule at three and 15 growers with the understanding that the actual number could vary considerably.

The APQ, which includes the MQ, represents the annual quantity of marihuana that is necessary for the estimated medical, scientific, research and industrial needs of the United States, for lawful export requirements, and for the establishment and maintenance of reserve stocks.[39] Therefore, given a constant MQ, if more growers are approved to produce bulk marihuana, the quantities of bulk marihuana produced and the cost of production (and reimbursement of their production cost through sales) is transferred from the incumbent grower to new growers. This means that there is no new cost; instead, there is only a transfer of economic activity. The

[36] Marijuana Plant Material Available from the NIDA Drug Supply Program, National Institute on Drug Abuse, https://www.drugabuse.gov/research/research-data-measures-resources/nida-drug-supply-program/marijuana-plant-material-available-nida-drug-supply-program.
[37] *See* note 22.
[38] Applications to Become Registered under the Controlled Substances Act to Manufacture Marijuana to Supply Researchers in the United States, 81 FR 53846 (2016). This proposed rule, if adopted, would superseded the 2016 policy statement.
[39] 21 U.S.C. 826(a).

estimated economic activity of $2.9 million is transferred from the existing single grower to multiple growers.[40]

Transitioning from one large grower to multiple smaller growers may reduce production efficiency, driving up cost. Some growers may introduce more costly growing techniques in order to produce certain traits. Alternatively, some growers may introduce more efficient growing methods, driving down cost. Additionally, having more growers may spur more demand in bulk marihuana for research, pushing up the MQ. However, DEA does not have a basis to estimate the impact of these possibilities.

Impact on Researchers

DEA anticipates minimal procedural change for authorized researchers who plan to acquire bulk marihuana for research. The only anticipated procedural change is that the researcher would acquire the bulk marihuana from DEA, rather than from NIDA or the National Center. As discussed earlier, the only new cost associated with this proposed regulation is the cost to DEA of $607,644, which would be recovered by adding an administrative fee of $304 per kg. As discussed earlier, the administrative fee would be adjusted annually. While purchasers would purchase marihuana from DEA, this rule does not in any way affect the purchasers' source of funds to purchase from DEA. If marihuana for research is funded by a third party, the researcher may not experience any cost increase.

Affected Number of Small Entities

This proposed rule affects the current and prospective bulk manufacturers of marihuana for research and researchers. Based on the discussion above, DEA anticipates up to 15 bulk manufacturers are affected by this proposed rule. Additionally, based on a discussion with

[40] The phrase "multiple growers" includes the possibility that the current grower is one of the "multiple growers."

NIDA,[41] DEA estimates 40 researchers are affected by this proposed rule. The 40 researchers represent the approximate number of researchers that receive marihuana from NIDA's marihuana DSP.

Based on a review of representative North American Industry Classification System (NAICS) codes for bulk manufacturers and researchers, the following number of firms may be affected:[42]

- 421 firms related to 'Medicinal and Botanical Manufacturing' (325411)[43]
- 9,634 firms related to 'Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)' (541712)[44]

The United States Small Business Administration (SBA) sets size standards that determine how large an entity can be and still qualify as a small business for federal government programs. For the most part, size standards are based on the average annual receipts or the average number of employees of a firm. The SBA size standard for both industries identified by the NAICS codes above is 1,000 employees.[45]

Comparing the SBA size standards to the U.S. Census Bureau, Statistics of U.S. Businesses (SUSB) detailed data on establishment size by NAICS code for each affected industry, DEA estimates the following number of small entities and percent of firms that are small entities by industry:

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[41] *See* note 22.
[42] For the purposes of this analysis, the term "firms" is synonymous with "entities."
[43] 2015 SUSB Annual Datasets by Establishment Industry, U.S. & States, NAICS, Detailed Employment Sizes (U.S., 6-digit and States, NAICS Sectors), United States Census Bureau, https://www.census.gov/data/datasets/2015/econ/susb/2015-susb.html.
[44] *Ibid.*
[45] Table of Small Business Size Standards Matched to North American Industry Classification System Codes, United States Small Business Association (Oct. 1, 2017). The NAICS code was updated for 'Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)' from 541712 to 541715. The 2015 SUSB data uses 541712 and the 2017 SBA size standard uses 541715 for the same industry.

- 392 (93.1 percent of total) firms in the area of 'Medicinal and Botanical Manufacturing' (325411)
- 9,090 (94.4 percent of total) firms in the area of 'Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)' (541712)

Table 4 details the calculation for the number of small entities by industry.

Table 4: Number of Small Entities by Industry

NAICS Description	Firm Size by Average Employees	Firms	SBA Size Standard	Small Entities	% Small Entities
325411-Medicinal and Botanical Manufacturing	<500	384	1,000	384	100%
	500-749	3		3	100%
	750-999	5		5	100%
	1,000-1,499	6		-	0%
	1,500-1,999	2		-	0%
	2,000-2,499	1		-	0%
	2,500-4,999	7		-	0%
	5,000+	13		-	0%
	Total	421		392	93.1%
541712-Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	<500	8,972	1,000	8,972	100%
	500-749	68		68	100%
	750-999	50		50	100%
	1,000-1,499	70		-	0%
	1,500-1,999	40		-	0%
	2,000-2,499	35		-	0%
	2,500-4,999	132		-	0%
	5,000+	267		-	0%
	Total	9,634		9,090	94.4%

Applying the calculated respective percentage for small entities to the number of affected bulk manufacturers and researchers, DEA estimates 14 (15 x 93.1 percent) bulk manufacturers and 38 (40 x 94.4 percent) researchers, for a total of 52 small entities, will be affected by this proposed rule. The 14 affected small entity bulk manufacturers represent four percent of the estimated 392 small entities in the 'Medicinal and Botanical Manufacturing' (325412) industry,

and the 38 affected small entity researchers represent 0.4 percent of the estimated 9,090 small entities in the 'Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)' (541712) industry. Table 5 summarizes the calculations for the percentage of small entities that are affected by the proposed rule.

Table 5: Percent of Small Entities Affected by Industry

NAICS Description	Number of Firms	SBA Size Standard	Estimated Number of Small Entities	Estimated Number of Affected Small Entities	Percentage of Small Entities Affected
325411-Medicinal and Botanical Manufacturing	421	1,000	392	14	4
541712-Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	9,634	1,000	9,090	38	0.4
Total	10,055	N/A	9,482	52	N/A

DEA generally uses a threshold of 30 percent as a "substantial" number of affected small entities. Thus, the above analysis reveals that a non-substantial amount of small bulk manufacturer entities (4 percent) and of small researcher entities (0.4 percent) will be affected by this proposed rule.

DEA generally considers impacts that are greater than three percent of annual revenue to be a "significant economic impact" on an entity. As discussed earlier, DEA estimates that there will be a new cost to DEA of $568,278 to $647,010 per year, or the average of the high and low estimates of $607,644 per year. DEA will recover the costs of carrying out the proposed new aspects of the diversion control program relating to marihuana by selling the marihuana to the

buyer at the negotiated sale price, between the grower and the buyer, plus the administrative fee assessed on a per kg basis. Based on the average of the high and low estimates of $607,644 and MQ of 2,000 kgs, the administrative fee is $304 per kg, adjusted annually.

Furthermore, NIH-funded or other third-party funded researchers are likely to request and receive enough funding for the full price of marihuana, including the administrative fee. There would be no impact to these researchers. However, DEA does not have sufficient information to estimate the number of small entity researchers that would fall under this category. Although DEA is unable to quantify the economic impact for the estimated 14 small entity bulk manufacturers and 38 small entity researchers, the number of affected small entity manufacturers and researchers is not a substantial number of small entities in their respective industries.

Based on the analysis above, and because of these facts, DEA believes this proposed rule, if promulgated, will not have a significant economic impact on a substantial number of small entities.

Unfunded Mandates Reform Act of 1995

In accordance with the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1501 *et seq.*, DEA has determined that this action would not result in any Federal mandate that may result "in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100,000,000 or more (adjusted annually for inflation) in any 1 year." *See* 2 U.S.C. 1532(a). Therefore, neither a Small Government Agency Plan nor any other action is required under the UMRA.

Paperwork Reduction Act of 1995

Pursuant to the Paperwork Reduction Act of 1995 (PRA), 44 U.S.C. 3501 *et seq.*, DEA has identified the following collections of information related to this proposed rule. A person is not

required to respond to a collection of information unless it displays a valid OMB control number. Copies of existing information collections approved by OMB may be obtained at *https://www.reginfo.gov/*.

A. *Collections of Information Associated with the Proposed Rule*

Title: Application for Registration (DEA Form 225); Renewal Application for Registration (DEA Form 225A); Affidavit for Chain Renewal (DEA Form 225B)

OMB control number: 1117-0012

Form numbers: DEA-225, DEA-225A, DEA-225B

Type of information collection: Revision of a currently approved collection.

Applicable component of the department sponsoring the collection: Department of Justice/Drug Enforcement Administration, Diversion Control Division.

Affected public who will be asked or required to respond: Business or other for-profit.

Abstract: The Controlled Substances Act requires all businesses and individuals who manufacture, distribute, import, export, or conduct research and laboratory analysis with controlled substances to register with DEA. 21 U.S.C. 822; 21 CFR 1301.11, 1301.13. Registration is a necessary control measure that helps to detect and prevent diversion by ensuring that the closed system of distribution of controlled substances can be monitored by DEA, and that the businesses and individuals handling controlled substances are accountable.

If adopted, this proposed rule would amend the regulations governing applications by persons seeking to become registered with DEA to grow marihuana as bulk manufacturers and add provisions related to the purchase and sale of this marihuana by DEA. Persons seeking to become registered with DEA to grow marihuana as bulk manufacturers would still apply for registration using the same DEA Form 225 as other bulk manufacturers, but DEA would use a

new supplemental questionnaire unique to marihuana manufacturers in order to gather additional information about applicants. There would also be new questionnaires used for importer applicants and non-marihuana bulk manufacturer applicants. Forms 225, 225A, and 225B would all receive minor revisions to improve clarity and usability for registrants.

DEA estimates the following number of respondents and burden associated with this collection of information:

- Number of respondents: 15,919
- Frequency of response: 1 per respondent per year
- Number of responses: 15,919
- Burden per response: 0.1304 hours
- Total annual burden in hours: 2,076

B. *Request for Comments Regarding the Proposed Collections of Information*

Written comments and suggestions from the public and affected entities concerning the proposed collections of information are encouraged. Under the PRA, DEA is required to provide a notice regarding the proposed collections of information in the Federal Register with the notice of proposed rulemaking and solicit public comment. Pursuant to section 3506(c)(2) of the PRA (44 U.S.C. 3506(c)(2)), DEA solicits comment on the following issues:

- Whether the proposed collection of information is necessary for the proper performance of the functions of DEA, including whether the information shall have practical utility.
- The accuracy of DEA's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used.
- Recommendations to enhance the quality, utility, and clarity of the information to be collected.

- Recommendations to minimize the burden of the collection of information on those who are to respond, including through the use of automated collection techniques or other forms of information technology.

Please send written comments to the Office of Information and Regulatory Affairs, OMB, Attention: Desk Officer for DOJ, Washington, DC 20503. Please state that your comments refer to RIN 1117-AB54/Docket No. DEA–506. All comments must be submitted to OMB on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposed rule.

If you need a copy of the proposed information collection instrument(s) with instructions or additional information, please contact the Regulatory Drafting and Policy Support Section (DPW), Diversion Control Division, Drug Enforcement Administration; Mailing Address: 8701 Morrissette Drive, Springfield, Virginia 22152-2639; Telephone: (571) 362–3261.

List of Subjects

21 CFR Part 1301

Administrative practice and procedure, Drug traffic control, Security measures.

21 CFR Part 1318

Administrative practice and procedure, Drug traffic control.

For the reasons stated in the preamble, DEA proposes to amend 21 CFR chapter II as follows:

PART 1301—REGISTRATION OF MANUFACTURERS, DISTRIBUTORS, AND DISPENSERS OF CONTROLLED SUBSTANCES

1. The authority citation for part 1301 continues to read as follows:

AUTHORITY: 21 U.S.C. 821, 822, 823, 824, 831, 871(b), 875, 877, 886a, 951, 952, 956, 957, 958, 965 unless otherwise noted.

2. In § 1301.33, revise paragraph (c) and add paragraph (d) to read as follows:

§ 1301.33 Application for bulk manufacture of Schedule I and II substances.

* * * * *

(c) Except as provided in paragraph (d) of this section, this section shall not apply to the manufacture of basic classes of controlled substances listed in Schedule I or II as an incident to research or chemical analysis as authorized in § 1301.13(e)(1).

(d) An application for registration to manufacture marihuana that involves the planting, cultivating, growing, or harvesting of marihuana shall be subject to the requirements of this section and the additional requirements set forth in part 1318 of this chapter.

3. Add part 1318 to read as follows:

PART 1318—CONTROLS TO SATISFY THE REQUIREMENTS OF THE ACT APPLICABLE TO THE MANUFACTURING OF MARIHUANA

Sec.

AUTHORITY: 21 U.S.C. 801(7), 821, 822(a)(1), (b), 823(a), 871(b), 886a.

§ 1318.01 Scope of this part.

Procedures governing the registration of manufacturers seeking to plant, grow, cultivate, or harvest marihuana are set forth by this part.

§ 1318.02 Definitions.

(a) Except as provided in paragraph (e) of this section, the term *cannabis* means any plant of the genus Cannabis.

(b) Except as provided in paragraph (e) of this section, the term *medicinal cannabis* means a drug product made from the cannabis plant, or derivatives thereof, that can be legally marketed under the Federal Food, Drug, and Cosmetic Act.

(c) Except as provided in paragraph (e) of this section, the term *cannabis preparation* means cannabis that was delivered to the Administration and subsequently converted by a registered manufacturer into a mixture (solid or liquid) containing cannabis, cannabis resin, or extracts of cannabis.

(d) Except as provided in paragraph (e) of this section, the term *cannabis resin* means the separated resin, whether crude or purified, obtained from the cannabis plant.

(e) As used in this part, the terms *cannabis*, *medicinal cannabis*, and *cannabis preparation* do not include any material, compound, mixture, or preparation that falls outside the definition of marihuana in section 102(16) of the Controlled Substances Act (the Act) (21 U.S.C. 802(16)).

(f) The term *Single Convention* means the Single Convention on Narcotic Drugs, 1961 (18 U.S.T. 1407).

(g) The term *bona fide supply agreement* means a letter of intent, purchase order or contract between an applicant and a researcher or manufacturer registered under the Act.

(h) The term *registered researcher or manufacturer* means a person registered under the Act to perform research or manufacture of marihuana in Schedule I.

§ 1318.03 Implementation of statutory requirements.

(a) As provided in section 303(a) of the Act (21 U.S.C. 823(a)), the Administrator may grant an application for a registration to manufacture marihuana, including the cultivation of cannabis, only if he determines that such registration is consistent with the public interest and with United States obligations under the Single Convention.

(b) In accordance with section 303(a) of the Act and § 1301.44(a) of this chapter, the burden shall be on the applicant to demonstrate that the requirements for such registration have been satisfied.

§ 1318.04 Specific control measures applicable to the bulk manufacture of marihuana.

For a registration to manufacture marihuana that involves the cultivation of cannabis, the following provisions must be satisfied:

(a) All registered manufacturers who cultivate cannabis shall deliver their total crops of cannabis to the Administration. The Administration shall purchase and take physical possession of such crops as soon as possible, but not later than four months after the end of the harvest. The Administration may accept delivery and maintain possession of such crops at the registered location of the registered manufacturer authorized to cultivate cannabis consistent with the maintenance of effective controls against diversion. In such cases, the Administration shall designate a secure storage mechanism at the registered location in which the Administration may maintain possession of the cannabis, and the Administration will control access to the stored cannabis. If the Administration determines that no suitable location exists at the registered location of the registered manufacturer authorized to cultivate cannabis, then the Administration

shall designate a location for the authorized grower to deliver the crop as soon as possible, but not later than four months after the end of the harvest. However, in all cases the registrant must comply with the security requirements specified in part 1301 of this chapter.

(b) The Administration shall, with respect to cannabis, have the exclusive right of importing, exporting, wholesale trading, and maintaining stocks other than those held by registered manufacturers and distributors of medicinal cannabis or cannabis preparations. Such exclusive right shall not extend to medicinal cannabis or cannabis preparations. The Administration may exercise its exclusive right by authorizing the performance of such activities by appropriately registered persons. The Administration shall require prior written notice of each proposed importation, exportation, or distribution of cannabis that specifies the quantity of cannabis to be imported, exported, or distributed and the name, address, and registration number of the registered manufacturer or researcher to receive the cannabis before authorizing the importation, exportation, or distribution. All importation and exportation shall be performed in compliance with part 1312 of this chapter, as applicable. Under no circumstance shall a registered manufacturer authorized to grow cannabis import, export, or distribute cannabis without the express written authorization of the Administration.

(c) A registered manufacturer authorized to grow cannabis shall notify in writing the Administration of its proposed date of harvest at least 15 days before the commencement of the harvest.

§ 1318.05 Application of the public interest factors.

(a) In accordance with section 303(a) of the Act (21 U.S.C. 823(a)), the Administrator shall consider the public interest factors set forth in paragraphs (a)(1) through (6) of this section:

(1) Maintenance of effective controls against diversion of particular controlled substances and any controlled substance in schedule I or II compounded therefrom into other than legitimate medical, scientific, research, or industrial channels, by limiting the importation and bulk manufacture of such controlled substances to a number of establishments which can produce an adequate and uninterrupted supply of these substances under adequately competitive conditions for legitimate medical, scientific, research, and industrial purposes;

(2) Compliance with applicable State and local law;

(3) Promotion of technical advances in the art of manufacturing these substances and the development of new substances;

(4) Prior conviction record of applicant under Federal and State laws relating to the manufacture, distribution, or dispensing of such substances;

(5) Past experience in the manufacture of controlled substances, and the existence in the establishment of effective control against diversion; and

(6) Such other factors as may be relevant to and consistent with the public health and safety.

(b) The Administrator's determination of which applicants to select will be consistent with the public interest factors set forth in section 303(a), with particular emphasis on the following criteria:

(1) Whether the applicant has demonstrated prior compliance with the Act and this chapter;

(2) The applicant's ability to consistently produce and supply cannabis of a high quality and defined chemical composition; and

(3)(i) In determining under section 303(a)(1) of the Act (21 U.S.C. 823(a)(1)) the number of qualified applicants necessary to produce an adequate and uninterrupted supply of cannabis under adequately competitive conditions, the Administrator shall place particular emphasis on the extent to which any applicant is able to supply cannabis or its derivatives in quantities and varieties that will satisfy the anticipated demand of researchers and other registrants in the United States who wish to obtain cannabis to conduct activities permissible under the Act, as demonstrated through a bona fide supply agreement with a registered researcher or manufacturer as defined in this subpart.

(ii) If an applicant seeks registration to grow cannabis for its own research or product development, the applicant must possess registration as a schedule I researcher with respect to marihuana under § 1301.32 of this chapter. As specified in § 1301.13 of this chapter, chemical analysis and preclinical research (including quality control analysis) are not coincident activities of a manufacturing registration for schedule I substances, including cannabis. In determining under section 303(a)(1) of the Act (21 U.S.C. 823(a)(1)) the number of qualified applicants necessary to produce an adequate and uninterrupted supply of cannabis under adequately competitive conditions, the Administrator shall consider the holding of an approved marihuana research protocol by a registered schedule I researcher seeking to grow cannabis for its own research or product development as evidence of the necessity of the applicant's registration under this factor.

(c) Applications accepted for filing after [EFFECTIVE DATE OF FINAL RULE] will not be considered pending for purposes of paragraph (a) of this section until all applications accepted for filing on or before [EFFECTIVE DATE OF FINAL RULE] have been granted or

denied by the Administrator. Where an application is subject to section 303(i) of the Act (21 U.S.C. 823(i)), that section shall apply in lieu of this paragraph (c).

(d) In determining the legitimate demand for cannabis and its derivatives in the United States, the Administrator shall consult with the U.S. Department of Health and Human Services, including its components.

§ 1318.06 Factors affecting prices for the purchase and sale by the Administration of cannabis.

(a) In accordance with section 111(b)(3) of Public Law 102-395 (21 U.S.C. 886a(1)(C)), seeking to recover the full costs of operating the aspects of the diversion control program that are related to issuing registrations that comply with the Controlled Substances Act (CSA), the Administration shall assess an administrative fee. To set the administrative fee, the Administration shall annually determine the preceding fiscal year's cost of operating the program to cultivate cannabis and shall divide the prior fiscal year's cost by the number of kgs of cannabis authorized to be manufactured in the current year's quota to arrive at the administrative fee per kg. The administrative fee per kg shall be added to the sale price of cannabis purchased from the Administration. The administrative fee shall be paid to the Diversion Control Fee Account.

(b) As set forth in § 1318.04, the Administration shall have the exclusive right of, among other things, wholesale trading in cannabis that it purchases from registered manufacturers. The Administration will, therefore, buy from such manufacturer, sell cannabis to registered researchers and manufacturers, and establish prices for such purchase and sale. The Administration will set such prices in the following manner:

(1) Bulk growers of cannabis shall negotiate directly with registered researchers and manufacturers authorized to handle cannabis to determine a sale price for their cannabis. Upon entering into a contract for the provision of bulk cannabis and prior to the exchange of cannabis, the parties shall pay to the Administration an administrative fee assessed based on the number of kgs to be supplied. The administrative fee shall not be recoverable in the event that delivery is rejected by the buyer.

(2) The Administration shall sell the cannabis to the buyer at the negotiated sale price plus the administrative fee assessed on a per kg basis. Prior to the purchase of the cannabis by the Administration, the buyer shall pay the negotiated purchase price and administrative fee to the Administration. The Administration shall hold funds equal to the purchase price in escrow until the delivery of the cannabis by the grower to the Administration. The administrative fee shall not be recoverable in the event that delivery is rejected by the buyer.

