



# **100,000 REASONS: MEDICAL MARIJUANA IN THE BIG APPLE**



NEW YORK CITY COMPTROLLER  
JOHN C. LIU

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# 100,000 Reasons: Medical Marijuana In The Big Apple

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## About the New York City Comptroller's Office

The New York City Comptroller, an independently elected official, is the Chief Financial Officer of the City of New York. The mission of the office is to ensure the financial health of New York City by advising the Mayor, the City Council, and the public of the City's financial condition. The Comptroller also makes recommendations on City programs and operations, fiscal policies, and financial transactions. In addition, the Comptroller manages the assets of the five New York City Pension Funds, performs budgetary analysis, keeps the City's accounts, audits City agencies, manages the City's debt issuance, and registers proposed contracts. His office employs a workforce of more than 700 professional staff members. These employees include accountants, attorneys, computer analysts, economists, engineers, budget, financial and investment analysts, claim specialists, and researchers, in addition to clerical and administrative support staff.

## About Regulate Marijuana NYC

Regulate Marijuana NYC advocates for regulating and taxing the sale of marijuana for personal use for adults in New York City. It recognizes that marijuana has great medical potential and should be available to patients as well as researchers for further study. It also calls for the creation of an interagency task force comprising the Police Department, Administration for Children's Services, Department of Education, Department of Health and Mental Hygiene, District Attorneys, and Department of Consumer Affairs to study issues related to regulation and work collaboratively with the New York State Senate and Assembly in order to pass appropriate legislation.

## Acknowledgments

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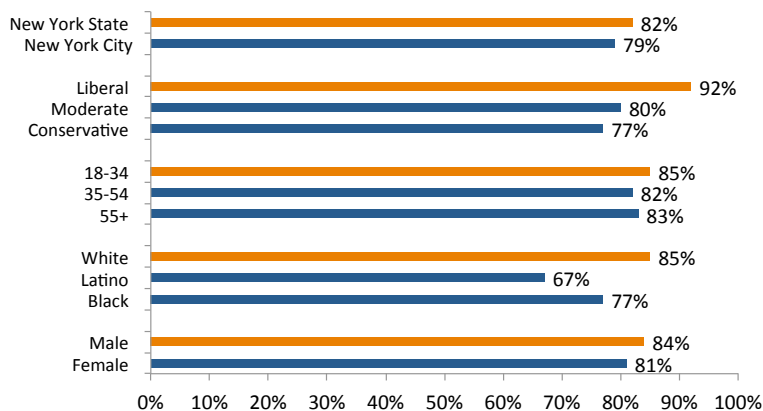
## MEDICAL MARIJUANA IN NEW YORK CITY: AN URGENT NEED

With the New York State Legislature poised to consider at least one bill that would legalize marijuana,<sup>1</sup> and with Comptroller John C. Liu's proposal to legalize, regulate, and tax marijuana in New York City<sup>2</sup> generating wide discussion, the Comptroller's office undertook a study of how New York City residents might benefit from the legalization of medical marijuana, an idea gaining currency in our State.

Public polling and the legislative history suggest that New York State may indeed legalize medical marijuana soon because New Yorkers overwhelmingly support the idea. According to a May 2013 poll conducted by the Siena College Research Institute and Drug Policy Alliance, 82 percent of State and 79 percent of City registered voters support medical marijuana. In 2012, the City Council overwhelmingly passed (44-3)<sup>3</sup> a resolution calling on Albany to pass medical marijuana legislation being considered then (A.7347/S.2774).<sup>4</sup>

On June 3, 2013, the New York State Assembly voted 99 to 41 in favor of establishing a medical marijuana program.<sup>5</sup> The bill died in the State Senate, but given the Assembly's strong support it seems likely to see reintroduction. The legislation would have allowed healthcare professionals to recommend medical marijuana for New Yorkers suffering from serious conditions such as cancer, HIV/AIDS, multiple sclerosis, Parkinson's disease, and more. Physicians could grant written certification to qualifying patients, and the Department of Health would be charged with monitoring marijuana use and promulgating rules and regulations for registry identification cards for patients and designated caregivers. Marijuana possession for patients would be restricted to two and a half ounces. New Yorkers under the age of 18 with a qualifying condition could receive medical marijuana, so long as the application for a registry ID card is completed by a person age 21 or older, and the minor has an appropriate adult designated caregiver.

### NEW YORK STATE & CITY RESIDENTS OF ALL TYPES OVERWHELMINGLY SUPPORT LEGALIZING MEDICAL MARIJUANA.



Source: Siena College Research Institute and Drug Policy Alliance, May 2013

1 Liz Krueger New York State Senator, "Top News," Posted May 29, 2013, <http://www.nysenate.gov/senator/liz-krueger>, accessed on August 22, 2013.

2 New York City Comptroller's Office, "Regulating and Taxing Marijuana: The Fiscal Impact on NYC," August 14, 2013, [http://comptroller.nyc.gov/wp-content/uploads/documents/NYC\\_RegulateMarijReport.pdf](http://comptroller.nyc.gov/wp-content/uploads/documents/NYC_RegulateMarijReport.pdf).

3 The Fix, "NYC Inches Towards Medical Marijuana," March 2, 2012, <http://www.thefix.com/content/medical-marijuana-new-york9765>, accessed on August 20, 2013.

4 "Resolution 0094-2010," <http://legistar.council.nyc.gov/LegislationDetail.aspx?ID=655200&GUID=194B0043-7086-437C-A8A6-100727BB7E10&Options=&Search=>, accessed on August 20, 2013.

5 New York State Assembly, "Bill No. A06357," [http://assembly.state.ny.us/leg/?default\\_fld=&bn=A06357&term=2013&Summary=Y&Votes=Y](http://assembly.state.ny.us/leg/?default_fld=&bn=A06357&term