(3) After receiving the purchase price and administrative fee from the buyer, the Administration shall purchase the cannabis from the grower, on behalf of the buyer, at the negotiated sale price. The Administration shall retain the administrative fee. In the event the buyer fails to pay the purchase price and the administrative fee, the Administration shall have no obligation to purchase the crop and may order the grower to destroy the crop if the grower cannot find an alternative buyer within four months of harvest.

(4) In instances where the grower of the cannabis is the same entity as the buyer of the cannabis, or a related or subsidiary entity, the entity may establish a nominal price for the purchase of the cannabis. The Administration shall then purchase the entity's cannabis at that price and sell the cannabis back to the entity, or a related or subsidiary entity, at the same price with the addition of the administrative fee.

(c) Administrative fees set in accordance with this part will be made available, on an updated basis, on the Administration's website, no later than December 15th of the year preceding the year in which the administrative fee will be collected.

(d) Nothing in this section shall prohibit the U.S. Department of Health and Human Services from continuing to fund the acquisition of cannabis for use in research by paying, directly or indirectly, the purchase cost and administrative fee to the Administration.

§ 1318.07 Non-liability of Drug Enforcement Administration.

The Administration shall have no liability with respect to the performance of any contractual terms agreed to by a grower and buyer of bulk cannabis, including but not limited to the quality of any cannabis delivered to a buyer. In the event that a buyer deems the delivered cannabis to be defective, the buyer's sole remedy for damages shall be against the grower and not the Administration.

Dated: March 16, 2020.

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Uttam Dhillon,
Acting Administrator.
[FR Doc. 2020-05796 Filed: 3/20/2020 8:45 am; Publication Date: 3/23/2020]

Exhibit 31

FAA Order 7400.11, Airspace Designations and Reporting Points, is published yearly and effective on September 15.

Regulatory Notices and Analyses

The FAA has determined that this proposed regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore: (1) Is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under Department of Transportation (DOT) Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this proposed rule, when promulgated, will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Environmental Review

This proposal will be subject to an environmental analysis in accordance with FAA Order 1050.1F, ''Environmental Impacts: Policies and Procedures'' prior to any FAA final regulatory action.

List of Subjects in 14 CFR Part 71

Airspace, Incorporation by reference, Navigation (air).

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend 14 CFR part 71 as follows:

PART 71—DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS

■ 1. The authority citation for part 71 continues to read as follows:

Authority: 49 U.S.C. 106(f), 106(g); 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

§ 71.1 [Amended]

■ 2. The incorporation by reference in 14 CFR 71.1 of FAA Order 7400.11D, Airspace Designations and Reporting Points, dated August 8, 2019, and effective September 15, 2019, is amended as follows:

Paragraph 2004 Jet Routes

J–2

From Mission Bay, CA; Imperial, CA; Bard, AZ; INT Bard 089° and Gila Bend, AZ, 261°radials; Gila Bend; Tucson, AZ; El Paso, TX; Fort Stockton, TX; Junction, TX; San Antonio, TX; Humble, TX; Lake Charles, LA; Fighting Tiger, LA; Semmes, AL; Crestview, FL; to INT Crestview 091°and Seminole, FL, 290°radials.

J–14

From Panhandle, TX; via Will Rogers, OK; Little Rock, AR; to Vulcan, AL.

J–24

From Myton, UT, to Hayden, CO. From Hugo, CO, Hays, KS; via Salina, KS; Kansas City, MO; St. Louis, MO; Brickyard, IN; Falmouth, KY; Charleston, WV; to Montebello, VA.

J–37

From Hobby, TX, via INT of the Hobby 090° and Harvey, LA, 266° radials; Harvey; Semmes, AL; to Montgomery, AL.

J–39

From Montgomery, AL; Vulcan, AL, Nashville, TN; Louisville, KY, to Rosewood, OH.

J–42

From Delicias, Mexico, via Fort Stockton, TX; Abilene, TX; Ranger, TX; Texarkana, AR; Memphis, TN; Nashville, TN; Beckley, WV; Montebello, VA; to Gordonsville, VA.

J–52

From Vancouver, BC, Canada; via Spokane, WA; Salmon, ID; Dubois, ID; Rock Springs, WY; Falcon, CO; Hugo, CO; Lamar, CO; Liberal, KS; INT Liberal 137° and Ardmor, OK 309° radials; Ardmore; Texarkana, AR; Sidon, MS; Bigbee, MS; to Vulcan, AL.

J–55 [Remove]

J–61

From Westminster, MD; to Philipsburg, PA.

J–62 [Remove]

J–68

From Gopher, MN, INT Gopher 109° and Dells, WI, 310° radials; Dells; Badger, WI; INT Badger 086° and Flint, MI, 278° radials; to Flint.

J–79 [Remove]

J–109 [Remove]

J–121 [Remove]

J–150 [Remove]

J–165 [Remove]

J–174 [Remove]

J–191 [Remove]

J–193 [Remove]

J–222 [Remove]

J–225 [Remove]

J–230 [Remove]

J–506 [Remove]

J–561 [Remove]

J–563 [Remove]

J–570 [Remove]

J–573 [Remove]

J–582 [Remove]

J–585 [Remove]

Paragraph 2006 United States Area Navigation Routes.

Q–108 [Remove]

Issued in Washington, DC, on March 11, 2020.

Scott M. Rosenbloom,

Acting Manager, Airspace Policy Group.

[FR Doc. 2020–05857 Filed 3–20–20; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF JUSTICE

Drug Enforcement Administration

21 CFR Parts 1301 and 1318

[Docket No. DEA–506]

RIN 1117–AB54

Controls To Enhance the Cultivation of Marihuana for Research in the United States

AGENCY: Drug Enforcement Administration, Department of Justice.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Drug Enforcement Administration is proposing to amend its regulations to comply with the requirements of the Controlled Substances Act, including consistency with treaty obligations, in order to facilitate the cultivation of marihuana for research purposes and other licit purposes. Specifically, this proposed rule would amend the provisions of the regulations governing applications by persons seeking to become registered with DEA to grow marihuana as bulk manufacturers and add provisions related to the purchase and sale of this marihuana by DEA.

DATES: Comments must be submitted electronically or postmarked on or before May 22, 2020.

ADDRESSES: To ensure proper handling of comments, please reference ''[RIN 1117–AB54/Docket No. DEA–506]'' on all electronic and written correspondence, including any attachments.

- *Electronic Comments:* DEA encourages that all comments be submitted electronically through the Federal eRulemaking Portal, which provides the ability to type short comments directly into the comment field on the web page or attach a file for lengthier comments. Please go to *http://www.regulations.gov* and follow the

online instructions at that site for submitting comments. Upon completion of your submission, you will receive a Comment Tracking Number for your comment. Please be aware that submitted comments are not instantaneously available for public view on *Regulations.gov.* If you have received a Comment Tracking Number, your comment has been successfully submitted and there is no need to resubmit the same comment. Commenters should be aware that the electronic Federal Docket Management System will not accept any comments after 11:59 p.m. Eastern Time on the last day of the comment period.

- *Paper Comments:* Paper comments that duplicate electronic submissions are not necessary. Should you wish to mail a paper comment *in lieu of* an electronic comment, it should be sent via regular or express mail to: Drug Enforcement Administration, Attn: DEA **Federal Register** Representative/DPW, 8701 Morrissette Drive, Springfield, Virginia 22152–2639.
- *Paperwork Reduction Act Comments:* All comments concerning collections of information under the Paperwork Reduction Act must be submitted to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attention: Desk Officer for DOJ, Washington, DC 20503. Please state that your comment refers to RIN 1117–AB54/Docket No. DEA–506.

FOR FURTHER INFORMATION CONTACT: Scott A. Brinks, Regulatory Drafting and Policy Support Section (DPW), Diversion Control Division, Drug Enforcement Administration; Mailing Address: 8701 Morrissette Drive, Springfield, Virginia 22152–2639; Telephone: (571) 362–3261.

SUPPLEMENTARY INFORMATION:

Posting of Public Comments

Please note that all comments received in response to this docket are considered part of the public record. They will, unless reasonable cause is given, be made available by DEA for public inspection online at *http://www.regulations.gov.* Such information includes personal identifying information (such as your name, address, etc.) that you voluntarily submit. The Freedom of Information Act applies to all comments received. If you want to submit personal identifying information (such as your name, address, etc.) as part of your comment, but do not want it to be made publicly available, you must include the phrase ''PERSONAL IDENTIFYING INFORMATION'' in the first paragraph of your comment. You must also place all of the personal identifying information you do not want made publicly available in the first paragraph of your comment and identify what information you want redacted.

If you want to submit confidential business information as part of your comment, but do not want it to be made publicly available, you must include the phrase ''CONFIDENTIAL BUSINESS INFORMATION'' in the first paragraph of your comment. You must also prominently identify the confidential business information to be redacted within the comment.

Comments containing personal identifying information or confidential business information identified as directed above will be made publicly available in redacted form. If a comment has so much confidential business information that it cannot be effectively redacted, all or part of that comment may not be made publicly available. Comments posted to *http://www.regulations.gov* may include any personal identifying information (such as your name, address, etc.) included in the text of your electronic submission that is not identified as directed above as confidential.

An electronic copy of this proposed rule is available at *http://www.regulations.gov* for ease of reference.

Background and Purpose of This Proposed Rule

Under the Controlled Substances Act (CSA), all persons who seek to manufacture a controlled substance must apply for and obtain a DEA registration.[1] 21 U.S.C. 822(a)(1). The CSA defines ''manufacture'' to include the ''production'' of a controlled substance, which includes, among other things, the planting, cultivation, growing, or harvesting of a controlled substance. 21 U.S.C. 802(15), (22). Thus, any person who seeks to plant, cultivate, grow, or harvest marihuana[2] to supply researchers or for other uses permissible under the CSA (such as product development) must obtain a DEA manufacturing registration. Because marihuana is a schedule I controlled substance, applications by persons seeking to become registered to manufacture marihuana are governed by 21 U.S.C. 823(a). *See generally* 76 FR 51403 (2011); 74 FR 2101 (2009), *pet. for rev. denied, Craker* v. *DEA,* 714 F.3d 17 (1st Cir. 2013). Under section 823(a), for DEA to grant a registration, the DEA Administrator must determine that two conditions are satisfied: (1) The registration is consistent with the public interest (based on the enumerated criteria in section 823(a)), and (2) the registration is consistent with U.S. obligations under the Single Convention on Narcotic Drugs, 1961 (''Single Convention'' or ''Treaty''), 18 U.S.T. 1407.[3]

In 2016, DEA issued a policy statement aimed at expanding the number of manufacturers who could produce marihuana for research purposes. *See* Applications to Become Registered under the Controlled Substances Act to Manufacture Marijuana to Supply Researchers in the United States, 81 FR 53846 (Aug. 12, 2016). Subsequently, the Department of Justice (DOJ) undertook a review of the CSA, including the provisions requiring consistency with obligations under international treaties such as the Single Convention, and determined that certain changes to its 2016 policy were needed. The pertinent Treaty provisions are found in articles 23 and 28 of the Single Convention, which are summarized below. Additionally, DEA believes that these changes will enhance and improve research with marihuana and facilitate research that could result in the development of marihuana-based medicines approved by the Food and Drug Administration (FDA).

This proposed rule is being issued pursuant to the Administrator's authority under the CSA ''to promulgate rules and regulations and to charge reasonable fees relating to the registration and control of the manufacture, distribution, and dispensing of controlled substances,'' 21 U.S.C. 821, and to ''promulgate and enforce any rules, regulations, and procedures which he may deem necessary and appropriate for the efficient execution of his functions under [the CSA],'' 21 U.S.C. 871(b).

A. Relevant Provisions of the Single Convention

Because the terminology used in the Single Convention is somewhat different from that in the CSA, a brief explanation is warranted. The Single Convention uses the terms ''cannabis,'' ''cannabis plant,'' and ''cannabis

[1] All functions vested in the Attorney General by the CSA have been delegated to the Administrator of DEA. 28 CFR 0.100(b).

[2] This document uses both the CSA spelling ''marihuana'' and the modern spelling ''marijuana'' interchangeably.

[3] Section 823(a) provides that the registrations to manufacture controlled substances in schedule I or II must be ''consistent with the public interest and with United States obligations under international treaties, conventions, or protocols in effect on May 1, 1971.'' The Single Convention entered into force for the United States on June 24, 1967. *See* Single Convention, 18 U.S.T. 1407.

resin''—all of which are generally encompassed by the CSA definition of ''marihuana'' in 21 U.S.C. 802(16)).[4] The Single Convention defines ''cannabis plant'' as ''any plant of the genus Cannabis.'' Single Convention art. 1(1)(c). The Single Convention defines ''cannabis'' as the ''flowering or fruiting tops of the cannabis plant (excluding the seeds and leaves when not accompanied by the tops) from which the resin has not been extracted.'' *Id.* art. 1(1)(b). The Single Convention defines ''cannabis resin'' as the ''separated resin, whether crude or purified, obtained from the cannabis plant.'' *Id.* art. 1(1)(d).

Article 28 of the Single Convention states in paragraph 1: ''If a Party permits the cultivation of the cannabis plant for the production of cannabis or cannabis resin, it shall apply thereto the system of controls as provided in article 23 respecting the control of the opium poppy.'' Paragraph 2 of that article excludes from the Convention the cultivation of cannabis for industrial or horticultural purposes. Because the United States permits the cultivation of marihuana for the production of cannabis and cannabis resin currently only for research purposes, it is obligated under the Treaty to apply to the marihuana plant cultivated for these purposes the ''system of controls'' provided in article 23 respecting the control of the opium poppy.

The Commentary to the Single Convention contains the following explanation of articles 23 and 28 within the overall framework of the Treaty:

> The system of control over all stages of the drug economy which the Single Convention provides has two basic features: Limitation of narcotic supplies of each country . . . to the quantities that it needs for medical and scientific purposes, and authorization of each form of participation in the drug economy, that is, licensing of producers, manufacturers and traders . . . . *In the case of the production of opium, coca leaves, cannabis and cannabis resin, this régime is supplemented by the requirement of maintaining government monopolies for the wholesale and international trade in these drugs in countries which produce them* . . . .

Secretary-General of the United Nations, Commentary on the Single Convention on Narcotic Drugs, 1961, 263 (1973) (emphasis added) (footnotes omitted).[5]

Article 23(2) of the Single Convention, made applicable to marijuana cultivation by Article 28, contains five requirements for the supervision, licensing, and distribution of marijuana.[6]

(a) Designate the areas in which, and the plots of land on which, cultivation of the cannabis plant for the purpose of producing cannabis or cannabis resin shall be permitted.

(b) Ensure that only cultivators licensed by the agency shall be authorized to engage in such cultivation.

(c) Ensure that each license shall specify the extent of the land on which the cultivation is permitted.

(d) Require all cultivators of the cannabis plant to deliver their total crops of cannabis and cannabis resin to the agency and ensure that the agency purchases and takes physical possession of such crops as soon as possible, but not later than four months after the end of the harvest.

(e) Have the exclusive right of importing, exporting, wholesale trading, and maintaining stocks of cannabis and cannabis resin, except that this exclusive right need not extend to medicinal cannabis, cannabis preparations, or the stocks of cannabis and cannabis resin held by manufacturers of such medicinal cannabis and cannabis preparations.[7]

DEA already directly performs functions (a), (b), and (c) by virtue of the CSA registration system as applied to manufacturers of marihuana. In order to ensure that DEA complies with the CSA and grants registrations that are consistent with relevant treaty provisions, namely articles 23 and 28 of the Single Convention, DEA proposes to directly perform functions (d) and (e) as well. This proposed rule would amend DEA's regulations so that DEA directly carries out these remaining two functions.

DEA also recognizes that the Department of Health and Human Services (HHS) has, for nearly 50 years, maintained an essential program aimed at ensuring that marihuana is available to meet the research and scientific needs of the United States. The regulations proposed here, if finalized, will require some changes to this program, but DEA is committed to ensuring that the National Institute on Drug Abuse (NIDA) program continues with minimal disruption and there is no impact on the availability of marihuana through the NIDA Drug Supply Program (DSP).

After the publication of the 2016 policy statement, DOJ advised DEA that it must adjust its policies and practices to ensure compliance with the CSA, including the CSA's requirement that registrations be consistent with the Single Convention. Therefore, the regulations being proposed herein, if finalized, would ensure that DEA regulations comply with applicable law. Within that framework, DEA is proposing changes to support using marihuana (including extracts and substances derived therefrom) cultivated in the United States to perform research which, among other things, may lead to the approval of FDA-approved medicines. Thus, the proposed rule, if adopted, would supersede the 2016 policy statement.

To address the foregoing considerations, the proposed rule would add regulations stating:

(1) All registered manufacturers who cultivate cannabis shall deliver their total crops of cannabis to DEA. DEA shall purchase and take physical possession of such crops as soon as possible, but not later than four months after the end of the harvest. DEA may accept delivery and maintain possession of such crops at the registered location of the registered manufacturer authorized to cultivate cannabis consistent with the maintenance of effective controls against diversion. In such cases, DEA shall designate a secure storage mechanism at the registered location in which DEA may maintain possession of the cannabis, and DEA will control access to the stored cannabis. If DEA determines that no suitable location exists at the registered location of the registered manufacturer authorized to cultivate cannabis, then DEA shall designate a location for the

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[4] As discussed below, the Agriculture Improvement Act of 2018, Public Law 115–334, removed hemp from the CSA definition of marihuana. This proposed rule applies only to cannabis that is included in the CSA definition of marihuana.

[5] The United Nations' Economic and Social Council requested that the Secretary-General prepare the Commentary ''in the light of the relevant conference proceedings and other material'' in order to aid governments in applying the Single Convention. The Commentary (1973) is not binding on Parties to the Convention. Economic and Social Council Resolution 1962/914(XXXIV) D (Aug. 3, 1962).

[6] The Single Convention provides that the five functions of article 23, paragraph 2 ''shall be discharged by a single government agency if the constitution of the Party concerned permits it.'' Single Convention art. 23(3). Nothing in the Constitution would preclude the United States from discharging all of those controls through one government agency. The Commentary to the Single Convention notes that this is in order to facilitate national planning and coordinated management of the various tasks imposed upon a country by Article 23, and that in countries where more than one agency is needed on constitutional grounds, administrative arrangements should be made to ensure the required coordination.

[7] The meanings of the terms ''medicinal cannabis'' and ''cannabis preparations'' are addressed later in this document. Article 23, paragraph 2(e) also refers to ''opium alkaloids.'' However, due to distinctions between the opiates derived from the opium poppy and the cannabinoids derived from the cannabis plant, the notion of ''cannabis alkaloids'' is inapplicable.

authorized grower to deliver the crop as soon as possible, but not later than four months after the end of the harvest. However, in all cases the registrant must comply with the security requirements specified in 21 CFR part 1301.

(2) DEA shall, with respect to cannabis, have the exclusive right of importing, exporting, wholesale trading, and maintaining stocks other than those held by registered manufacturers and distributors of medicinal cannabis or cannabis preparations. Such exclusive right shall not extend to medicinal cannabis or cannabis preparations. DEA may exercise its exclusive right by authorizing the performance of such activities by appropriately registered persons. DEA will require prior written notice of each proposed importation, exportation, or distribution of cannabis that specifies the quantity of cannabis to be imported, exported, or distributed and the name, address, and registration number of the registered manufacturer or researcher to receive the cannabis before authorizing the importation, exportation, or distribution. All importation and exportation shall be performed in compliance with 21 CFR part 1312, as applicable. Under no circumstance shall a registered manufacturer authorized to grow cannabis import, export, or distribute cannabis without the express written authorization of DEA.

(3) A registered manufacturer authorized to grow cannabis shall notify DEA in writing of its proposed date of harvest at least fifteen days before the commencement of the harvest.

It should be noted that the timing of when DEA would take physical possession of the crops, if delayed, would not only increase the risk of diversion, but would also adversely impact the quality of the crop. Whereas DEA is proposing to take physical possession not later than four months from the time of harvest, it is DEA's intent to take physical possession as soon as possible and to distribute marihuana as soon as is practical to those who are authorized to receive it.

The exceptions made for ''medicinal cannabis or cannabis preparations'' also warrant explanation. In view of the text of the Single Convention, and taking into account the current wording of Federal law,[8] the regulations being proposed would define these terms as follows:

- Medicinal cannabis means a drug product made from the cannabis plant, or derivatives thereof that can be legally marketed under the Federal Food, Drug, and Cosmetic Act. However, such term does not include any material, compound, mixture, or preparation that falls outside the CSA definition of marihuana.
- Cannabis preparation means cannabis that was delivered to DEA and subsequently converted by a registered manufacturer into a mixture (solid or liquid) containing cannabis, cannabis resin, or extracts of cannabis. However, such term does not include any material, compound, mixture, or preparation that falls outside the CSA definition of marihuana.

Thus, under the proposed rule, DEA would have the exclusive right of importing, exporting, wholesale trading, and maintaining stocks of marihuana other than those held by DEA-registered manufacturers and distributors of medicinal cannabis or cannabis preparations. Further, this exclusive right would not apply to medicinal cannabis or cannabis preparations.

To summarize those provisions of the proposed rule that are intended to ensure that registrations are granted in compliance with the CSA as the number of registered manufacturers increases, all marihuana grown by DEA-registered manufacturers in the United States would be delivered by such registrants to DEA no later than four months after the end of the harvest. Thereafter, DEA would authorize exportation, distribution, and maintenance of stocks of such marihuana with two important exceptions:

(1) DEA-registered manufacturers of (a) an FDA-approved marihuana-derived drug (*i.e.,* ''medicinal cannabis''), and (b) ''cannabis preparations'' would be permitted to maintain stocks of cannabis materials obtained from DEA for the purpose of producing such drugs or preparations; [9] and

(2) Once marihuana material that was previously purchased by DEA is subsequently converted by a DEA-registered manufacturer into (a) an FDA-approved drug (''medicinal cannabis'') or (b) a ''cannabis preparation,'' the material no longer would be subject to the foregoing exclusive right and could be further distributed or dispensed by a DEA registrant in any manner authorized under the CSA. DEA is committed to ensuring this new requirement is implemented in a manner that supports the policy goal of facilitating research involving marijuana and its chemical constituents.

B. Activities Performed by Bulk Manufacturers of Marihuana and the Application of These Proposed Regulations on Those Activities

Based on approximately 35 pending applications resulting from publication of its 2016 policy statement, DEA anticipates that those bulk manufacturers who would obtain a registration from DEA to grow marihuana would be one (or more) of three different types. In this section, DEA describes each type and how the proposed regulations, if finalized as proposed, would impact those registrants with regard to functions (1) and (2) described in the previous section.

(1) A Bulk Manufacturer Who Grows Marihuana for Its Own Research or Drug Development Purposes

A number of applicants seek to grow marihuana for their own research endeavors, including some who wish to develop an FDA-approved medicine from extracts or derivatives of the marihuana plant. Based on the accompanying information supplied by the applicant to DEA in connection with their application, these applicants would list themselves as a ''purchaser,'' meaning that once their crop was harvested, they would seek to use the marihuana for their internal research purposes. Applicants must obtain a separate schedule I research registration from DEA to perform research with marihuana in accordance with 21 CFR 1301.13 and 1301.32. However, bulk marihuana growers may manufacture marihuana for use by other researchers under a manufacturing registration (and pursuant to a quota granted to them by DEA for that purpose under 21 CFR 1303.21(a)).

For applicants within this category, within four months of harvest, DEA would travel to the DEA-registered location, purchase, and take title to the crop by issuing the grower a DEA Form 222.[10] Once DEA has taken title to the

[8] Among other things, these definitions take into account the current CSA definition of marihuana (21 U.S.C. 802(16)), which was amended in 2018 to exclude ''hemp'' as defined in section 297A of the Agricultural Marketing Act of 1946 (7 U.S.C. 1639*o*(1)).

[9] As indicated above, the requirement that registered growers deliver all cannabis to DEA no later than four months after the end of the harvest applies in *all* situations—even where the cannabis will later be distributed by DEA back to the grower for further use. Thus, the above exception that allows DEA-registered manufacturers of medicinal cannabis and cannabis preparations to maintain stocks of cannabis materials for the purpose of producing such drugs or preparations only applies where the raw cannabis material was previously delivered to DEA.

[10] DEA would take title to an amount up to the applicant's manufacturing quota. Growing marihuana in excess of a manufacturing quota is a violation of federal law. 21 U.S.C. 842(b). Thus, any marihuana grown in excess of a manufacturing

Continued

crop, it would then distribute a quantity of marihuana that does not exceed the company's DEA-issued procurement quota back to that same manufacturer. In this way, DEA would take physical possession of the crop and control its distribution. Additionally, the material owned by the government will be maintained at the DEA-registered manufacturer's location and DEA would maintain its ability to access the storage location at which such crops are located as it deemed necessary.

(2) A Bulk manufacturer Who Supplies Marihuana to Other DEA Registrants, Including National Institutes of Health Funded and Non-National Institutes of Health Funded Researchers

Some applicants are seeking to grow marihuana for use by other DEA registrants including ''non-bulk'' manufacturers and schedule I researchers, including National Institutes of Health (NIH) funded and non-NIH funded researchers. This sub-set of bulk manufacturers would be required to obtain from each customer a bona fide supply agreement, listing the name and address of the end user, the end user's DEA registration number, the quantity of marihuana to be supplied, and the price that the end user and grower have mutually agreed upon. DEA will consider this information, along with additional information, when establishing an individual manufacturing quota for the grower.

For applicants that fall within this sub-set, within four months of harvest, DEA would travel to the DEA-registered location, purchase, and take title to the crop by issuing the grower a DEA Form 222.[11] For this reason, each grower must provide written notice to DEA of its proposed date of harvest at least fifteen days prior to the commencement of the harvest. Once DEA has purchased and taken title to the crop, the material would be maintained, under seal, in DEA's possession in the manufacturer's schedule I vault until such time that a distribution is necessary. In this scenario, DEA may distribute (or export) the marihuana directly or may choose to authorize the grower to distribute marihuana on the government's behalf. Again, marihuana owned by the government is maintained at the DEA-registered manufacturer's site where DEA would maintain its ability to access the storage location at which such crops are located as it deemed necessary.

(3) A Bulk Manufacturer Who Supplies Marihuana To Support NIDA's Drug Supply Program

Over the last several decades, NIDA has administered a contract to produce high quality marihuana for use by researchers who have obtained federal funding (grants) for such research.[12] This contract has been awarded to the National Center for Natural Products Research at the University of Mississippi (National Center). In accordance with that contract and DEA regulations, NIDA assesses the quantity of marihuana that is necessary to be grown for research purposes in a given year and communicates that information to both the National Center and DEA. The National Center applies for, and must first obtain, a manufacturing quota from DEA and is then authorized to grow marihuana up to the limit established by their DEA-issued quota. At the time of harvest, a portion of that material is held in inventory at the National Center while other portions are distributed to another DEA registrant, Research Triangle Institute (RTI). Currently, at the direction of NIDA, both RTI and the National Center may prepare marihuana in a manner which is suitable for research studies and ship it to researchers. In these instances, marihuana held in inventory at the National Center and RTI are the property of NIDA. The regulations proposed in this notice of proposed rulemaking (NPRM) are intended to enhance and improve upon existing DEA regulations that supported the NIDA DSP and will facilitate research that may lead to the development of FDA-approved medicines.

This regulation, if finalized, would require changes to the current scheme described above. Although NIDA can, and would, continue to administer the contract in support of its DSP and the National Center (or other NIDA contract holder) could continue to grow and produce marihuana in support of research pursuant to that contract (for as long as that contract is renewed), within four months of harvest, DEA would travel to the National Center at the time of harvest and take title and possession to the crop by issuing the National Center a DEA Form 222.[13] Once DEA has taken title and possession of the crop, the material would be maintained, under seal, in DEA's possession in the National Center's schedule I vault until such time that a distribution to another DEA registrant is authorized. In this scenario, DEA may distribute (or export) the marijuana directly or may choose to authorize the National Center to distribute marihuana on the government's behalf. In both situations, DEA's distributions would be in accordance with NIDA's recommendation. And, as such, DEA does not envision a scenario in which it would deny or delay a distribution to a duly registered schedule I researcher authorized to handle marihuana. Marihuana owned by DEA would be maintained at the National Center, where DEA would maintain its ability to access the storage location at which its crops are located.

C. Application of the Public Interest Factors

As indicated, in addition to the foregoing treaty considerations, DEA may grant a registration to manufacture a schedule I or II controlled substance only where the Administrator determines that the registration is consistent with the public interest, based on the criteria listed in 21 U.S.C. 823(a). The first of those criteria, set forth in subsection 823(a)(1), provides that, for the purpose of maintaining effective controls against diversion, the number of registered bulk manufacturers of a given schedule I or II controlled substance should be limited to that which can produce an adequate and uninterrupted supply of marihuana under adequately competitive conditions.[14]

The proposed rule would explain how DEA will evaluate whether a particular application is consistent with the public interest factors of 21 U.S.C. 823(a), including factor 823(a)(1). As discussed above, a bona fide supply agreement between a grower and a duly registered schedule I researcher or manufacturer provides evidence that an applicant's registration is necessary to produce an adequate and uninterrupted supply of marihuana under adequately competitive conditions. An applicant proposing to grow marihuana to supply its own research may also be deemed to have satisfied the public interest factor of 823(a)(1) upon the presentation of evidence that it possesses a registration to conduct research with marihuana under 21 CFR 1301.32. Such a researcher will only be granted quota to

quota would be subject to seizure and destruction. *See id.* 881(g).

[11] As in the first scenario, DEA only would take title to an amount up to the applicant's manufacturing quota. Any marihuana grown in excess of a manufacturing quota would be subject to seizure and destruction. *See* 21 U.S.C. 842(b), 881(g).

[12] The Department of Health and Human Services maintains procedures for providing this same marihuana to non-NIH funded researchers as well.

[13] As above, DEA only would take title to an amount up to the National Center's manufacturing quota, with amount grown in excess of the manufacturing quota subject to seizure and destruction. *See* 21 U.S.C. 842(b), 881(g).

[14] For a detailed explanation of subsection 823(a)(1), see 74 FR at 2127–33.

the extent authorized by its approved research protocol.

The proposed rule further provides that the Administrator's determination of which applicants to select will be consistent with the public interest factors in section 823(a), with particular emphasis on the criteria discussed in the preceding paragraph as well as the following:

(1) The applicant's ability to consistently produce and supply marihuana of a high quality and defined chemical composition; and

(2) Whether the applicant has demonstrated prior compliance with the CSA and DEA regulations.

The preceding criteria are designed to result in registration of those manufacturers of marihuana that can most efficiently supply the lawful needs of the U.S. market in terms of quantity and quality.[15] These criteria are further aimed at selecting applicants that can be entrusted with the responsibility of a DEA registration and complying with the corresponding obligations under the CSA and DEA regulations.

As indicated above, following the publication of the 2016 policy statement, DEA received numerous applications by persons seeking to become registered as bulk manufacturers of marihuana. There are approximately 35 such applications currently pending. As explained above, the CSA requires DEA to limit the total number of registered bulk manufacturers of a given schedule I or II controlled substance to that necessary to produce an adequate and uninterrupted supply under adequately competitive conditions. In consultation with HHS, DEA wishes to avoid a situation in which the agency is in the midst of evaluating these applications and has to begin an evaluation anew each time it accepts a new marihuana grower application for filing. Thus, the proposed rule provides that, with a limited exception, applications accepted for filing after the date the final rule becomes effective will not be considered pending until all applications accepted for filing on or before the date the final rule becomes effective have been granted or denied by the Administrator.

D. Consideration of the Amendments to the CSA Made by the Hemp Provisions of the Agriculture Improvement Act of 2018

The Agriculture Improvement Act of 2018 (AIA), Public Law 115–334, which became effective December 20, 2018, contained various provisions regarding the cultivation of hemp. The AIA definitions hemp as the plant Cannabis sativa L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis. 7 U.S.C. 1639*o*(1). The AIA amended the CSA definition of marihuana to exclude hemp. Thus, anything that falls within the foregoing definition of hemp is no longer a controlled substance, and the CSA's requirements no longer apply to such substances. Accordingly, this proposed rule would apply only to persons seeking authorization under the CSA (*i.e.,* seeking a DEA registration) to manufacture marihuana that involves the planting, cultivation, growing, or harvesting of marihuana as that term is currently defined in the CSA (21 U.S.C. 802(16)).[16]

E. Factors Affecting Prices for the Purchase and Sale of Marihuana by DEA

As stated above, under articles 23 and 28 of the Single Convention, the government agency must—in addition to taking physical possession—*purchase* all lawfully grown cannabis crops within four months of harvest. Thus, under the proposed rule, DEA will purchase marihuana grown by DEA-registered manufacturers and subsequently sell the marihuana to DEA registrants who seek to acquire it for research, product development, or other lawful purposes under the CSA.

In purchasing such marihuana, DEA intends to use the Diversion Control Fee Account, as established in 21 U.S.C. 886a. Thus, DEA would, under the proposed rule, need to take into account its obligation under 21 U.S.C. 886a(1)(C) to charge fees under its diversion control program ''at a level that ensures the recovery of the full costs of operating the various aspects of that program.'' There are two potential categories of fees that could be used to recover the costs of carrying out the proposed new aspects of the diversion control program relating to cannabis: (1) Fees charged to persons who apply for, and seek to renew, a DEA registration to manufacture marihuana, and (2) fees charged for the sale of marihuana by DEA.

DEA believes that economic forces will not only drive the types, varieties and strains of marihuana materials that will be produced by growers, but that such forces will also drive the fees that DEA-registrants will be willing to pay for marihuana used for research purposes. Accordingly, DEA proposes to allow market forces to direct prices for marihuana grown by the manufacturer and purchased by DEA. As we have stated elsewhere in this proposal, DEA will establish limits on individual production based on bona fide supply agreements between the grower and the end user (a DEA registered manufacturer or a schedule I researcher). Accordingly, DEA will use these terms as the basis for purchasing marijuana from the grower and additionally, for the basis by which it will sell that same marihuana to an end user.

In addition to that negotiated fee, DEA is proposing to add a variable administrative cost (per kilogram (kg)) which it intends to add onto the sales price of the marihuana it sells to end users. The purpose of this administrative fee is to ensure the full recovery by DEA of the costs of administering the program as required by 21 U.S.C. 886a(1)(C). DEA will calculate this variable cost annually by taking the preceding fiscal year's cost to operate the program and dividing it by the quantity in kg of the manufacturing quota for marihuana issued during the current quota year. For example, based on the economic analysis provided below, DEA would calculate an administrative fee of $304 per kg for marihuana distributed to end users. The calculation below is illustrative:

Variable Administrative Fee = $607,644/2,000 kg = $304 per kg [17]

DEA proposes to establish this fee no less than annually and proposes to publish this rate on its website by December 15th of the year preceding the year in which the administrative fee will be collected.

[15] The proposed rule provides that, in determining the legitimate demand for marihuana and its derivatives in the United States, the Administrator shall consult with the Department of Health and Human Services, including its components.

[16] The United States Department of Agriculture has issued regulations and guidance to implement a program for the commercial production of industrial hemp in the United States under the framework of the AIA. *See Establishment of a Domestic Hemp Production Program,* 84 FR 58522 (Oct. 31, 2019).

[17] Rounded to nearest whole dollar. The cost of $607,644 is explained below.

Regulatory Analyses

Executive Orders 12866 (Regulatory Planning and Review), 13563 (Improving Regulation and Regulatory Review), and 13771 (Reducing Regulation and Controlling Regulatory Costs)

This proposed rule was developed in accordance with the principles of Executive Orders 12866, 13563, and 13771. Executive Order 12866 directs agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health, and safety, and other advantages; distributive impacts; and equity). Executive Order 13563 is supplemental to and reaffirms the principles, structures, and definitions governing regulatory review established in Executive Order 12866. Section 3(f) of Executive Order 12866 classifies a ''significant regulatory action,'' requiring review by the Office of Management and Budget (OMB), as any regulatory action that is likely to result in a rule that may: (1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive order.

DEA has determined that, although this proposed rule is not economically significant, it is a significant regulatory action under section 3(f) of Executive Order 12866, thus subjecting it to review by OMB.

I. Need for the Rule

This rule is needed to ensure that DEA complies with the CSA and grants registrations that are consistent with relevant treaty provisions as DEA seeks to increase the number of registered growers of marihuana. Specifically, this proposed rule would amend the provisions of the regulations governing applications by persons seeking to become registered with DEA to grow marihuana as bulk manufacturers and add provisions related to the purchase and sale of this marihuana by DEA. These amendments will ensure that DEA carries out all five functions under Article 23 and Article 28 of the Single Convention pertaining to marihuana, thus facilitating the planning and coordinated management of marihuana production necessary as the number of registered marihuana manufacturers increases.

II. Alternative Approaches

This proposed rule would amend DEA regulations only to the extent necessary to comply with the CSA and to ensure DEA grants registrations that are consistent with the Single Convention as it pertains to marihuana. In areas where DEA has discretion, such as in setting a fee structure to recover the cost of this proposed rule, alternative approaches would be discussed. However, because DEA does not have sufficient information at this time to discuss alternatives for either the future registration fees or the fees for the sale of marihuana, the alternative approaches for such provisions are not included in this proposed rule. Consistent with past agency practice, any proposed changes to registration fees will be the subject of a separate rulemaking proceeding, including a discussion of alternative approaches.

III. Analysis of Benefits and Costs

There are two key benefits associated with this proposed rule. First, DEA believes it is possible that the approval of new growers may increase the variety (quality, potency, etc.) of bulk marihuana for research, leading to more effective research and potentially resulting in the development of FDA-approved drug products. Second, this rule would ensure that DEA's regulations comply with the requirements of the CSA by granting registrations that are consistent with the Single Convention relating to marihuana. DEA is unable to quantify these benefits at this time.

DEA analyzed the costs of this proposed rule and estimates an annual cost of $607,644. The details of the analysis are below.

This proposed rule would amend the provisions of the regulations governing applications by persons seeking to become registered with DEA to grow marihuana as bulk manufacturers and add provisions related to the purchase and sale of this marihuana by DEA. If this proposed rule is promulgated, the following key changes are anticipated: More persons will be authorized to grow marihuana, DEA will purchase and take title to the crops of marihuana, and DEA will, with respect to marihuana, have the exclusive right of importing, exporting, wholesale trading, and maintaining stocks. These changes would mean that authorized purchasers of bulk marihuana to be used for research, product development, and other purposes permitted by the CSA may only purchase from DEA, except that DEA's exclusive rights would not extend to medicinal cannabis or cannabis preparations. The changes described above would affect three primary groups of entities: Growers and prospective growers, the authorizing agencies,[18] and purchasers (generally medical and scientific researchers). To examine the impact of the proposed rule, DEA first reviewed the current system for growing and distributing bulk marihuana, then examined the impact on each of the three affected groups.

Current System

Under current regulations, DEA has authorized one grower, the National Center, to cultivate marihuana for research. NIDA contracts with the National Center to grow marihuana from seeds supplied initially by NIDA for use in research studies.[19] The National Center has designated a secure plot of land or indoor grow facility where marihuana crops are grown every few years, based on current and expected demand. The marihuana is grown, harvested, stored, and made available as bulk marihuana or other purified elements of marihuana to use for research.[20] NIDA obligated approximately $1.5 million in Fiscal Year 2015 under this contract.[21] This amount included costs unrelated to growing and cultivating marihuana, such as extracting chemical components and producing marihuana cigarettes and other marihuana-related material. However, based on recent discussion with NIDA,[22] DEA estimates NIDA's expenses under the contract with the National Center (and any related

[18] The ''authorizing agency'' refers to federal government agencies, including NIDA and DEA.

[19] Production, Analysis, and Distribution of Cannabis and Related Materials, Federal Business Opportunities (Apr. 12, 2015), *https://www.fbo.gov/spg/HHS/NIH/NIDA-01/N01DA-15-7793/listing.html*.

[20] NIDA's Role in Providing Marijuana for Research, National Institute on Drug Abuse, *https://www.drugabuse.gov/drugs-abuse/marijuana/nidas-role-in-providing-marijuana-research*.

[21] Information on Marijuana Farm Contract, National Institute on Drug Abuse, *https://www.drugabuse.gov/drugs-abuse/marijuana/nidas-role-in-providing-marijuana-research/information-marijuana-farm-contract*.

[22] Conference call between DEA Regulatory Drafting and Policy Support section and members of NIDA's Marijuana Drug Supply Program, July 30, 2019.

subcontracts) for the bulk marihuana for 2019 are approximately $2.9 million.[23] The $2.9 million includes compensation for the cultivating and the 2019 manufacturing quota (MQ) of 2,000 kgs for NIDA (National Center) as well as all other duties required in the contract.[24]

Researchers may obtain marihuana for use in research through NIDA's DSP. Bulk marihuana plant material produced under the NIDA DSP is currently available at no cost to research investigators supported by a NIH grant. Marihuana is also available to research investigators who are funded through non-federal sources. Although NIDA considered charging for marihuana on a ''cost-reimbursement basis,'' [25] the current policy is to provide the marihuana at no charge.[26]

Changes to Growers

If this proposed rule is implemented, DEA anticipates approving more than one person to cultivate and harvest bulk marihuana. As explained earlier in this document, the CSA imposes limitations on the number of registrations that DEA may issue to bulk manufacturers of a given schedule I or II controlled substance. In addition, in deciding whether to grant an application for any such registration, the CSA requires DEA to consider the other public interest factors of 21 U.S.C. 823(a), which must be evaluated on an applicant-by-applicant basis. Further, DEA cannot accurately predict in advance which particular applications will be granted, or how many. Accordingly, DEA is unable to accurately estimate the number of registered bulk marihuana growers. As a result, to allow for this analysis, DEA will estimate the economic impact of this proposed rule under two different hypothetical scenarios, the first in which the number of growers expands to three growers, and the second in which the number of growers expands to 15 growers. It should be understood that this range of potential registrants is not necessarily reflective of the actual number of applications that DEA will grant.

In 2016, DEA issued a policy statement regarding applications to become registered to manufacture marihuana to supply research.[27] Since the publication of the 2016 policy statement, DEA has received approximately 35 pending applications for registration as bulk manufacturer of marihuana for research. As indicated above, the CSA requires DEA to limit the total number of registered bulk manufacturers of a given schedule I or II controlled substance to that necessary to produce an adequate and uninterrupted supply under adequately competitive conditions. Therefore, DEA believes a range of 3 to 15 growers is a reasonable estimate for purposes of this economic analysis, with the understanding that the actual number could vary considerably.

The Aggregate Production Quota (APQ), which includes the MQ, represents the annual quantity of marihuana that is necessary for the estimated medical, scientific, research and industrial needs of the United States, for lawful export requirements, and for the establishment and maintenance of reserve stocks.[28] Therefore, given a constant MQ, if more growers are approved to produce bulk marihuana, the quantities of bulk marihuana produced and the cost of production (and the reimbursement of production cost through sales) is transferred from the single incumbent grower to new growers. This means that there is only a transfer of economic activity rather than any new cost. The estimated economic activity of $2.9 million is transferred from the existing single grower to multiple growers.[29]

Transitioning from one large grower to multiple growers may introduce inefficiencies, driving up production or facility costs. Some growers may introduce more costly growing techniques to produce certain traits. Alternatively, some growers may introduce more efficient growing methods, driving down costs. Additionally, having more growers may spur more demand in bulk marihuana for research, pushing up the MQ. In particular, one of the goals of this new rule is to enhance marijuana availability for product development, which may have the effect of increasing the MQ. However, DEA does not have a basis to estimate the impact of these possibilities. Therefore, for the purposes of this analysis, DEA estimates that an increase in the number of approved growers does not impact the MQ. In summary, there is no new cost to growers.

Changes to Authorizing Agencies—Cost to DEA

DEA anticipates that there will be a transfer of economic activity from NIDA to DEA as well as several new costs as a result of this rule. This analysis should in no way be construed as a proposal to modify agency funding or funding sources.

As discussed above, assuming a constant MQ for bulk marihuana of 2,000 kgs, DEA estimates the cost of all the activities the National Center performs under its contract with NIDA and the purchase of the entire aggregate crop, regardless of the number of growers, is $2.9 million. This $2.9 million is not a new cost; it is a transfer. Rather than NIDA paying the current single grower, DEA would pay the multiple new growers. In practice, DEA anticipates crops from multiple growers will be purchased at different times of the year, allowing funds from sales of earlier purchases to pay for subsequent purchases. Therefore, to purchase and distribute $2.9 million in bulk marihuana, a working capital of a lesser amount is likely needed. However, due to many unknowns and to be conservative, for the purposes of this analysis, the estimated transfer and working capital requirement is $2.9 million.

DEA anticipates incurring new costs associated with the following activities: Taking title to the crops and employing personnel to administer the program. The growers, purchasers, and DEA would already understand prior to growing and harvesting, the quantities of marihuana to be distributed and to whom the distribution would be made because the bona fide supply agreements presented during the registration application process would provide such information. In most instances, DEA is expected to purchase and take title to the crop, then sell and distribute the crop to the purchaser on the same day at the grower's registered location. For the purposes of this analysis, DEA assumes the following process:

1. After marihuana is harvested and prepared for delivery to DEA, the registered manufacturer will contact

[23] Anticipated spending for the marihuana DSP for 2019 is $3.3 million to $3.4 million, of which 10%–15% meet the definition of ''hemp'' under the provisions of the AIA. Using the midpoint of these ranges, the estimated spending is $2.9 million for marihuana, excluding hemp. The figures are based on a general discussion, and actual figures may differ.

[24] The 2019 Aggregate Production Quota for all marihuana is 2,450 kgs. 2,000 of the 2,450 kgs are for the NIDA (National Center) cultivating and manufacturing quota of bulk marihuana. *See* 83 FR 67348.

[25] Marijuana Plant Material Available from the NIDA Drug Supply Program, National Institute on Drug Abuse, *https://www.drugabuse.gov/research/research-data-measures-resources/nida-drug-supply-program/marijuana-plant-material-available-nida-drug-supply-program.*

[26] *See* note 22.

[27] Applications to Become Registered Under the Controlled Substances Act to Manufacture Marijuana to Supply Researchers in the United States, 81 FR 53846 (Aug. 12, 2016). This proposed rule, if adopted, would supersede the 2016 policy statement.

[28] 21 CFR 1303.11(a).

[29] The phrase ''multiple growers'' includes the possibility that the current grower is one of ''multiple growers.''

DEA to inform it that the marihuana is ready for collection.

2. Within a reasonable timeframe, but in no event later than four months after the harvest, DEA will purchase and take title to the marihuana. Two DEA Special Agents (or Deputized Task Force Officers) from the nearest local DEA field office will drive an estimated 100 miles (200 miles roundtrip) to the registered manufacturer to take title. Any marihuana that is not immediately distributed is stored in a designated secure storage mechanism at the grower's registered location for later distribution. The number of trips by the two DEA Special Agents equals the number of harvests.

3. For marihuana distributed from storage at the grower's registered location, the grower distributes marihuana on DEA's behalf. If DEA deems it necessary to be present at such distribution, the distribution is scheduled to coincide with DEA's visit to take title to the next crop, requiring no additional trips by DEA to the grower.

4. Each grower has three harvests, requiring DEA to collect three times per year per grower.

For each collection, DEA estimates $2,071 of labor cost [30] and $116 of vehicle cost [31] for a total of $2,187 per collection. DEA understands that some growers, employing certain growing methods, may have more harvests per year. However, DEA does not have a basis to estimate these growers' methods or the number of harvests per year. Therefore, DEA believes three harvests per year is a reasonable estimate. Assuming three collections per year per grower, there would be nine collections with three approved growers and 45 collections with 15 approved growers. Applying the estimated cost of $2,187 per collection, DEA estimates a transport cost of $19,683 and $98,415 for scenarios with three and 15 growers, respectively.

Additionally, DEA anticipates it would need additional personnel resources to operate this program. There are many unknowns and no decisions have been made on hiring. However, for the purposes of this analysis, DEA estimates three full-time-equivalent (FTE) professional staff in the Diversion Control Division would be needed, consisting of one FTE diversion investigator (DI), and two FTE professional/administrative (PA) resources.

Applying the fully loaded annual cost of $211,981 per DI and $168,307 per PA, the estimated total cost of the three FTE employees is $548,595. For the purposes of this analysis, this cost does not vary with the number of growers. Table 1 below summarizes the costs associated with increased staffing.

TABLE 1—COST OF PERSONNEL RESOURCES

Position	Job category	Modular cost/ unit cost ($)	Number of FTEs	Cost ($)
Staff Coordinator	DI	211,981	1	211,981
Program Analyst	PA	168,307	2	336,614
Total	N/A	N/A	3	548,595

In summary the estimated cost to DEA is:

- $19,683 or $98,415 per year to purchase and take title to the bulk marihuana for scenarios with 3 or 15 authorized growers, respectively;
- $548,595 per year for three DEA FTE employees;
- The estimated total annual cost is $568,278 with three growers and $647,010 with 15 growers and no offsetting cost savings at NIDA. Using the average of the two values, the estimated cost to DEA is $607,644. Table 2 summarizes the costs.

TABLE 2—DEA COST SUMMARY

	Low ($)	High ($)	Average ($)
Transport Cost	19,683	98,415	N/A
Personnel Cost	548,596	548,595	N/A
Total Cost	568,278	647,010	607,644

Changes Affecting Researchers

DEA anticipates minimal procedural change for authorized researchers who plan to acquire bulk marihuana for research. The only anticipated procedural change is that some researchers would acquire the bulk marihuana from DEA, rather than from NIDA. As discussed earlier, the only new cost associated with this proposed regulation is the cost to DEA of $607,644, an average of high and low scenarios, which would be recovered by adding an administrative fee of $304 per kg. As discussed earlier, the administrative fee would be adjusted annually.

While the purchaser would purchase marihuana from DEA, this rule does not in any way affect the purchaser's source of funds to purchase from DEA. If marihuana for research is funded by a third party, the researcher may not experience any cost increase. In particular, NIH has long served as a third-party funder for research through grants, including grants to researchers studying marihuana. Nothing in this rule prohibits NIH from continuing to fund such research by continuing to cover the cost of marihuana materials

[30] DEA's loaded hourly rate of a Special Agent is $103.54. Assuming 10 hours each (full work-day) for two agents, the total labor cost associated with collection from a registered manufacturer is $2,071. ''Loaded hourly rate'' includes wages, benefits, and ''loading'' of ''non-productive'' hours, *i.e.,* leave, training, travel, etc.

[31] $116 is based on IRS standard mileage rates for 2019 of $0.58 per mile multiplied by the estimated 200 miles driven, roundtrip.

used in research, via grants to researchers.

Cost Summary

DEA estimates the cost of producing the 2019 MQ for bulk marihuana of 2,000 kgs and operating NIDA's marihuana DSP is $2.9 million per year. Under the proposed rule, DEA anticipates more bulk marihuana producers would be approved. DEA estimates the $2.9 million in economic activity would be transferred across multiple growers, without introducing new costs.

DEA's purchase of bulk marihuana is not a new cost (to the economy); it is a transfer from NIDA to DEA. However, $568,278 to $647,010 in operating costs would be incurred by DEA. DEA will recover the costs of carrying out the proposed new aspects of the diversion control program relating to marihuana by selling the marihuana to the buyer at the negotiated sale price, between the grower and the buyer, plus the administrative fee assessed on a per kg basis.

The net present values (NPVs) of the low cost estimate of $568,278 per year over 10 years are $4.8 million and $4.0 million at a three percent discount rate and 7 percent discount rate, respectively. The NPVs of the high cost estimate of $647,010 over 10 years are $5.5 million and $4.5 million at a three percent discount rate and seven percent discount rate, respectively. The average of the estimated low and high costs is $607,644. The NPVs of the average of $607,644 over 10 years are $5.2 million and $4.3 million at three percent and seven percent discount rates, respectively. Table 3 summarizes the estimated annual effect and NPVs calculation for each of the transfers and the three scenarios.

TABLE 3—SUMMARY OF ANNUAL EFFECT AND NPVS

	Annual effect ($)	NPVs at 3% ($M)	NPVs at 7% ($M)
Cost (Low)	568,278	4.8	4.0
Cost (Average)	607,644	5.2	4.3
Cost (High)	647,010	5.5	4.5

Executive Order 13771 (Reducing Regulation and Controlling Regulatory Costs)

This proposed rule is expected to be a deregulatory action for the purposes of Executive Order 13771. The rule is an enabling rule which, coincidentally with other provisions, expands the number of authorized bulk marihuana growers.

Executive Order 12988 (Civil Justice Reform)

This proposed rule meets the applicable standards set forth in sections 3(a) and 3(b)(2) of Executive Order 12988, Civil Justice Reform, to eliminate ambiguity, minimize litigation, establish clear legal standards, and reduce burdens on regulated parties and the court system.

Executive Order 13132 (Federalism)

This proposed rule does not have federalism implications warranting the application of Executive Order 13132. The proposed rule does not have substantial direct effects on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government.

Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments)

This proposed rule does not have tribal implications warranting the application of Executive Order 13175. It does not have substantial direct effects on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

Regulatory Flexibility Act

In accordance with the Regulatory Flexibility Act (RFA), DEA evaluated the impact of this rule on small entities. DEA's evaluation of economic impact by size category indicates that the proposed rule will not, if promulgated, have a significant economic impact on a substantial number of these small entities.

The RFA requires agencies to analyze options for regulatory relief of small entities unless the agency can certify that the rule will not have a significant impact on a substantial number of small entities. For purposes of the RFA, small entities include small businesses, nonprofit organizations, and small governmental jurisdictions. DEA evaluated the impact of this rule on small entities and a discussion of its findings is below.

As discussed in the section of this proposed rulemaking relating to Executive Orders 12866, 13565, and 13771, this proposed rule would amend the provisions of the regulations governing applications by persons seeking to become registered with DEA to grow marihuana as bulk manufacturers, and add provisions related to the purchase and sale of this marihuana by DEA. If this proposed rule is promulgated, the following key changes are anticipated: More persons will be authorized to grow marihuana; DEA will purchase and take physical possession of crops; and DEA will, with respect to marihuana, have the exclusive right of importing, exporting, wholesale trading, and maintaining stocks. These changes, as explained above, would mean that authorized purchasers of bulk marihuana may only purchase from DEA, except that DEA's exclusive right would not extend to medicinal cannabis or cannabis preparations as these terms are defined in paragraphs (b) and (c), respectively, of proposed § 1318.02 of this proposed rule.

The changes described above would affect three primary groups of entities: Growers and prospective growers, the authorizing agencies (including NIDA and DEA), and purchasers (generally researchers). Because any economic impact on federal agencies is outside the scope of the RFA, the transfer of economic activity between the agencies is excluded from this discussion. To examine the impact of the proposed rule, DEA first reviewed the current system for growing and distributing bulk marihuana, then examined the impact on each of the two affected non-federal groups: Growers (bulk manufacturers of marihuana) and researchers.

Current System

Under current regulations, DEA has authorized one grower, the National Center, to cultivate marihuana for research. NIDA contracts with the National Center to grow marihuana for

use in research studies.[32] The National Center designates a secure plot of land where marihuana crops are grown every few years, based on current and expected demand. The marihuana is grown, harvested, stored, and made available as bulk marihuana or other purified elements of marihuana to use for research.[33] As explained previously, DEA estimates NIDA's expenses under the contract with the National Center (and any related subcontracts) for the bulk marihuana for 2019 are approximately $2.9 million.[34] The $2.9 million includes compensation for the cultivating and the 2019 MQ of 2,000 kgs for NIDA as well as all other duties required in the contract.[35]

Researchers may obtain marihuana for use in research through NIDA's DSP. Bulk marihuana plant material produced under the NIDA DSP is available at no cost to research investigators who are supported by an NIH grant. Marihuana is also available to research investigators who are funded through non-federal sources. Although NIDA considered charging for marihuana on a ''cost-reimbursement basis,'' [36] the current policy is to provide the marihuana at no charge.[37]

Impact on Growers

If this proposed rule is implemented, DEA anticipates approving more than one person to cultivate and harvest bulk marihuana. In 2016, DEA issued a policy statement regarding applications to become registered to manufacture marihuana to supply research.[38] Since the publication of the 2016 policy statement, there are approximately 35 pending applications for registration as bulk manufacturer of marihuana for research. Additionally, some applicants may not meet the statutory and regulatory criteria for holding a registration as a bulk manufacture and will be denied. Therefore, for the purposes of this analysis, DEA will estimate the economic impact of this proposed rule at three and 15 growers with the understanding that the actual number could vary considerably.

The APQ, which includes the MQ, represents the annual quantity of marihuana that is necessary for the estimated medical, scientific, research and industrial needs of the United States, for lawful export requirements, and for the establishment and maintenance of reserve stocks.[39] Therefore, given a constant MQ, if more growers are approved to produce bulk marihuana, the quantities of bulk marihuana produced and the cost of production (and reimbursement of their production cost through sales) is transferred from the incumbent grower to new growers. This means that there is no new cost; instead, there is only a transfer of economic activity. The estimated economic activity of $2.9 million is transferred from the existing single grower to multiple growers.[40]

Transitioning from one large grower to multiple smaller growers may reduce production efficiency, driving up cost. Some growers may introduce more costly growing techniques in order to produce certain traits. Alternatively, some growers may introduce more efficient growing methods, driving down cost. Additionally, having more growers may spur more demand in bulk marihuana for research, pushing up the MQ. However, DEA does not have a basis to estimate the impact of these possibilities.

Impact on Researchers

DEA anticipates minimal procedural change for authorized researchers who plan to acquire bulk marihuana for research. The only anticipated procedural change is that the researcher would acquire the bulk marihuana from DEA, rather than from NIDA or the National Center. As discussed earlier, the only new cost associated with this proposed regulation is the cost to DEA of $607,644, which would be recovered by adding an administrative fee of $304 per kg. As discussed earlier, the administrative fee would be adjusted annually. While purchasers would purchase marihuana from DEA, this rule does not in any way affect the purchasers' source of funds to purchase from DEA. If marihuana for research is funded by a third party, the researcher may not experience any cost increase.

Affected Number of Small Entities

This proposed rule affects the current and prospective bulk manufacturers of marihuana for research and researchers. Based on the discussion above, DEA anticipates up to 15 bulk manufacturers are affected by this proposed rule. Additionally, based on a discussion with NIDA,[41] DEA estimates 40 researchers are affected by this proposed rule. The 40 researchers represent the approximate number of researchers that receive marihuana from NIDA's marihuana DSP.

Based on a review of representative North American Industry Classification System (NAICS) codes for bulk manufacturers and researchers, the following number of firms may be affected: [42]

- 421 firms related to 'Medicinal and Botanical Manufacturing' (325411) [43]
- 9,634 firms related to 'Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)' (541712) [44]

The United States Small Business Administration (SBA) sets size standards that determine how large an entity can be and still qualify as a small business for federal government programs. For the most part, size standards are based on the average annual receipts or the average number of employees of a firm. The SBA size standard for both industries identified by the NAICS codes above is 1,000 employees.[45]

Comparing the SBA size standards to the U.S. Census Bureau, Statistics of U.S. Businesses (SUSB) detailed data on establishment size by NAICS code for each affected industry, DEA estimates

[32] Production, Analysis, and Distribution of Cannabis and Related Materials, Federal Business Opportunities (Apr. 12, 2015), *https://www.fbo.gov/spg/HHS/NIH/NIDA-01/N01DA-15-7793/listing.html*.

[33] NIDA's Role in Providing Marijuana for Research, National Institute on Drug Abuse, *https://www.drugabuse.gov/drugs-abuse/marijuana/nidas-role-in-providing-marijuana-research*.

[34] Anticipated spending for the marihuana DSP for 2019 is $3.3 million to $3.4 million, of which 10 percent to 15 percent meet the definition of ''hemp'' under the provisions of the AIA. Using the midpoint of these ranges, the estimated spending is $2.9 million. The figures are based on a general discussion, and actual figures may differ.

[35] The 2019 APQ for all manufacturers of marihuana is 2,450 kgs. 2,000 kgs are for cultivating and manufacturing of bulk marihuana. *See* 83 FR 67348.

[36] Marijuana Plant Material Available from the NIDA Drug Supply Program, National Institute on Drug Abuse, *https://www.drugabuse.gov/research/research-data-measures-resources/nida-drug-supply-program/marijuana-plant-material-available-nida-drug-supply-program*.

[37] *See* note 22.

[38] Applications to Become Registered under the Controlled Substances Act to Manufacture Marijuana to Supply Researchers in the United States, 81 FR 53846 (2016). This proposed rule, if adopted, would superseded the 2016 policy statement.

[39] 21 U.S.C. 826(a).

[40] The phrase ''multiple growers'' includes the possibility that the current grower is one of the ''multiple growers.''

[41] *See* note 22.

[42] For the purposes of this analysis, the term ''firms'' is synonymous with ''entities.''

[43] 2015 SUSB Annual Datasets by Establishment Industry, U.S. & States, NAICS, Detailed Employment Sizes (U.S., 6-digit and States, NAICS Sectors), United States Census Bureau, *https://www.census.gov/data/datasets/2015/econ/susb/2015-susb.html*.

[44] *Ibid.*

[45] Table of Small Business Size Standards Matched to North American Industry Classification System Codes, United States Small Business Association (Oct. 1, 2017). The NAICS code was updated for 'Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)' from 541712 to 541715. The 2015 SUSB data uses 541712 and the 2017 SBA size standard uses 541715 for the same industry.

the following number of small entities and percent of firms that are small entities by industry:

- 392 (93.1 percent of total) firms in the area of 'Medicinal and Botanical Manufacturing' (325411)
- 9,090 (94.4 percent of total) firms in the area of 'Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)' (541712)

Table 4 details the calculation for the number of small entities by industry.

TABLE 4—NUMBER OF SMALL ENTITIES BY INDUSTRY

NAICS description	Firm size by average employees	Firms	SBA size standard	Small entities	% Small entities
325411—Medicinal and Botanical Manufacturing	<500	384	1,000	384	100
	500–749	3	.....	3	100
	750–999	5	.....	5	100
	1,000–1,499	6	.....	.....	0
	1,500–1,999	2	.....	.....	0
	2,000–2,499	1	.....	.....	0
	2,500–4,999	7	.....	.....	0
	5,000+	13	.....	.....	0
Total	.....	421	.....	392	93.1
541712—Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	<500	8,972	1,000	8,972	100
	500–749	68	.....	68	100
	750–999	50	.....	50	100
	1,000–1,499	70	.....	.....	0
	1,500–1,999	40	.....	.....	0
	2,000–2,499	35	.....	.....	0
	2,500–4,999	132	.....	.....	0
	5,000+	267	.....	.....	0
Total	.....	9,634	.....	9,090	94.4

Applying the calculated respective percentage for small entities to the number of affected bulk manufacturers and researchers, DEA estimates 14 (15 × 93.1 percent) bulk manufacturers and 38 (40 × 94.4 percent) researchers, for a total of 52 small entities, will be affected by this proposed rule. The 14 affected small entity bulk manufacturers represent four percent of the estimated 392 small entities in the 'Medicinal and Botanical Manufacturing' (325412) industry, and the 38 affected small entity researchers represent 0.4 percent of the estimated 9,090 small entities in the 'Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)' (541712) industry. Table 5 summarizes the calculations for the percentage of small entities that are affected by the proposed rule.

TABLE 5—PERCENT OF SMALL ENTITIES AFFECTED BY INDUSTRY

NAICS description	Number of firms	SBA size standard	Estimated number of small entities	Estimated number of affected small entities	Percentage of small entities affected
325411—Medicinal and Botanical Manufacturing	421	1,000	392	14	4
541712—Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	9,634	1,000	9,090	38	0.4
Total	10,055	N/A	9,482	52	N/A

DEA generally uses a threshold of 30 percent as a ''substantial'' number of affected small entities. Thus, the above analysis reveals that a non-substantial amount of small bulk manufacturer entities (4 percent) and of small researcher entities (0.4 percent) will be affected by this proposed rule.

DEA generally considers impacts that are greater than three percent of annual revenue to be a ''significant economic impact'' on an entity. As discussed earlier, DEA estimates that there will be a new cost to DEA of $568,278 to $647,010 per year, or the average of the high and low estimates of $607,644 per year. DEA will recover the costs of carrying out the proposed new aspects of the diversion control program relating to marihuana by selling the marihuana to the buyer at the negotiated sale price, between the grower and the buyer, plus the administrative fee assessed on a per kg basis. Based on the average of the high and low estimates of $607,644 and MQ of 2,000 kgs, the administrative fee is $304 per kg, adjusted annually.

Furthermore, NIH-funded or other third-party funded researchers are likely to request and receive enough funding

for the full price of marihuana, including the administrative fee. There would be no impact to these researchers. However, DEA does not have sufficient information to estimate the number of small entity researchers that would fall under this category. Although DEA is unable to quantify the economic impact for the estimated 14 small entity bulk manufacturers and 38 small entity researchers, the number of affected small entity manufacturers and researchers is not a substantial number of small entities in their respective industries.

Based on the analysis above, and because of these facts, DEA believes this proposed rule, if promulgated, will not have a significant economic impact on a substantial number of small entities.

Unfunded Mandates Reform Act of 1995

In accordance with the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1501 *et seq.,* DEA has determined that this action would not result in any Federal mandate that may result ''in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100,000,000 or more (adjusted annually for inflation) in any 1 year.'' *See* 2 U.S.C. 1532(a). Therefore, neither a Small Government Agency Plan nor any other action is required under the UMRA.

Paperwork Reduction Act of 1995

Pursuant to the Paperwork Reduction Act of 1995 (PRA), 44 U.S.C. 3501 *et seq.,* DEA has identified the following collections of information related to this proposed rule. A person is not required to respond to a collection of information unless it displays a valid OMB control number. Copies of existing information collections approved by OMB may be obtained at *https://www.reginfo.gov/.*

A. Collections of Information Associated With the Proposed Rule

Title: Application for Registration (DEA Form 225); Renewal Application for Registration (DEA Form 225A); Affidavit for Chain Renewal (DEA Form 225B).

OMB control number: 1117–0012.

Form numbers: DEA–225, DEA–225A, DEA–225B.

Type of information collection: Revision of a currently approved collection.

Applicable component of the department sponsoring the collection: Department of Justice/Drug Enforcement Administration, Diversion Control Division.

Affected public who will be asked or required to respond: Business or other for-profit.

Abstract: The Controlled Substances Act requires all businesses and individuals who manufacture, distribute, import, export, or conduct research and laboratory analysis with controlled substances to register with DEA. 21 U.S.C. 822; 21 CFR 1301.11, 1301.13. Registration is a necessary control measure that helps to detect and prevent diversion by ensuring that the closed system of distribution of controlled substances can be monitored by DEA, and that the businesses and individuals handling controlled substances are accountable.

If adopted, this proposed rule would amend the regulations governing applications by persons seeking to become registered with DEA to grow marihuana as bulk manufacturers and add provisions related to the purchase and sale of this marihuana by DEA. Persons seeking to become registered with DEA to grow marihuana as bulk manufacturers would still apply for registration using the same DEA Form 225 as other bulk manufacturers, but DEA would use a new supplemental questionnaire unique to marihuana manufacturers in order to gather additional information about applicants. There would also be new questionnaires used for importer applicants and non-marihuana bulk manufacturer applicants. Forms 225, 225A, and 225B would all receive minor revisions to improve clarity and usability for registrants.

DEA estimates the following number of respondents and burden associated with this collection of information:

- *Number of respondents:* 15,919.
- *Frequency of response:* 1 per respondent per year.
- *Number of responses:* 15,919.
- *Burden per response:* 0.1304 hours.
- *Total annual burden in hours:* 2,076.

B. Request for Comments Regarding the Proposed Collections of Information

Written comments and suggestions from the public and affected entities concerning the proposed collections of information are encouraged. Under the PRA, DEA is required to provide a notice regarding the proposed collections of information in the **Federal Register** with the notice of proposed rulemaking and solicit public comment. Pursuant to section 3506(c)(2) of the PRA (44 U.S.C. 3506(c)(2)), DEA solicits comment on the following issues:

- Whether the proposed collection of information is necessary for the proper performance of the functions of DEA, including whether the information shall have practical utility.
- The accuracy of DEA's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used.
- Recommendations to enhance the quality, utility, and clarity of the information to be collected.
- Recommendations to minimize the burden of the collection of information on those who are to respond, including through the use of automated collection techniques or other forms of information technology.

Please send written comments to the Office of Information and Regulatory Affairs, OMB, Attention: Desk Officer for DOJ, Washington, DC 20503. Please state that your comments refer to RIN 1117–AB54/Docket No. DEA–506. All comments must be submitted to OMB on or before May 22, 2020. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposed rule.

If you need a copy of the proposed information collection instrument(s) with instructions or additional information, please contact the Regulatory Drafting and Policy Support Section (DPW), Diversion Control Division, Drug Enforcement Administration; Mailing Address: 8701 Morrissette Drive, Springfield, Virginia 22152–2639; Telephone: (571) 362–3261.

List of Subjects

21 CFR Part 1301

Administrative practice and procedure, Drug traffic control, Security measures.

21 CFR Part 1318

Administrative practice and procedure, Drug traffic control.

For the reasons stated in the preamble, DEA proposes to amend 21 CFR chapter II as follows:

PART 1301—REGISTRATION OF MANUFACTURERS, DISTRIBUTORS, AND DISPENSERS OF CONTROLLED SUBSTANCES

■ 1. The authority citation for part 1301 continues to read as follows:

Authority: 21 U.S.C. 821, 822, 823, 824, 831, 871(b), 875, 877, 886a, 951, 952, 956, 957, 958, 965 unless otherwise noted.

■ 2. In § 1301.33, revise paragraph (c) and add paragraph (d) to read as follows:

§ 1301.33 Application for bulk manufacture of Schedule I and II substances.

* * * * *

(c) Except as provided in paragraph (d) of this section, this section shall not apply to the manufacture of basic classes of controlled substances listed in Schedule I or II as an incident to research or chemical analysis as authorized in § 1301.13(e)(1).

(d) An application for registration to manufacture marihuana that involves the planting, cultivating, growing, or harvesting of marihuana shall be subject to the requirements of this section and the additional requirements set forth in part 1318 of this chapter.

■ 3. Add part 1318 to read as follows:

PART 1318—CONTROLS TO SATISFY THE REQUIREMENTS OF THE ACT APPLICABLE TO THE MANUFACTURING OF MARIHUANA

Sec.

Authority: 21 U.S.C. 801(7), 821, 822(a)(1), (b), 823(a), 871(b), 886a.

§ 1318.01 Scope of this part.

Procedures governing the registration of manufacturers seeking to plant, grow, cultivate, or harvest marihuana are set forth by this part.

§ 1318.02 Definitions.

(a) Except as provided in paragraph (e) of this section, the term *cannabis* means any plant of the genus Cannabis.

(b) Except as provided in paragraph (e) of this section, the term *medicinal cannabis* means a drug product made from the cannabis plant, or derivatives thereof, that can be legally marketed under the Federal Food, Drug, and Cosmetic Act.

(c) Except as provided in paragraph (e) of this section, the term *cannabis preparation* means cannabis that was delivered to the Administration and subsequently converted by a registered manufacturer into a mixture (solid or liquid) containing cannabis, cannabis resin, or extracts of cannabis.

(d) Except as provided in paragraph (e) of this section, the term *cannabis resin* means the separated resin, whether crude or purified, obtained from the cannabis plant.

(e) As used in this part, the terms *cannabis, medicinal cannabis,* and *cannabis preparation* do not include any material, compound, mixture, or preparation that falls outside the definition of marihuana in section 102(16) of the Controlled Substances Act (the Act) (21 U.S.C. 802(16)).

(f) The term *Single Convention* means the Single Convention on Narcotic Drugs, 1961 (18 U.S.T. 1407).

(g) The term *bona fide supply agreement* means a letter of intent, purchase order or contract between an applicant and a researcher or manufacturer registered under the Act.

(h) The term *registered researcher or manufacturer* means a person registered under the Act to perform research or manufacture of marihuana in Schedule I.

§ 1318.03 Implementation of statutory requirements.

(a) As provided in section 303(a) of the Act (21 U.S.C. 823(a)), the Administrator may grant an application for a registration to manufacture marihuana, including the cultivation of cannabis, only if he determines that such registration is consistent with the public interest and with United States obligations under the Single Convention.

(b) In accordance with section 303(a) of the Act and § 1301.44(a) of this chapter, the burden shall be on the applicant to demonstrate that the requirements for such registration have been satisfied.

§ 1318.04 Specific control measures applicable to the bulk manufacture of marihuana.

For a registration to manufacture marihuana that involves the cultivation of cannabis, the following provisions must be satisfied:

(a) All registered manufacturers who cultivate cannabis shall deliver their total crops of cannabis to the Administration. The Administration shall purchase and take physical possession of such crops as soon as possible, but not later than four months after the end of the harvest. The Administration may accept delivery and maintain possession of such crops at the registered location of the registered manufacturer authorized to cultivate cannabis consistent with the maintenance of effective controls against diversion. In such cases, the Administration shall designate a secure storage mechanism at the registered location in which the Administration may maintain possession of the cannabis, and the Administration will control access to the stored cannabis. If the Administration determines that no suitable location exists at the registered location of the registered manufacturer authorized to cultivate cannabis, then the Administration shall designate a location for the authorized grower to deliver the crop as soon as possible, but not later than four months after the end of the harvest. However, in all cases the registrant must comply with the security requirements specified in part 1301 of this chapter.

(b) The Administration shall, with respect to cannabis, have the exclusive right of importing, exporting, wholesale trading, and maintaining stocks other than those held by registered manufacturers and distributors of medicinal cannabis or cannabis preparations. Such exclusive right shall not extend to medicinal cannabis or cannabis preparations. The Administration may exercise its exclusive right by authorizing the performance of such activities by appropriately registered persons. The Administration shall require prior written notice of each proposed importation, exportation, or distribution of cannabis that specifies the quantity of cannabis to be imported, exported, or distributed and the name, address, and registration number of the registered manufacturer or researcher to receive the cannabis before authorizing the importation, exportation, or distribution. All importation and exportation shall be performed in compliance with part 1312 of this chapter, as applicable. Under no circumstance shall a registered manufacturer authorized to grow cannabis import, export, or distribute cannabis without the express written authorization of the Administration.

(c) A registered manufacturer authorized to grow cannabis shall notify in writing the Administration of its proposed date of harvest at least 15 days before the commencement of the harvest.

§ 1318.05 Application of the public interest factors.

(a) In accordance with section 303(a) of the Act (21 U.S.C. 823(a)), the Administrator shall consider the public interest factors set forth in paragraphs (a)(1) through (6) of this section:

(1) Maintenance of effective controls against diversion of particular controlled substances and any controlled substance in schedule I or II compounded therefrom into other than legitimate medical, scientific, research, or industrial channels, by limiting the importation and bulk manufacture of such controlled substances to a number of establishments which can produce an adequate and uninterrupted supply of these substances under adequately

competitive conditions for legitimate medical, scientific, research, and industrial purposes;

(2) Compliance with applicable State and local law;

(3) Promotion of technical advances in the art of manufacturing these substances and the development of new substances;

(4) Prior conviction record of applicant under Federal and State laws relating to the manufacture, distribution, or dispensing of such substances;

(5) Past experience in the manufacture of controlled substances, and the existence in the establishment of effective control against diversion; and

(6) Such other factors as may be relevant to and consistent with the public health and safety.

(b) The Administrator's determination of which applicants to select will be consistent with the public interest factors set forth in section 303(a), with particular emphasis on the following criteria:

(1) Whether the applicant has demonstrated prior compliance with the Act and this chapter;

(2) The applicant's ability to consistently produce and supply cannabis of a high quality and defined chemical composition; and

(3)(i) In determining under section 303(a)(1) of the Act (21 U.S.C. 823(a)(1)) the number of qualified applicants necessary to produce an adequate and uninterrupted supply of cannabis under adequately competitive conditions, the Administrator shall place particular emphasis on the extent to which any applicant is able to supply cannabis or its derivatives in quantities and varieties that will satisfy the anticipated demand of researchers and other registrants in the United States who wish to obtain cannabis to conduct activities permissible under the Act, as demonstrated through a bona fide supply agreement with a registered researcher or manufacturer as defined in this subpart.

(ii) If an applicant seeks registration to grow cannabis for its own research or product development, the applicant must possess registration as a schedule I researcher with respect to marihuana under § 1301.32 of this chapter. As specified in § 1301.13 of this chapter, chemical analysis and preclinical research (including quality control analysis) are not coincident activities of a manufacturing registration for schedule I substances, including cannabis. In determining under section 303(a)(1) of the Act (21 U.S.C. 823(a)(1)) the number of qualified applicants necessary to produce an adequate and uninterrupted supply of cannabis under adequately competitive conditions, the Administrator shall consider the holding of an approved marihuana research protocol by a registered schedule I researcher seeking to grow cannabis for its own research or product development as evidence of the necessity of the applicant's registration under this factor.

(c) Applications accepted for filing after [EFFECTIVE DATE OF FINAL RULE] will not be considered pending for purposes of paragraph (a) of this section until all applications accepted for filing on or before [EFFECTIVE DATE OF FINAL RULE] have been granted or denied by the Administrator. Where an application is subject to section 303(i) of the Act (21 U.S.C. 823(i)), that section shall apply in lieu of this paragraph (c).

(d) In determining the legitimate demand for cannabis and its derivatives in the United States, the Administrator shall consult with the U.S. Department of Health and Human Services, including its components.

§ 1318.06 Factors affecting prices for the purchase and sale by the Administration of cannabis.

(a) In accordance with section 111(b)(3) of Public Law 102–395 (21 U.S.C. 886a(1)(C)), seeking to recover the full costs of operating the aspects of the diversion control program that are related to issuing registrations that comply with the Controlled Substances Act (CSA), the Administration shall assess an administrative fee. To set the administrative fee, the Administration shall annually determine the preceding fiscal year's cost of operating the program to cultivate cannabis and shall divide the prior fiscal year's cost by the number of kgs of cannabis authorized to be manufactured in the current year's quota to arrive at the administrative fee per kg. The administrative fee per kg shall be added to the sale price of cannabis purchased from the Administration. The administrative fee shall be paid to the Diversion Control Fee Account.

(b) As set forth in § 1318.04, the Administration shall have the exclusive right of, among other things, wholesale trading in cannabis that it purchases from registered manufacturers. The Administration will, therefore, buy from such manufacturer, sell cannabis to registered researchers and manufacturers, and establish prices for such purchase and sale. The Administration will set such prices in the following manner:

(1) Bulk growers of cannabis shall negotiate directly with registered researchers and manufacturers authorized to handle cannabis to determine a sale price for their cannabis. Upon entering into a contract for the provision of bulk cannabis and prior to the exchange of cannabis, the parties shall pay to the Administration an administrative fee assessed based on the number of kgs to be supplied. The administrative fee shall not be recoverable in the event that delivery is rejected by the buyer.

(2) The Administration shall sell the cannabis to the buyer at the negotiated sale price plus the administrative fee assessed on a per kg basis. Prior to the purchase of the cannabis by the Administration, the buyer shall pay the negotiated purchase price and administrative fee to the Administration. The Administration shall hold funds equal to the purchase price in escrow until the delivery of the cannabis by the grower to the Administration. The administrative fee shall not be recoverable in the event that delivery is rejected by the buyer.

(3) After receiving the purchase price and administrative fee from the buyer, the Administration shall purchase the cannabis from the grower, on behalf of the buyer, at the negotiated sale price. The Administration shall retain the administrative fee. In the event the buyer fails to pay the purchase price and the administrative fee, the Administration shall have no obligation to purchase the crop and may order the grower to destroy the crop if the grower cannot find an alternative buyer within four months of harvest.

(4) In instances where the grower of the cannabis is the same entity as the buyer of the cannabis, or a related or subsidiary entity, the entity may establish a nominal price for the purchase of the cannabis. The Administration shall then purchase the entity's cannabis at that price and sell the cannabis back to the entity, or a related or subsidiary entity, at the same price with the addition of the administrative fee.

(c) Administrative fees set in accordance with this part will be made available, on an updated basis, on the Administration's website, no later than December 15th of the year preceding the year in which the administrative fee will be collected.

(d) Nothing in this section shall prohibit the U.S. Department of Health and Human Services from continuing to fund the acquisition of cannabis for use in research by paying, directly or indirectly, the purchase cost and administrative fee to the Administration.

§ 1318.07 Non-liability of Drug Enforcement Administration.

The Administration shall have no liability with respect to the performance of any contractual terms agreed to by a grower and buyer of bulk cannabis, including but not limited to the quality of any cannabis delivered to a buyer. In the event that a buyer deems the delivered cannabis to be defective, the buyer's sole remedy for damages shall be against the grower and not the Administration.

Dated: March 16, 2020.

Uttam Dhillon,

Acting Administrator.

[FR Doc. 2020–05796 Filed 3–20–20; 8:45 am]

BILLING CODE 4410–09–P

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

33 CFR Part 209

[COE–2016–0016]

RIN 0710–AA72

Use of U.S. Army Corps of Engineers Reservoir Projects for Domestic, Municipal & Industrial Water Supply; Withdrawal

AGENCY: Army Corps of Engineers, DoD.

ACTION: Proposed rule; withdrawal.

SUMMARY: As a result of a policy determination by the Assistant Secretary of the Army (Civil Works), the U.S. Army Corps of Engineers (Corps) is withdrawing the proposed rule titled ''Use of U.S. Army Corps of Engineers Reservoir Projects for Domestic, Municipal & Industrial Water Supply,'' which was published on December 16, 2016.

DATES: The Corps is withdrawing the proposed rule published December 16, 2016 (81 FR 91556) as of March 23, 2020.

ADDRESSES: U.S. Army Corps of Engineers, 441 G Street NW, Washington, DC 20314.

FOR FURTHER INFORMATION CONTACT: Amy K. Frantz, Planning and Policy (CECW–P); telephone number: (202) 761–0106; email address: *WSRULE2016@usace.army.mil*; or Daniel Inkelas, Chief Counsel's Office (CECC–L); phone number (202) 761–0345; email address: *WSRULE2016@usace.army.mil.*

SUPPLEMENTARY INFORMATION: None.

Dated: March 16, 2020.

R.D. James,

Assistant Secretary of the Army, (Civil Works).

[FR Doc. 2020–05919 Filed 3–20–20; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF EDUCATION

34 CFR Chapter III

[Docket No. ED–2020–OPE–0044]

Proposed Waiver and Extension of the Project Period for the Predominantly Black Institutions Competitive Grant Program

AGENCY: Office of Postsecondary Education (OPE), Department of Education.

ACTION: Proposed waiver and extension of project period.

SUMMARY: The Secretary proposes to waive the requirements in the Education Department General Administrative Regulations that generally prohibit project periods exceeding five years and project period extensions involving the obligation of additional Federal funds. The proposed waiver and extension would enable 23 projects under CFDA number 84.382A to receive funding for an additional period, not to exceed September 30, 2021.

DATES: We must receive your comments on or before April 22, 2020.

ADDRESSES: Submit your comments through the Federal eRulemaking Portal or via postal mail, commercial delivery, or hand delivery. We will not accept comments submitted by fax or by email or those submitted after the comment period. To ensure that we do not receive duplicate copies, please submit your comments only once. In addition, please include the Docket ID at the top of your comments.

If you are submitting comments electronically, we strongly encourage you to submit any comments or attachments in Microsoft Word format. If you must submit a comment in Adobe Portable Document Format (PDF), we strongly encourage you to convert the PDF to print-to-PDF format or to use some other commonly used searchable text format. Please do not submit the PDF in a scanned format. Using a print-to-PDF format allows the Department to electronically search and copy certain portions of your submissions.

- *Federal eRulemaking Portal:* Go to *www.regulations.gov* to submit your comments electronically. Information on using *Regulations.gov,* including instructions for accessing agency documents, submitting comments, and viewing the docket, is available on the site under ''Help.''
- *Postal Mail, Commercial Delivery, or Hand Delivery:* The Department strongly encourages commenters to submit their comments electronically. However, if you mail or deliver your comments about the proposed waiver and extension, address them to: The Predominantly Black Institutions Competitive Grant Program, CFDA number 84.382A, Attention: Bernadette Miles, U.S. Department of Education, 400 Maryland Avenue SW, Room 250–22, Washington, DC 20202.

Privacy Note: The Department's policy is to make all comments received from members of the public available for public viewing in their entirety on the Federal eRulemaking Portal at *www.regulations.gov.* Therefore, commenters should be careful to include in their comments only information that they wish to make publicly available.

FOR FURTHER INFORMATION CONTACT: Bernadette Miles, U.S. Department of Education, 400 Maryland Avenue SW, Room 250–22, Washington, DC 20202. Telephone: 202–453–7892. Email: *Bernadette.Miles@ed.gov.*

If you use a telecommunications device for the deaf (TDD) or a text telephone (TTY), call the Federal Relay Service (FRS), toll free, at 1–800–877–8339.

SUPPLEMENTARY INFORMATION:

Invitation to Comment: We invite you to submit comments regarding this proposed waiver and extension.

We invite you to assist us in complying with the specific requirements of Executive Orders 12866, 13563, and 13771 and their overall requirement of reducing regulatory burden that might result from this proposed waiver and extension. Please let us know of any further ways we could reduce potential costs or increase potential benefits while preserving the effective and efficient administration of the program.

During and after the comment period, you may inspect all public comments about this proposed waiver and extension of the project period in Room 5059, 550 12th Street SW, Washington, DC, between the hours of 8:30 a.m. and 4:00 p.m., Eastern time, Monday through Friday of each week, except Federal holidays.

Assistance to Individuals with Disabilities in Reviewing the Rulemaking Record: On request, we will provide an appropriate accommodation or auxiliary aid to an individual with a disability who needs assistance to review the comments or other

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May 22, 2020

Timothy J. Shea
Acting Administrator
Drug Enforcement Administration

Re: RIN 1117-AB54/Docket No. DEA-506—Controls To Enhance the Cultivation of Marihuana for Research in the United States

Dear Acting Administrator Shea:

On behalf of Scottsdale Research Institute, LLC ("SRI"), we submit the following comments on the Drug Enforcement Administration's ("DEA") Proposed Rule: Controls to Enhance the Cultivation of Marihuana for Research in the United States, 85 Fed. Reg. 16,292 (Mar. 23, 2020) ("Proposed Rule").

SRI is a non-commercial Arizona LLC and clinical trials site dedicated to advancing the state of medical care through clinical research. Its mission is to conduct high quality, controlled scientific studies to ascertain the general medical safety and efficacy of plant products, including marijuana, to treat pain and PTSD as well as for potential substitution of opioid dependence. SRI conducted Phase II clinical trials with marijuana supplied by the UM Marijuana Research Project. We have commented on the poor quality of that marijuana in *Scottsdale Research Institute, LLC v. Dep't of Justice*, 2:20-cv-00605-JJT (D. Ariz.) (filed March 2020) and *In re: Scottsdale Research Institute*, Case No. 19-1120 (D.C. Cir.) (filed June 2019).

For reasons explained in the comments that follow, SRI urges DEA to withdraw its Proposed Rule. But regardless of whether the agency persists with this rulemaking process, SRI urges DEA to take two additional steps immediately: (1) process the long-pending applications to manufacture marijuana, including SRI's, that the agency received in response to its August 12, 2016 Policy Statement. *See* Applications to Become Registered under the Controlled Substances Act to Manufacture Marijuana to Supply Researchers in the United States, 81 Fed. Reg. 53,846 ("2016 Policy Statement"), and (2) exercise its discretion under section 822(d) of the Controlled Substances Act ("CSA") to "waive the requirement for registration of certain manufacturers" and increase the quantity of research-grade marijuana available for critically important research. 21 U.S.C. § 822(d).

We appreciate the opportunity to submit these comments. Please let us know if you would like additional information or if we can assist in any way.

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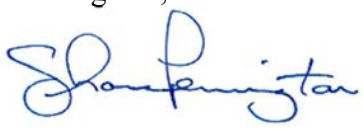
Best regards,



Shane Pennington
Counsel for Scottsdale Research Institute, LLC

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DEA's Proposed Rule defies the CSA's text, fundamental principles of administrative law, and common. For these reasons and other explained below, SRI urges DEA to (1) withdraw its Proposed Rule; (2) process the long-pending applications to manufacture marijuana, including SRI's, that the agency received in response to its August 12, 2016 Policy Statement; and (2) exercise its discretion under section 822(d) of the CSA to "waive the requirement for registration of certain manufacturers" and increase the quantity of research-grade marijuana available for critically important research immediately. 21 U.S.C. § 822(d).

I. FACTS AND PROCEDURAL BACKGROUND

For fifty years, DEA only permitted a single supplier of marijuana. 2016 Policy Statement at 53,846. But in August 2016, the agency reversed course. "To facilitate research involving marijuana and its chemical constituents," DEA announced it would accept applications from persons interested in registering as manufacturers of marijuana (the "Growers Program"). *Id.*

DEA acknowledged that this 2016 Policy Statement marked an important change in the agency's long-settled interpretation of the CSA and the Single Convention on Narcotic Drugs, 1961 ("Single Convention" or "Treaty"), 18 U.S.T. 1407, as forbidding the registration of multiple manufacturers of marijuana. In the 2016 Policy Statement, however, DEA explained that after consulting with the National Institute on Drug Abuse ("NIDA") and the Food and Drug Administration ("FDA"), the agency had reassessed its need to provide an adequate supply of research-grade marijuana. It also explained that it no longer viewed the Single Convention as categorically forbidding the registration of multiple manufacturers of marijuana. After outlining the requirements conditions for lawful cultivation of marijuana under Articles 23 and 28 of the treaty, the 2016 Policy Statement explained that

> DEA believes it would be consistent with the purposes of articles 23 and 28 of the Single Convention for DEA to register marijuana growers outside of the [National Institute on Drug Abuse]-contract system to supply researchers, provided the growers agree that they may only distribute marijuana with prior, written approval from DEA.

2016 Policy Statement at 53,848.

The agency therefore invited the public to apply to register to manufacture marijuana, pledging that

> Any person who applies for a registration to grow marijuana (as with any other applicant for registration under the CSA) is entitled to due process in the consideration of the application by the Agency. To ensure such due process, the CSA provides that, before taking action to deny an

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> application for registration, DEA must serve upon the applicant an order to show cause why the application should not be denied, which shall provide the applicant with an opportunity to request a hearing on the application in accordance with the Administrative Procedure Act. 21 U.S.C. 824(c).

Id. In reliance on the 2016 Policy Statement, SRI applied to cultivate marijuana to support its clinical trials months later.

Then, for almost three years, the Growers Program stalled—without explanation. More than thirty entities applied to manufacture marijuana for research, but none has been approved or denied. In fact, until August 2019, no application had been processed, a ministerial task that involved nothing more than publishing a one-page notice in the Federal Register acknowledging that DEA had received an application. SRI's application remains pending before the agency.

While DEA stalled the program in silence, this was not for want of inquiry. Between April 12, 2018 and May 7, 2019, members of Congress sent several letters to federal government officials inquiring about DEA's failure to act on the Growers Program. The issue also came up repeatedly in congressional hearings. In addition to urging DEA and DOJ to process the long-pending applications, the frustrated legislators also demanded that DEA explain its mysterious refusal to act. Around the same time, rumors began circulating that then-Attorney General Sessions had instructed OLC to review the 2016 Policy Statement for compliance with CSA and Single Convention and forbade DEA from taking action on the pending applications until OLC had completed its review.

Unaware of all this, SRI filed a mandamus petition in the U.S. Court of Appeals for the D.C. Circuit in June 2019, seeking an order compelling DEA to comply with its statutory obligation to publish a notice of SRI's application in the Federal Register. *In re: Scottsdale Research Institute*, Case No. 19-1120 (D.C. Cir.) (filed June 2019). The Court ordered DEA to respond to the petition by August 28, 2019. The day before that deadline, on August 27, DEA published in the Federal Register a notice of SRI's application as well all other applications then-pending. *See* Bulk Manufacturer of Controlled Substances Applications: Bulk Manufacturers of Marihuana, 84 Fed. Reg. 44,920 (Aug. 27, 2019) ("2019 Notice of Applications"). In that notice, DEA explained that "before DEA completes this evaluation and registration process, DEA intends to propose regulations in the near future that would supersede the 2016 policy statement and govern persons seeking to become registered with DEA to grow marihuana as bulk manufacturers, consistent with applicable law." *Id.* at 44,921.

The next day, in its Court-ordered response, DEA did not defend its delay. Instead, it argued only that the 2019 Notice of Applications published in the Federal Register the day before had mooted the case. The Court agreed and dismissed the case, but without prejudice to renewal if DEA significantly delayed going forward.

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More than six months later, DEA finally published the Proposed Rule in the Federal Register, beginning a 60-day public-comment period. Proposed Rule at 16,292. In the Proposed Rule, DEA explains that DOJ had, in fact, determined that the 2016 Policy Statement violated the CSA and Single Convention. *Id.* at 16,293. According to the Proposed Rule, DOJ's new binding interpretation of the CSA and the Single Convention left DEA with no choice but to pursue a notice and comment rulemaking process to implement sweeping changes to its long-standing rules. *Id.* at 16,298. Once the Proposed Rule is finalized, DEA plans to apply its newly-minted standards retroactively to evaluate the pending applications to manufacture. *Id.* DEA also claims its Proposed Rule "would amend DEA regulations *only to the extent necessary* to comply with the CSA and to ensure DEA grants registrations that are consistent with the Single Convention as it pertains to marihuana." *Id.* (emph. added). As a result, DEA candidly acknowledges that it did not consider alternative constructions of the CSA or the treaty. *Id.*

Nowhere in the Proposed Rule or anywhere else, however, does DEA disclose the legal basis for DOJ's conclusion that the 2016 Policy Statement violated the CSA and the Single Convention. As a result, parties like SRI, who crafted their applications with the 2016 Policy Statement's now-rejected standards in mind and paid DEA thousands of dollars to process their applications, found themselves in an impossible position: they had just sixty days to submit comments on the Proposed Rule but lacked access to the government's controlling legal reasoning in support of it.

SRI therefore sued DOJ and DEA again—this time under the Freedom of Information Act. 5 U.S.C. § 552. SRI argued that FOIA's affirmative-disclosure provision, 5 U.S.C. § 552(a)(2), required DOJ and DEA make publicly available the rumored OLC Opinion that embodied the controlling reinterpretation of the CSA and Single Convention and supposedly justified both the agencies' unexplained refusal to implement the Growers Program and its abrupt abandonment of a DEA policy regarding the manufacture of marijuana that had been in place and consistently followed for more than half a century. *Scottsdale Research Institute, LLC v. Dep't of Justice*, 2:20-cv-00605-JJT (D. Ariz.) (filed March 2020). Days after SRI filed its complaint, the parties settled. As part of the settlement, OLC agreed to make the OLC Opinion available for public inspection in an electronic format. https://www.justice.gov/sites/default/files/opinions/attachments/2020/04/29/2018-06-06-marijuana-cultivation.pdf. On April 29, 2020, OLC posted on its website a June 6, 2018 formal opinion on the subject of "Licensing Marijuana Cultivation in Compliance with the Single Convention on Narcotic Drugs" signed by Henry C. Whitaker, Deputy Assistant Attorney General, Office of Legal Counsel, and addressed to Robert C. Gleason, Acting Chief Counsel, Drug Enforcement Administration ("OLC Opinion"). *Id.* After reviewing the OLC Opinion, SRI got to work on these comments.

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II. THE PROPOSED RULE IS INCOMPATIBLE WITH THE CSA.

A. The Proposed Rule is inconsistent with 21 U.S.C. § 823(a).

DEA's plan to consider an applicant's prior compliance with the CSA and DEA regulations directly contravenes the plain text of section 823(a). Congress directed DEA to consider "(2) compliance with applicable State and local law [and] …. (4) prior conviction record of applicant under Federal and State laws relating to the manufacture, distribution, or dispensing of such substances." 21 U.S.C. § 823(a)(2), (4). Two features of these instructions are critical. First, subsection (2) directs DEA to consider "compliance with applicable State and local law" generally—not the applicant's compliance with State and local law. *Id.* Only subsection (4) focuses on the applicant's behavior. *Id.*

Second, subsection (4) doesn't permit DEA to consider the applicant's prior compliance generally. Instead, it permits DEA to consider only an applicant's "prior conviction record." *Id.* DEA's attempt to stretch these narrow directives into a license to hold any and all noncompliance with the CSA and DEA regulations against an applicant simply cannot be squared with the statutory text. And given that DEA's own regulations regarding the registration of manufacturers of marijuana in particular have been in open and continuous violation of the CSA and the Single Convention for over 50 years, *see* OLC Op. at 1, holding noncompliance with those unlawful standards against an applicant would be particularly perverse anyway. If anything, section 823(a)(2)'s focus on "compliance with applicable State and local law" (which goes beyond the focus on conviction record under federal law), counsels in favor of considering applicants who have complied with more permissive State regimes on an equal footing with applicants like SRI who have been in perfect compliance with federal, State, and local law forever.

DEA also claims that its Proposed Rule seeks to amend DEA regulations only to the extent necessary to comply with the CSA and Single Convention. Proposed Rule AT 16,298. And because DEA is statutorily required to adopt these regulations, the argument goes, the agency lacks any discretion to consider alternative approaches. *Id.* DEA offers no authority whatsoever for that claim, however, and the CSA's actual language tells a very different story. As already explained, the CSA imposes an unqualified duty on DEA to register manufacturers whenever doing so is consistent with the public interest and U.S. treaty obligations. *See* 21 U.S.C. § 823(a). And even a quick perusal of the statute shows that Congress afforded DEA plenty of discretion and flexibility in carrying out that important duty. *See* Part III.D. *supra* (discussing 21 U.S.C. § 822(d)).

Also flawed is DEA's view that section 823(a) permits the agency to register manufacturers only if the applicant demonstrates that section 823(a)'s conditions are met." Proposed Rule at16,297. Section 823(a) provides that "[t]he Attorney General

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shall register an applicant to manufacture controlled substances in schedule I or II if he determines that such registration is consistent with the public interest and with United States obligations under international treaties, conventions, or protocols in effect on May 1, 1971." Congress's use of the word "shall" unambiguously obligates the Attorney General (and thus DEA) to register an applicant when certain conditions are met. And it describes those conditions entirely in terms of the the Attorney General's "determination." DEA attempts to rewrite this provision in two ways. First, DEA replaces "shall" with its opposite—"may." Second, DEA's reading makes the obligation to register hinge on the applicant's actions instead of the agency's "determin[ation]" as the Act requires. The plain text of the statute unambiguously forecloses both aspects of DEA's reading.

In arguing otherwise, DEA points to its own regulation, 21 C.F.R. 1301.44, which places the burden of proof with respect to section 823(a) on the applicant. But that regulation addresses a separate issue—namely, the burden of proof applicable at a hearing on an order to show cause. *See id.* Requiring an applicant to make the showing necessary to succeed at a hearing that the CSA requires the applicant to request is one thing. Requiring an applicant to carry that burden outside that limited context and in the face of statutory language that focuses exclusively on DEA's determination as the salient decision point, however, is a different kettle of fish.

The broader context of section 823(a) confirms that DEA's burden-shifting interpretation is misguided. Section 823(a) requires DEA to consider six factors when assessing whether registering an applicant is consistent with the public interest. The sixth and final factor listed is "such other factors as may be relevant to and consistent with the public health and safety." 21 U.S.C. § 823(a)(6). Until DEA issues an order to show cause identifying the reasons DEA believes a particular application should be denied, an applicant may not even be aware of the showing DEA believes is required to satisfy section 823(a) in the applicant's particular case. Demanding that applicant's satisfy requirements they aren't—and cannot be—aware of obviously makes no sense. Once an applicant learns of the alleged deficiencies in his application through an order to show cause, however, the situation is different. If he believes he can make the required showing, he has a statutory right to request a hearing on the order to show cause. At that point, it makes perfect sense to demand that he make the showing required to address DEA's concerns. In short, DEA's attempt to place the burden on the applicant at earlier stages of the adjudicatory process ignores the text and structure of both section 823(a) and the agency's own regulation regarding the burden of proof at show-cause hearings.

DEA misconstrues section 823(a)(1) again insisting that it requires the agency to limit the number of manufacturers to a number of establishments which can produce an adequate and uninterrupted supply of these substances under adequately competitive conditions. Proposed Rule at 16,29. In fact, the statute merely instructs DEA to *consider* such a limitation. 21 U.S.C. § 823(a)(1). The difference between requiring an

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agency to consider a certain restriction among several factors when making a determination and requiring an agency to impose such a restriction each time it makes that determination is obvious.

Moreover, Congress was aware of the difference and intentionally chose to instruct the agency to consider the limitation instead of imposing it across-the-board. Congress derived paragraph 823(a)(1) from the Narcotics Manufacturing Act of 1960, 74 Stat. 55 (1960). Under the 1960 Act, a person seeking to manufacture a basic class of narcotic drugs was required to obtain a license from the Secretary of the Treasury Department. Within the Treasury Department, this function was delegated to the Commissioner of the Bureau of Narcotics (a predecessor of DEA). Section 8 of the 1960 Act set forth the criteria that the Commissioner was required to consider in determining whether to issue a narcotics manufacturing license. Paragraph (a)(1) of section 8 of the 1960 Act—the analog to paragraph 823(a)(1) of the CSA—provided that, in determining whether to issue a license to an applicant seeking to manufacture a basic class of narcotic drug, the Commissioner was required to consider:

> Maintenance of effective controls against the diversion of the particular basic class of narcotic drug and of narcotic drugs compounded therefrom into other than legitimate medical and scientific channels through limitation of manufacture of the particular basic class of narcotic drug to *the smallest number of establishments* which will produce an adequate and uninterrupted supply of narcotic drugs of or derived from such basis class of narcotic drugs for medical and scientific purposes, consistent with the public interest.

(emph. added). DEA's interpretation of section 823(a)(1) as placing an upper limit on the number of manufacturer registrations nullifies Congress's intentional decision to drop this "smallest number" restriction from the 1960 Act. Proposed Rule at 16,296. Indeed, DEA's interpretation is even more restrictive than the 1960 Act, which, like section 823(a), didn't impose any across-the-board constraint on the number of manufacturers and instead merely instructed the agency to *consider* such a restriction.

B. DEA's reading of section 823(a) contradicts the very agency precedent DEA relies on in the Proposed Rule.

DEA's overly-restrictive reading of section 823(a) also ignores the very agency precedent DEA itself relies on in the Proposed Rule. *See* Proposed Rule at 16,293 (discussing *Lyle E. Craker, Denial of Application*, 74 Fed. Reg. 2101 (Jan. 14, 2009) (denying an application for a bulk manufacturer of marijuana)). In its order denying Craker's application, DEA expressly recognized that section 823(a)(1) merely requires that the agency consider limiting the number of manufacturers, expressly rejecting the interpretation DEA advances in the Proposed Rule:

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> To be precise, the text of the CSA (in contrast to that of the 1960 Act) does not unambiguously impose an absolute ceiling on the number of registered manufacturers (that which can produce an adequate and uninterrupted supply under adequately competitive conditions). Rather, as indicated above, the text of the CSA requires DEA to "consider … limiting" the number of manufacturers to such a number (along with considering the other public interest factors). It should also be noted that, whereas the 1960 Act referred to allowing only "the smallest number of establishments which will produce an adequate and uninterrupted supply" (emphasis added), the CSA does not contain the term "smallest" in paragraph 823(a)(1). Nonetheless, as explained above, the use of the term "limiting" in paragraph 823(a)(1) can be construed to mean that DEA, when evaluating an application under § 823(a), must consider keeping as the upper boundary on the number of manufacturers that which can produce an adequate and uninterrupted supply under adequately competitive conditions. In other words, even though Congress when it enacted the CSA did not carry forward from the 1960 Act the term "smallest," because it did carry forward the term "limiting," it retained the concept of an upper limit on the number of manufacturers as a factor to be considered when evaluating an application for registration under § 823(a).

74 Fed. Reg. at 2128 n.105. Despite repeatedly relying on the Craker decision, DEA never acknowledges—much less supplies a reasoned explanation for—its abrupt departure from this more sensible view of the statute. Bedrock APA principles require far more before DEA can simply brush aside its own precedent. *See Nat'l Ass'n of Cas. & Surety Agents v. Bd. of Gov'rs of the Fed. Reserve Sys.*, 856 F.2d 282, 287 (D.C. Cir. 1988) ("It is, of course, a fundamental precept of administrative law that agencies are under an obligation to follow their own regulations, procedures, and precedents, or provide a rational explanation for their departure."); *Siqing Wang v. United States Citizenship & Immigration Servs.*, 366 F. Supp. 3d 118, 119 (D.D.C. 2019) ("USCIS's interpretation of its own regulation is plainly erroneous because it conflicts with the language of the regulation and is unsupported by the regulation's history and USCIS's own precedent.").

DEA's stated plan to consult with HHS on applications to manufacture under section 823(a) would also exceed the agency's statutory authority. See Proposed Rule at 16,297 n.15. Again, section 823(a) requires DEA—not DEA and HHS—to "determine" whether registration is consistent with the public interest and U.S. obligations under the Single Convention. 21 U.S.C. § 823(a). Had Congress thought HHS's views were relevant to the section 823(a) determination, it could have said so, as it did elsewhere in section 823. *See* 21 U.S.C. § 823(f). The fact that Congress did not include similar language in section 823(a) undermines DEA's plan to consult HHS anyway.

RIN 1117-AB54/Docket No. DEA-506—Controls To Enhance the Cultivation of Marihuana for Research in the United States

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C. The Proposed Rule ignores 21 U.S.C. § 823(k).

Finally, DEA invokes that provision in support of its proposal to place particular emphasis on certain factors not specifically listed in section 823(a) when determining whether to grant applications to manufacture marijuana. Proposed Rule at 16,306. Presumably DEA rests its authority to consider these extra-statutory factors on section 823(a)(6), which permits the agency to consider "such other factors as may be relevant to and consistent with the public health and safety." 21 U.S.C. § 823(a)(6). What DEA fails to mention, however, is that elsewhere in section 823 Congress limited section 823(a)(6)'s reference to "factors as may be relevant to and consistent with the public health and safety" to "factors that are relevant to and consistent with the findings contained in section 801 of this title." *See* 21 U.S.C. § 823(k). DEA never mentions this restriction, nor does it explain how the additional factors it intends to consider are "relevant and consistent with the findings contained in section 801 of this title." *Id.* In fact, DEA makes no attempt to show that the factors it identifies are relevant to and consistent with section 823(a)(6)'s focus on "the public health and safety."

D. The Proposed Rule is inconsistent with 21 U.S.C. § 886a.

DEA seeks to fund its purchase of marijuana under the Proposed Rule through the Diversion Control Program Fee Account established in 21 U.S.C. § 886a. Proposed Rule at 16,306. DEA explains its plan as follows:

> In purchasing such marihuana, DEA intends to use the Diversion Control Fee Account, as established in 21 U.S.C. 886a. Thus, DEA would, under the proposed rule, need to take into account its obligation under 21 U.S.C. 886a(1)(C) to charge fees under its diversion control program "at a level that ensures the recovery of the full costs of operating the various aspects of that program." There are two potential categories of fees that could be used to recover the costs of carrying out the proposed new aspects of the diversion control program relating to cannabis: (1) Fees charged to persons who apply for, and seek to renew, a DEA registration to manufacture marihuana, and (2) fees charged for the sale of marihuana by DEA.
>
> DEA believes that economic forces will not only drive the types, varieties and strains of marihuana materials that will be produced by growers, but that such forces will also drive the fees that DEA-registrants will be willing to pay for marihuana used for research purposes. Accordingly, DEA proposes to allow market forces to direct prices for marihuana grown by the manufacturer and purchased by DEA. As we have stated elsewhere in this proposal, DEA will establish limits on individual production based on bona fide supply agreements between the

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> grower and the end user (a DEA registered manufacturer or a schedule I researcher). Accordingly, DEA will use these terms as the basis for purchasing marijuana from the grower and additionally, for the basis by which it will sell that same marihuana to an end user.
>
> In addition to that negotiated fee, DEA is proposing to add a variable administrative cost (per kilogram (kg)) which it intends to add onto the sales price of the marihuana it sells to end users. The purpose of this administrative fee is to ensure the full recovery by DEA of the costs of administering the program as required by 21 U.S.C. 886a(1)(C). DEA will calculate this variable cost annually by taking the preceding fiscal year's cost to operate the program and dividing it by the quantity in kg of the manufacturing quota for marihuana issued during the current quota year. For example, based on the economic analysis provided below, DEA would calculate an administrative fee of $304 per kg for marihuana distributed to end users. The calculation below is illustrative:
>
> Variable Administrative Fee = $607,644/ 2,000 kg = $304 per kg.
>
> DEA proposes to establish this fee no less than annually and proposes to publish this rate on its website by December 15th of the year preceding the year in which the administrative fee will be collected.

Id. at 16,297.

This proposal is problematic for at least two reasons. First, these fees pay for DEA's purchase of marijuana and, for that reason, appear to be subject to section 886(b), which applies to "moneys expended from appropriations of the Drug Enforcement Administration for purchase of controlled substances and subsequently recovered." 21 U.S.C. § 886(b). Such moneys "shall be reimbursed to the current appropriation for the Administration." *Id.* DEA's Proposed Rule never explains why section 886(b) shouldn't apply to the costs associated with the Agency's purchase of marijuana, nor does it explain how such moneys are to be "reimbursed to the current appropriation.

Furthermore, requiring registrants to pay fees based on the number of kilograms they manufacture incentivizes manufacturers to cultivate less marijuana even if producing more would better meet the legitimate needs of researchers. Relatedly, there is no obvious connection between the amount of marijuana manufactured in a given year and DEA's costs for administering the program during that year. Without some rational connection between the amount registrants pay for privilege of cultivating marijuana for research purposes on the one hand and the "benefit" they receive for their payment, the fees set are irrational and therefore in excess of statutory authority. *See* 21 U.S.C. § 821 ("The Attorney General is authorized to promulgate rules and regulations and to *charge reasonable fees* relating to the registration and control of

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the manufacture, distribution, and dispensing of controlled substances and to listed chemicals.") (emph. added).

III. THE PROPOSED RULE IS ARBITRARY, CAPRICIOUS, AND AN ABUSE OF DISCRETION.

The Proposed Rule bears all the hallmarks of arbitrary and capricious agency action.

A. DEA's failure to disclose the legal basis for its Proposed Rule undermines notice and comment and thwarts judicial review.

DEA never provides the legal reasoning that supposedly supports the dramatic upheaval in settled agency policy the Proposed Rule endorses. Instead, the agency merely notes that DOJ concluded that the agency's practices and policies with respect to the manufacture of marijuana violated the CSA and the Single Convention and directed DEA to amend its regulations. Proposed Rule at 16,293. Even assuming DEA is duty-bound to obey DOJ's instructions—a claim that DEA never makes in the Proposed Rule—the APA demands that DEA explain not just that DOJ directed it to adopt these interpretations but also the *legal reasoning* underlying DOJ's directive. *See* 5 U.S.C. § 553(c) (requiring agencies to provide "a concise general statement of their basis and purpose"); *Nat'l Recycling Coal., Inc. v. Browner*, 984 F.2d 1243, 1252 (D.C. Cir. 1993) (agency cannot withhold the legal basis for its actions); *Indep. U.S. Tanker Owners Comm. v. Dole*, 809 F.2d 847, 852 (D.C. Cir. 1987) (quoting S.Doc. No. 248, 79th Cong., 2d Sess. 20 (1946) ("The statement of the 'basis and purpose' of rules issued will vary with the rule, but in any case should be fully explanatory of the complete factual *and legal* basis as well as the object or objects sought.") (emph. added).

The interpretations of the CSA and the Single Convention DEA endorses in the Proposed Rule closely track those defended in the June 6, 2018 Opinion that OLC made publicly available as part of a settlement of FOIA claims SRI brought against DEA and DOJ just days after DEA published the Proposed Rule in the Federal Register. https://www.justice.gov/sites/default /files/opinions/ attachments/ 2020/04/29/2018-06-06-marijuana-cultivation.pdf. It is therefore possible, perhaps likely even, that the OLC Opinion is the authoritative Executive Branch interpretation of the CSA and Single Convention that required DEA to undertake this notice and comment rulemaking. OLC Op. at 1. But DEA never even mentions the OLC Opinion in the Proposed Rule, referring instead to a DOJ determination. Proposed Rule at 16,293.

The existence of what may well be an authoritative statement of the law—even one the federal government was forced to disclose publicly—may raise an inference that the agency embraced the analysis it contains, under the APA "[s]omething more

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precise than an inference—at least an explicit adoption of the [unadopted explanation's] rationale—is requisite." *Hatch v. FERC*, 654 F.2d 825, 834 (D.C. Cir. 1981) (citing *Sec'y of Agric. v. United States*, 347 U.S. 645, 654 (1954)). As a result, DEA's failure to acknowledge, much less expressly adopt the OLC Opinion's legal reasoning, in the Proposed Rule renders it arbitrary and capricious.

To be clear, even if the Proposed Rule *did* contain legal reasoning independent of or even contrary to the OLC Opinion, DEA would still be duty-bound under familiar administrative-law principles to consider and discuss that Opinion in the Proposed Rule. After all, blackletter administrative law instructs that an agency may not ignore an important aspect of the problem it is addressing. *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). ("Normally, an agency rule would be arbitrary and capricious if the agency has … entirely failed to consider an important aspect of the problem ...."). And if anything qualifies as "an important aspect of the problem" confronted by an agency, surely it is a recently-published, twenty-five page exegesis of the issue by OLC—"the centralized and singular voice of executive branch legality." *See* Daphna Renan, *The Law Presidents Make*, 103 Va. L. Rev. 805, 821 (2017) (quoting Griffin B. Bell, U.S. Att'y Gen., *Remarks Adapted from the Eighth Annual John F. Sonnett Memorial Lecture at Fordham University School of Law* (Mar. 14, 1978), in *The Attorney General: The Federal Government's Chief Lawyer and Chief Litigator, or One Among Many?*, 46 Fordham L. Rev. 1049, 1064 and 1068 (1978)).

In short, DEA cannot simply ignore OLC's detailed discussion of the issue. And whether the OLC Opinion or something else explains the legal reasoning that supposedly supports DEA's reinterpretation of the CSA and the Single Convention, DEA cannot keep its legal reasoning in support of the Proposed Rule to itself. A proposed rule that attempts to keep the regulated public, Congress, and the courts in the dark regarding the agency's legal reasoning cannot be squared with the "reasoned decisionmaking" the APA requires. Neither courts nor regulated parties should "be compelled to guess at the theory underlying the agency's action." *SEC v. Chenery Corp.*, 332 U.S. 194, 196-197 (1947).

B. DEA fails to acknowledge—much less explain—its abandonment of policies that have been settled for more than half a century.

The Proposed Rule interprets the CSA and the Single Convention as requiring DEA to

> (d) Require all cultivators of the cannabis plant to deliver their total crops of cannabis and cannabis resin to the agency and ensure that the agency purchases and takes physical possession of such crops as soon as possible, but not later than four months after the end of the harvest.
>
> (e) Have the exclusive right of importing, exporting, wholesale trading, and maintaining stocks of cannabis and cannabis resin, except that this exclusive right need not extend to medicinal cannabis, cannabis

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> preparations, or the stocks of cannabis and cannabis resin held by manufacturers of such medicinal cannabis and cannabis preparations

Proposed Rule at 16,297 (quoting Single Convention). That interpretation marks an abrupt departure from the policy DEA has applied consistently for more than half a century. Indeed, if the interpretation DEA endorses in the Proposed Rule is correct, the agency's approach to the registration of marijuana manufacturers, including the notorious "NIDA monopoly," has been in open and continuous violation of the CSA and U.S. treaty obligations since DEA was created in July 1, 1973—the day DEA was created.

Such sudden upheaval in long-settled agency policy demands a reasoned explanation. The Supreme Court's decision of *FCC v. Fox Television Stations*, 556 U.S. 502, 514 (2009), held that when an agency changes course, it must "display awareness" that it is changing its position, show that there are "good reasons" for the change, and that the "new policy is permissible under the statute." *Id.* And in some situations, the Court explained, an even "more detailed justification" is required—namely when the "new policy rests upon factual findings that contradict those which underlay its prior policy" or where the previous policy has "engendered serious reliance interests that must be taken into account." *Id.* at 515-16. To "ignore" or "disregard" such matters, the Court warned, would be arbitrary and capricious. *Id.* at 516.

The Court clarified the same principle in *Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125 (2016), holding that while a "summary discussion "of an agency's reasons for changing its position "may suffice in other circumstances," when the regulated public has "reli[ed]" on a prior policy, an agency must present a "more reasoned explanation" for "why it deemed it necessary to overrule its previous position." *Id.* at 2127. In such cases, "conclusory statements" from the agency simply will not do. *Id.* at 2126. SRI discusses the reliance interests at stake here below, *see* Part IV *supra*. Because DEA's Proposed Rule would disrupt those reasonable interests, it must, at the very least, explain *why* such a dramatic volte-face is necessary.

C. Having recently granted the National Center's application to manufacture marijuana, DEA cannot use this rulemaking process to excuse further unlawful delays of the thirty-plus other long-pending applications.

DEA claims that it must amend its regulations before making any up or down decisions on the thirty-some long pending applications it received in response to the 2016 Policy Statement. 2019 Notice of Application at 44,921. Yet DEA's supposed need to hold off on granting any registrations to manufacture marijuana while this rulemaking process is underway didn't stop it from granting the National Center's application to manufacture cannabis. *See* 84 Fed. Reg. 2,578 (Feb. 7, 2019). "Where

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an agency applies different standards to similarly situated entities and fails to support this disparate treatment with a reasoned explanation and substantial evidence in the record, its action is arbitrary and capricious and cannot be upheld." *Burlington N. & Santa Fe Ry. Co. v. Surface Transp. Bd.*, 403 F.3d 771, 777 (D.C. Cir. 2005); *Ind. Pet. Ass'n v. Babbitt*, 92 F.3d 1248, 1258 (D.C. Cir. 1996) (same). DEA's failure to acknowledge—much less justify—its disparate treatment of similarly situated parties renders the Proposed Rule arbitrary and capricious.

D. DEA failed to consider relevant alternative approaches.

In the Proposed Rule, DEA admits it did not consider alternatives to its proposed approach because it is only amending its regulations to the extent necessary to comply with the CSA and U.S. treaty obligations. Proposed Rule at 16,298. But DEA overlooks several viable alternatives, including ones suggested by OLC. *See* OLC Op. at 24. SRI briefly describes some of them here:

1. DEA could set prices for marijuana based on market prices for high-quality marijuana sold by dispensaries in states where medicinal marijuana is legal under state law instead basing prices on the prior year's demand from DEA-registered manufacturers. DEA's approach, which rests on the unstated and unsupported assumption that prices for marijuana from the National Center are sufficiently competitive to satisfy section 823(a)(1). Under DEA's interpretation of the CSA, however, the agency may only register additional manufacturers if "necessary to produce an adequate and uninterrupted supply of these substances under adequately competitive conditions for legitimate medical, scientific, research, and industrial purposes." The agency's declared intention to register additional manufacturers of marijuana means the agency has necessarily concluded that the National Center's supply is *not* capable of "producing an adequate and uninterrupted supply of these substances under adequately competitive conditions." It would be absurd to set prices for coming years based on last year's demand for marijuana that DEA admits is inadequate for purposes of section 823(a)(1).

   If DEA really wants a steady supply of a diverse variety of strains and potencies at adequately competitive prices, the obvious starting point would be market prices for medicinal marijuana sold in states where medicinal marijuana is legal under state law. Nothing in the CSA prevents DEA from following that common-sense approach. DEA must therefore explain why it prefers its own seemingly problematic proposal.

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2. The OLC Opinion suggests several alternative arrangements that would satisfy the CSA and Single Convention's requirements. OLC Op. at 24. DEA never mentions any of them. In failing to address OLC's suggestions, DEA fails to consider an important part of the problem, rendering the Proposed Rule arbitrary and capricious. *State Farm*, 463 U.S. at 43 ("Normally, an agency rule would be arbitrary and capricious if the agency has … entirely failed to consider an important aspect of the problem ....").

3. DEA has authority under section 822(d) to waive section 823(a)'s registration requirements "if he finds it consistent with the public health and safety." *See* 21 U.S.C. § 823(d). DEA claims it supports marijuana research but can't register any additional marijuana growers until it completes this rulemaking process. It's not clear why DEA believes its hands are tied in this way, but even assuming they are, section 822(d) permits DEA to greenlight the marijuana cultivation it claims to support *immediately* without registering anyone. Simply put, DEA has options. It cannot claim its hands are tied without explaining why options like the one Congress provided in section 822(d) are off the table.

4. DEA may also want to consider whether it should give weight to whether an applicant agrees to license any intellectual property relating to cannabis on fair, reasonable, and non-discriminatory terms generated after receipt of the license. Section 823(a)(3) requires DEA to consider the "promotion of technical advances in the art of manufacturing these substances and the development of new substances" when evaluating an application to manufacture marijuana. 21 U.S.C. § 823(a)(3). Intellectual property typically promotes technical advances by incentivizing innovation. But here, because DEA anticipates issuing a limited number of licenses, these incentives aren't as strong. Companies that receive licenses will have advantages in cannabis research and development. Favoring companies that commit to license cannabis-related innovations generated after receipt of the license on fair, reasonable, and non-discriminatory terms would be in the public interest because it would insure that companies that receive licenses do not unfairly exploit a privileged, legally required oligopoly to the public's detriment.

IV. THE PROPOSED RULE IS IMPERMISSIBLY RETROACTIVE AND EXACERBATES DEA'S UNLAWFUL DELAY IN PROCESSING PENDING APPLICATIONS.

Absent express congressional approval, newly promulgated agency rules may not be applied retroactively. *Bowen v. Georgetown University Hospital*, 488 U.S. 204, 208

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(1988) (cites omitted) ("[C]ongressional enactments …. will not be construed to have retroactive effect unless their language requires this result. By the same principle, a statutory grant of legislative rulemaking authority will not, as a general matter, be understood to encompass the power to promulgate retroactive rules unless that power is conveyed by Congress in express terms."). This presumption protects core constitutional rights. By ensuring that regulated parties have a chance to know what the law requires of them before they are bound to follow it, the presumption against retroactivity serves the due process interests of "fair notice, reasonable reliance, and settled expectations." *De Niz Robles v. Lynch*, 803 F.3d 1165, 1169 (10th Cir. 2015) (Gorsuch, J.) (quoting *Landgraf v. USI Film Prods.*, 511 U.S. 244, 265 (1994)). And by "preventing the state from singling out disfavored individuals or groups and condemning them for past conduct they are now powerless to change," the presumption serves an important equal protection interest as well. *Id.* (citing Adrian Vermeule, Essay, *Veil of Ignorance Rules in Constitutional Law*, 111 Yale L.J. 399, 408 (2001)).

DEA's Proposed Rule is impermissibly retroactive because it "seeks to impose 'new legal consequences to events completed before its' announcement." *Id.* at 1168 (quoting *INS v. St. Cyr*, 533 U.S. 289, 321 (2001)). SRI and the thirty-some other applicants who responded to DEA's solicitation of applications in the 2016 Policy Statement prepared an application relying on DEA's longstanding approach to assessing applications to manufacture in doing so. For many, that meant tailoring not just their application forms, but also their business affairs and priorities to optimize their ability to satisfy DEA's then-existing standards for registering manufacturers of marijuana. They did all this in reliance on DEA's express public pledge to provide each applicant "due process in the consideration of the[ir] application." 2016 Policy Statement at 53,848.

If finalized, however, the Proposed Rule will upset those reasonable reliance interests. much of that effort will go to waste because DEA will apply entirely different standards when finally evaluating the long-pending applications. The Supreme Court has declared it "hard to imagine a more violent breach of [the reasoned decisionmaking] requirement than [when an agency] appl[ies] a rule of primary conduct or a standard of proof which is in fact different from the rule or standard formally announced." *Allentown Mack Sales & Serv., Inc. v. NLRB*, 522 U.S. 359 (1998). Yet that is precisely what DEA seeks to do with the Proposed Rule.

Furthermore, if finalized, the Proposed Rule would render the pending applications, most of which DEA declared "complete" years ago under then-existing standards, suddenly "incomplete," not because of anything the applicants have done in the meantime but because DEA's Proposed Rule seeks to impose a new requirement that all applicants submit a form that didn't even exist when they submitted their applications. *See* Proposed Rule at 16,305 ("Persons seeking to become registered with DEA to grow marihuana as bulk manufacturers would still apply for registration using the same DEA Form 225 as other bulk manufacturers, but DEA would use a new RIN 1117-AB54/Docket No. DEA-506—Controls To Enhance the Cultivation of Marihuana for Research in the United States

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supplemental questionnaire unique to marihuana manufacturers in order to gather additional information about applicants."). Changing the legal status of past conduct based on a past failure meet a requirement that didn't yet exist is another tell-tale sign of impermissible retroactivity. *See, e.g.*, *Ass'n of Accredited Cosmetology Schs. v. Alexander*, 979 F.2d 859, 864 (D.C. Cir. 1992) (quotes omitted) ("An administrative rule is retroactive if it takes away or impairs vested rights acquired under existing law, or creates a new obligation, imposes a new duty, or attaches a new disability in respect to transactions or considerations already past.").

As a final example, the Proposed Rule would subject those applicants eventually registered to manufacture to additional fees and administrative duties that DEA never mentioned until long after the agency had accepted the pending applications for filing. Many of these requirements bear on the actual mechanics of cultivating, harvesting, and storing the applicants' would-be research-grade marijuana crops. Had applicants and the general public known of these issues before they made decisions to submit—or not submit—applications to manufacture in response to the 2016 Policy Statement, they might have changed their assessment of the pros and cons of applying. Such considerations may well have altered those decision, resulting in DEA receiving a more or less competitive set of applications than the set currently before the agency. This, in turn, would have impacted the competitive process of selecting additional manufacturers of marijuana.

Where, as here, a rule seeks to impose new obligations or disadvantages a person's prospects in an ongoing adjudication based on past conduct the person can longer change, it is impermissibly retroactive. *E.g.*, *Nat'l Min. Ass'n v. U.S. Dep't of Interior*, 177 F.3d 1, 8 (D.C. Cir. 1999) (rule impermissibly retroactive because it "impose[d] a new disability, permit ineligibility, based on transactions or considerations already past, namely pre-rule violations by mine operators over whom permit applicants acquired control before the rule's effective date") (quotes omitted).

We note that DEA did offer to refund application fees upon receipt of a request to withdraw in the Notice of Applications. 84 Fed. Reg. 44,922 (Aug. 27, 2019). The offering of a refund does not cure the above issues. And even if it did, DEA set the withdrawal deadline on November 1, 2019, months before DEA announced the new standards.

DEA's Proposed Rule is also unlawful because it exacerbates the agency's already egregious delays in processing applications like SRI's, which have been pending for years. *See* 5 U.S.C. § 706(1 (court "shall … compel agency action unlawfully withheld or unreasonably delayed").

DEA's years-long refusal to adjudicate the pending applications it solicited in the 2016 Policy Statement is unreasonable. In the almost four years since DEA solicited the thirty-plus applications through the 2016 Policy Statement, it has not granted or denied a single one. This delay is unusual, unprecedented even. The typical time from

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application submission to a notice in the Federal Register is months, not years. Indeed, DEA routinely processes applications within this timeframe:

- On December 12, 2018, Siemens Healthcare Diagnostics Inc. applied to be a bulk manufacturer of Ecgonine, a Schedule II substance. A notice in the Federal Register followed on March 21, 2019. 84 Fed. Reg. 10,534.

- On October 12, 2018, Johnson Matthey Inc. applied to be a bulk manufacturer of Schedule I and II substances. A notice in the Federal Register followed on February 21, 2019. 84 Fed. Reg. 5,477.

- On August 22, 2018, Insys Manufacturing, LLC applied to be a bulk manufacturer for Marijuana and Tetrahydrocannabinols to produce synthetic ingredients for product development and distribution to customers. A notice in the Federal Register followed on March 21, 2019. 83 Fed. Reg. 54,611.

- The agency approved eight applications in September 2017, *see* 82 Fed. Reg. 44,842 (Sept. 26, 2017), and seven more in May 2018, *see* 83 Fed. Reg. 22,518 (May 15, 2018).

In short, measured by the agency's past practice, the delay at issue here is beyond the pale.

The APA requires agencies to "proceed to conclude [ ] matter[s] presented to [them]" "within a reasonable time." 5 U.S.C. § 555. DEA's longstanding refusal to adjudicate applications like SRI's, which the agency itself solicited nearly four years ago, is thus already unlawful. And its attempt to hold those applications in administrative purgatory even longer while it conducts a notice and comment rulemaking made necessary by its own longstanding violation of the CSA and Single Convention is beyond the pale. As explained elsewhere in these comments, *see* Part III.B. *supra*, Congress gave DEA the tools necessary to bring this unlawful delay to an end immediately. There is simply no conceivable reason to delay marijuana cultivation and the important research it facilitates to a minute more.

V. CONCLUSION

SRI urges DEA to withdraw its Proposed Rule. But regardless of whether the agency persists with this rulemaking process, SRI urges the agency to take two additional steps immediately: (1) process the long-pending applications to manufacture marijuana, including SRI's, that the agency received in response to the 2016 Policy

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Statement, and (2) exercise its discretion under section 822(d) to "waive the requirement for registration of certain manufacturers" to increase the quantity of research-grade marijuana available for critically important research. 21 U.S.C. § 822(d).

SUMMARY:

The Drug Enforcement Administration is proposing to amend its regulations to comply with the requirements of the Controlled Substances Act, including consistency with treaty obligations, in order to facilitate the cultivation of marihuana for research purposes and other licit purposes. Specifically, this proposed rule would amend the provisions of the regulations governing applications by persons seeking to become registered with DEA to grow marihuana as bulk manufacturers and add provisions related to the purchase and sale of this marihuana by DEA.

PROMPT:

[PUBLIC COMMENT PERIOD OPEN UNTIL MAY 22]

REFERENCES:

- Summary of Proposed 2020 Rule & Request for Public Comment
- Full 2020 Proposed Rule
- DEA Press Release re: 2020 Proposed Rule
- Office of Legal Counsel (OLC) Opinion (2018)
- Single Convention 1961
- Commentary to Single Convention 1961
- DEA Policy Statement 2016

***** [COMMENT STARTS ON PAGE 2] *****

VIA ELECTRONIC SUBMISSION—REGULATIONS.GOV

Document Management Staff, Drug Enforcement Administration
Re: Docket No. DEA-506
RIN 1117-AB54
Request for Information on Controls to Enhance the Cultivation of Marijuana for Research in the United States

Multidisciplinary Association for Psychedelic Studies -- *Comment for the public record*

VIA ELECTRONIC SUBMISSION—REGULATIONS.GOV
Attn: Drug Enforcement Agency (DEA)
Re: *"Request for Information on "Controls to Enhance the Cultivation of Marihuana (*sic*) for Research"*

INTRODUCTION

The Multidisciplinary Association for Psychedelic Studies ("MAPS") welcomes the opportunity to submit the following Comments in response to the Drug Enforcement Administration's (DEA) notice of proposed rulemaking ("NPRM") published in the Federal Register on March 23, 2020. The NPRM proposed to amend and supplement existing regulations governing applications for registration with DEA as a bulk manufacturer of marijuana and add new procedures governing the purchase, sale and distribution of the cannabis such manufacturers produce (the proposed amendments and new procedures noticed in the NPRM are hereinafter referred to collectively as the "Proposed Rules").

MAPS is an IRS- approved 501(c)3 research and educational organization whose mission includes developing FDA-approved medical uses of MDMA-assisted psychotherapy, marijuana and other Schedule I substances. Since 2001, MAPS has been working in association with Professor Lyle Craker, Professor Emeritus of Botany and Plant Sciences at University of Massachusetts, Amherst's Stockbridge School of Agriculture, to obtain to license from the DEA to produce a MAPS-owned but still DEA-regulated supply of marijuana for FDA-regulated drug development research and potential prescription sales.

Professor Craker and MAPS have collaborated over the past 20 years in efforts to forge a legal pathway to enable MAPS to pursue a central component of its institutional mission: privately-funded medicinal cannabis botanical drug product development. This necessarily

entailed efforts to challenge and change the regulatory scheme that created and enforced NIDA's monopoly control as the sole legal source of marijuana for medical research. An essential prerequisite of any privately-funded drug development project is assurance of an uninterrupted consistent supply of the drug or botanical at an economically feasible price accepted by the FDA for use in the FDA drug approval process and potentially as a prescription medicine. NIDA makes marijuana available to researchers but its supply is not for commercial use and cannot be used in FDA-regulated Phase 3 trials. MAPS' FDA drug development effort requires an uninterrupted and consistent supply of marijuana for FDA-regulated Phase 3 studies and potential prescription sales.

In 2016, when DEA announced it was significantly changing its policies governing the supply of marijuana for medical research, MAPS and Professor Craker were therefore pleasantly surprised that DEA stated not only that it intended to register additional suppliers, effectively ending the NIDA monopoly, but moreover that DEA's motivation in doing so was to encourage and facilitate privately-funded marijuana drug development efforts. DEA acknowledged that,

> "The historical system, under which NIDA relied on one grower to supply marijuana on a contract basis, was designed primarily to supply marijuana for use in federally funded research—not for commercial product development. Thus, under the historical system, there was no clear legal pathway for commercial enterprises to produce marijuana for product development." ("Applications to Become Registered Under the Controlled Substances Act To Manufacture Marijuana To Supply Researchers in the United States," 81 FR 53846, hereinafter "2016 DEA Policy Statement").

MAPS and Professor Craker support the DEA's stated intention underlying the 2016 Policy Statement and the NPRM at hand: to register additional bulk manufacturers in order to facilitate increased marijuana drug development efforts. We are cautiously optimistic that DEA will implement and apply the Proposed Rules in an equitable manner that will achieve the DEA's stated objectives that are centrally important to us and our work, namely, "to enhance and improve research with marihuana and facilitate research that could result in the development of marihuana-based medicines approved by the Food and Drug Administration (FDA),"[1] and "to support using marihuana (including extracts and substances derived therefrom) cultivated in the United States to perform research which, among other things, may lead to the approval of FDA-approved medicines)."[2] We are concerned, however, that DEA's implementation may inappropriately sacrifice those stated policy objectives, especially in the context of applications for registration, like Professor Craker's, seeking to supply privately-funded medicinal cannabis

botanical drug product development due to an overly-restrictive interpretation of U.S. obligations under the Single Convention on Narcotic Drugs, 1961[1] (''Single Convention''), 18 U.S.T.1407.[3] Our concerns are based upon our historical involvement with DEA over the past 20 years, and more specifically DEA's long-standing opposition to the drug development work we seek to do,[2] as well as the manner in which DEA has opposed our efforts, primarily through bureaucratic delay. It is through this historical lens that we see the significance and danger of several ambiguities and omissions in key provisions of the Proposed Rules. Our specific recommendations are intended to resolve those concerns by making more clear that DEA will implement the Proposed Rules and especially the provisions based upon DEA's interpretation of the Single Convention's requirements in a manner that truly encourages privately-funded medicinal cannabis botanical drug product development.

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[1] NPRM, 85 FR 16292 at 16283

[2] NPRM, 85 FR 16294

[3] NPRM, 85 FR 16293

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it doesn't feel accurate to characterize a law enforcement agency's compliance with statutory language as a "policy objective"
?

It is through this historical lens that we see the significance and danger of several ambiguities and omissions in key provisions of the Proposed Rules. Our Recommendations below are intended to resolve those concerns by adding language to clarify and resolve these ambiguities, supply omitted details, require DEA to act swiftly and equitably on applications that were submitted before this NPRM, and refrain from overly-restrictive interpretations of the single Convention and the obligations it imposes upon DEA.

In the next section of these Comments, we discuss Professor Craker's two applications for DEA registration as a bulk manufacturer to provide marijuana for MAPS-sponsored FDA-approved clinical studies; and DEA's responses in opposition, including repeated and significant delays.

We then present our Concerns and Recommendations. Our concerns include the lack of specific timelines or procedures describing when and how DEA will take action on the currently pending applications, and with the lack of clarity regarding how the DEA will apply the Proposed Rules, especially the provisions to implement the Single Convention's "actual

possession" requirements and the exception for ''medicinal cannabis or cannabis preparations'' including how "medicinal cannabis" is defined. We also discuss the danger that DEA may impose arbitrary and unnecessary numerical limits on the number of registrations it will approve under its Propose Rules.

DEA'S HISTORY OF DELAYS AND OPPOSITION

MAPS has supported and assisted Professor Craker in twice applying for registration as a bulk manufacturer of marijuana. Professor Craker submitted his first such application in 2001. Over the ensuing decade-plus, DEA left no doubt that it adamantly opposed ending the NIDA monopoly, generally, and Dr. Craker's planned collaboration with MAPS specifically. Repeated DEA delays also served to protect the existing NIDA monopoly and obstruct efforts to create a legal pathway for privately-funded medicinal cannabis botanical drug development, including MAPS's plans to have Professor Craker provide an alternative source of marijuana for FDA clinical trials aimed at gaining FDA approval for whole-plant smoked or vaped medicinal cannabis. DEA claimed to lose the application, then did nothing for the next three years; Professor Craker filed a lawsuit in federal court alleging unreasonable delay, and only after the court ordered the agency to file responsive pleading explaining the delay did DEA finally issue an order to show cause indicating its intention to deny the application, triggering Professor Craker's right to Administrative review under the Administrative Procedure Act (APA), including the right to an evidentiary hearing. After the conclusion of that hearing, in February 2007, DEA Administrative Law Judge (ALJ) Mary Ellen Bittner issued an 80-page opinion recommending that DEA grant Dr. Craker's application. Again, the agency delayed, waiting almost two years before finally issuing its final order rejecting ALJ Bittner's recommendation on the bases that NIDA monopoly served satisfactorily to meet domestic research demand and was required by federal law and the Single Convention treaty. 74 FR 2101.

With the publication of its 2016 Policy Statement, DEA announced that it intended to register new applicants for licenses to manufacture marijuana. The agency explicitly announced it was ending the NIDA monopoly over the supply of marijuana for research:

> "Based on discussions with NIDA and FDA, DEA has concluded that the best way to satisfy the current researcher demand for a variety of strains of marijuana and cannabinoid extracts is to increase the number of federally authorized marijuana growers. To achieve this result, DEA, in consultation with NIDA and FDA, has developed a new approach to allow additional marijuana growers to apply to become registered with DEA, while upholding U.S. treaty obligations and the CSA." 81 FR 53846

Taking the agency at its word, MAPS eagerly assisted Professor Craker in preparing a new application for registration as a bulk manufacturer of marijuana, which was submitted on February 22, 2017.

But, rather than act on Professor Craker's second application (or any of the other applications the agency received in the wake of announcing its new policy), DEA again delayed action.,DEA did not publish notice in the Federal Register of any applications submitted in response to the 2016 Policy Statement, until more than 2 ½ years after accepting Professor Craker's application for filing.[1] In August 2019, more than three years after DEA encouraged the new applications, Scottsdale Research Institute brought suit, urging DEA to process its application. In response, on August 27, 2019, DEA finally noticed all applicants. More than six months later, on March 23, 2020, DEA published the proposed rule at hand. 81 FR 53846.

MAPS has recently completed a state-of-Colorado-funded FDA-permitted Phase 2 clinical trial with NIDA research material in 76 US veterans with PTSD.[2] MAPS is currently designing a protocol to expand on that study in a larger number of participants; taking a botanical product through the rigors of the FDA approval process necessitates a close working relationship with the manufacturer. To that end, MAPS intends to partner with Prof. Craker as a DEA-licensed manufacturer to continue our federally approved drug development research with marijuana.

MAPS hopes to leverage its relationship with Prof. Craker, as well as the organization's extensive experience with clinical trials utilizing Schedule 1 substances including marijuana, to continue to conduct research with an optimized plant product capable of meeting the quality and consistency standards of an FDA-approved medicine.

The 2016 policy statement research using marijuana that would result in FDA-approved medicines,[3] as Prof. Craker arecognized the lack of effective incentives or clear legal pathway

[1] At least Professor Craker was informed, albiet indirectly, that his second application fared better in the earliest stages than did his first application submitted to DEA 2001; [insert basic details re: DEA losing the first application]. Informed by that 2001 experience, MAPS and Professor Craker enlisted the assistance of Senator Elizabeth Warren. DEA acknowledged, in a response to an August 2017 inquiry from the Senator, that the agency had indeed received Professor Craker's application and was processing it—apparently, it had not gone missing.
[2] From 2016 to 2018, MAPS conducted a randomized, double-blind, placebo-controlled Phase 2 clinical trial to evaluate the safety and efficacy of four different potencies of smoked NIDA marijuana to manage symptoms of chronic, treatment-resistant posttraumatic stress disorder (PTSD) in 76 veterans. This study was funded by a $2.156 million grant from the Colorado Department of Public Health and Environment (CDPHE).
[3] See 81 FR 53848 at 53846. ("The historical system, under which NIDA relied on one grower to supply marijuana on a contract basis, was designed primarily to supply marijuana for use in federally funded research—not for commercial product development. Thus, under the historical system, there was no clear legal pathway for

for privately funded drug development as MAPS had previously pointed out. In the policy change, DEA stated it could register additional applicants consistent with US international treaty obligations.[4]

MAPS has been directly impacted by the agency's history of inaction and delay in issuing additional licenses over the last two decades. From the 2016 Policy Change, to the delayed publication of the 2018 OLC opinion, to these rule-making proceedings themselves, have had the effect – regardless of whether DEA intended it so – of adding yet another three to five years, or more, delay.

While we harbor some continued skepticism, we are hopeful the proposed rule change will have a substantive impact on the number of manufacturers of marijuana for clinical research in the United States. With our stated interest in mind, we want to bring attention to ambiguities we noticed, and provide some suggestions for implementation of the policy to issue additional licenses. These comments are intended to promote a swift, equitable, and reasonable adoption and implementation of these proposed rules.

commercial enterprises to produce marijuana for product development. In contrast, under the new approach explained in this policy statement, persons may become registered with DEA to grow marijuana not only to supply federally funded or other academic researchers, but also for strictly commercial endeavors funded by the private sector and aimed at drug product development. Likewise, under the new approach, should the state of scientific knowledge advance in the future such that a marijuana-derived drug is shown to be safe and effective for medical use, pharmaceutical firms will have a legal means of producing such drugs in the United States—independent of the NIDA contract process.")

[4] Id. at 53848. ("DEA has concluded, based on discussions with NIDA and FDA, that it would be beneficial for research to allow additional marijuana growers outside the NIDA-contract system, provided this could be accomplished in a manner consistent with the CSA and the treaty... DEA believes it would be consistent with the purposes of articles 23 and 28 of the Single Convention for DEA to register marijuana growers outside of the NIDA-contract system to supply researchers, provided the growers agree that they may only distribute marijuana with prior, written approval from DEA. In other words, in lieu of requiring the growers to operate under a contract with NIDA, a registered grower will be permitted to operate independently, provided the grower agrees (through a written memorandum of agreement with DEA) that it will only distribute marijuana with prior, written approval from DEA. DEA believes this new approach will succeed in avoiding one of the scenarios the treaty is designed to prevent: Private parties trading in marijuana outside the supervision or direction of the federal government.")

CONCERNS & RECOMMENDATIONS

1) LACK OF AGENCY DEADLINES, INSUFFICIENT ACCOUNTABILITY PROCEDURES, AND NO PATH TO AMEND APPLICATIONS

CONCERNS: The Proposed Rules provide no timeline or deadlines for DEA to take action on currently pending applications or applications submitted after the rules are final and promulgated, and there are no procedures (other than federal court intervention to compel agency action unreasonably withheld) for applicants to compel timely agency action. Further, the proposed rule presents no opportunity for applicants who submitted applications prior to promulgation of these new rules to amend their applications in light of the new rules.

REASONS FOR CONCERNS:
The 2016 DEA Policy Change laid the groundwork for a remarkable (and long overdue) sea-change in this regulatory environment. Not only did the 2016 policy purport to license additional bulk manufacturers of marijuana, it did so with the explicit goal of facilitating and incentivizing privately-funded medicinal cannabis drug product development. The Proposed Rule at hand continues to acknowledge this purported policy goal. 85 FR 16292 at 16293 ("DEA believes that these changes will enhance and improve research with marihuana and facilitate research that could result in the development of marihuana-based medicines approved by the Food and Drug Administration.")

Given DEA's long history of delay, both generally and specifically with regard to Dr. Craker's applications, and given DEA's long-standing explicit opposition to the MAPS goal of privately-funded medicinal cannabis botanical drug development, we maintain skepticism concerning the DEA's professed commitment to issuing additional registrations. From the Policy Change in 2016, to the secret OLC opinion in 2018, to these rule-making proceedings themselves, this "commitment" has had the effect – regardless of whether DEA intended it so – of adding yet another three to five years, or more, delay.

In these circumstances, the APA's rule against unreasonable delay (*see* 5 U.S.C. 706) is an insufficient accountability mechanism. The current rules (21 CFR 1301 *et seq.*) and these proposed changes provide strong incentives for applicants to establish business relationships and incur significant expenses prior to being granted a registration. This not only favors applicants with deeper pockets or higher risk tolerance over those who hope to do research in a cost-effective and risk-averse manner, but it also makes adversarial proceedings to compel DEA

action on any one application an unappealing accountability mechanism.

For these reasons, the new proposed framework could substantively impact those applicants or the applications that were submitted before issuance of this proposed rule. It is reasonable to assume that applicants would position themselves or the details of their applications differently if they had known these factors prior to applying.

RECOMMENDATIONS:

- DEA action on all pending applications, by way of issuance of registration or issuance of an order to show cause, should occur in the order in which the applications were filed, beginning with the oldest application. DEA should be required to act upon each of the thirty-five applications noticed on August 27, 2019 (84 FR 44290) no later than 30 days following final promulgation of the new rules. DEA should not delay internal review of these applications awaiting final promulgation of the new rules, but rather should undertake such review and reach preliminary decisions as to each based upon the proposed new rules and be prepared to formally act on each application immediately upon final promulgation of the rules.

- If the applications cannot be acted upon within 30 days of the promulgation of the final rules, the final rules should include a specific timeline for DEA to act upon pending applications, or additional provisions for applicants to compel timely agency action.

- If the final content of the new rules changes through the public comment and remaining administrative process, DEA can conduct a post-promulgation expedited final review of each application to determine whether any preliminary decision should be altered.

2) NUMBER OF LICENSES, EXTENT OF RESTRICTIONS, AND TYPE OF PRODUCTS

CONCERNS: The anticipated number of licenses and additional controls may prevent satisfaction of §823(a)(1). DEA's stated belief that "a range of 3 to 15 growers is a reasonable estimate for purposes of this economic analysis" implies that it is comfortable with a range that may woefully underestimate the amount of research that would happen under authentically competitive conditions. Based on the OLC interpretation of the Single Convention requirements, the proposed rule imposes additional security requirements and grants DEA significant additional discretion in allowing or disallowing physical possession through secure on-site storage. It is also not clear whether or not DEA's definition of

"medicinal marijuana" is inclusive of whole plant products.

REASONS FOR CONCERNS:

The CSA requires DEA to limit the total number of registered bulk manufacturers of marijuana to the number necessary to produce an adequate and uninterrupted supply under adequately competitive conditions for legitimate medical, scientific, research, and industrial purposes. §823(a)(1). The hypothetical scenarios that DEA uses to predict potential economic impact on growers use an arbitrarily selected number of applicants (3-15). 85 FR 16292 at 16299. While the total number of potential applicants is not explicitly set by the proposed rule, this range suggests that DEA could set improper numerical limits on the number of registrations it will approve.

Excessive artificial limiting of the number of registrations may result in inefficient production, less innovation, higher prices to consumers, reduced competitiveness in the international market, and potential for corruption. Normally, US antitrust laws ensure that the private sector remains innovative, competitive, and efficient; though this new private market will be thoroughly controlled by DEA to comply with treaty obligations, it should not flout the fundamental economic principles of the country. We have confidence in DEA's ability to successfully monitor a sufficient, even if large, number of production facilities to eliminate diversion while enhancing the research landscape.

The myriad cannabinoids in cannabis and their complex interaction with the human body further complicate the statutorily required supply analysis under 21 U.S.C. §823(a)(1). Harvested cannabis to be utilized in research, in whatever form, is complex; widening the supply and demand analysis would allow the domestic market to engage in more complex, unique, and potentially groundbreaking research and development. Limits on registrations are a vestige of international opium control mechanisms; the Single Convention recognizes that "conditions under which the cannabis plant is cultivated for the production of drugs are very different from those under which the opium poppy is grown for opium," yet the authors nonetheless chose to require the same control regime for both plants. OLC Opinion at 22. However, the US Office of the Legal Adviser also notes the different properties of the two plants giving rise to "significantly different" diversion risks. *Id.*

The 2018 OLC Opinion does not rule out private drug development of medicinal cannabis drug products, but rather articulates requirements imposed by the Single Convention with which the DEA must comply in promulgating these new rules. MAPS construes the proposed changes provided as §1318.04(a) to imply that where registrants comply with security requirements in

part 1301, including for any proposed secure storage area for post-harvest bulk material to be delivered to the agency, no additional, new security requirements should apply. Further, it seems that so long as those requirements in 1301 can be complied with in storing harvested material, possession by way of delivery into this on-site secure area will be allowed. This nonetheless requires the agency's possession and control over the U.S. supply of bulk manufactured marijuana, permissively allowing for physical possession to occur at the grow location in an agency-designated, secured area. Only when a suitably secure on location storage area cannot be identified will off-site delivery to the agency need to occur. This section also states that registrants must comply with the security requirements in part 1301. Once stored, the proposed rule states that the agency will "control access."

Further, MAPS understands the definition of medicinal marijuana provided as §1318.02(b)[5] to turn on FDA determination of what constitutes a marketable drug product. Because FDA permits development of botanical drugs,[6] including those consisting of plant material, MAPS construes the proposed definition of medicinal marijuana in this proposed rule to include any botanical marijuana drug product approved by FDA in the future. Under this definition, agency exclusive economic rights provided for in §1318.04(b) would not extend to the importation, exportation, whole trade, and maintenance of stocks of an FDA-approved botanical cannabis drug product.

RECOMMENDATIONS:

- The agency's determination of "the number of establishments which can produce an adequate and uninterrupted supply" for applicable purposes is based on an analysis of a supply and competition; instead of looking only at perceived demand for a homogenous and interchangeable cannabis product based on quantity and price, as DEA does at present, DEA could add additional questions about strains or request other claims of differentiation. DEA could also simply request applicants to explain the market need and present supply of the market, without assuming homogeneity of the product. The number of registrations should thus be determined by the size and scope of the research and development interests in federally legal marijuana for applicable indications. This could be based on the existence of a contract with a researcher or partner organization.

- Security mechanisms already used for Schedule I substances, including safes, access logs, or other lock-and-key secured mechanisms, are reasonable. However, the least restrictive

[5] "Except as provided in paragraph (e) of this section, the term *medicinal cannabis* means a drug product made from the cannabis plant, or derivatives thereof, that can be marketed under the Federal Food, Drug, and Cosmetic Act."
[6] See Botanical Drug Development Guidance for Industry, FDA CDER, December 2016, available at https://www.fda.gov/media/93113/download

additional means are sufficient.

- Any definition of medical/medicinal marijuana that would not include approved "whole-plant" (botanical) marijuana would be inappropriate.

CONCLUSION

The continual and non-transparent evolution of informal agency policy and the inertia of actual change in outcomes creates doubt about the prospect of speedy, impactful implementation of these rules. Both this proposed rule and the 2016 policy change are interpretations of *how* DEA might exert its discretionary powers over the licensure of bulk marijuana manufacturers, but never has the agency provided details about *when* it may do so. Regrettably, this rule also imposes additional obligations and considerations on applicants who have already gone through an extended process relying on DEA's previous policies.

We note that GW Pharmaceuticals, with its marijuana product grown in England under a Home Office regulatory approach of constructive possession established in 1998, without a single objection in any annual report of the International Narcotic Control Board, and a current NASDAQ stock market cap of $47 Billion, is not recommending any changes to DEA's proposed rules to be imposed on domestic growers. Rather, GW Pharmaceuticals wonders about importing into the US a cannabis extract (e.g. a Botanical Drug Substance) that can used in the manufacture of a prescription medicine, and sold to US consumers.

MAPS has an immediate need for DEA licensing of Prof. Craker to produce marijuana for an FDA-regulated study of veterans with PTSD. Other applicants have immediate needs of their own. U.S. businesses and jobs will be created by federal licensing of additional domestic marijuana producers for research and development into potential medical, commercial and industrial applications. Given the time and resources put into preparing federally-compliant cultivation plans, the applications that were submitted according to the original policy change should immediately be issued licenses or denied with cause.

CERTIFICATE OF SERVICE

I hereby certify that on July 9, 2021, I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the First Circuit by using the appellate CM/ECF system.

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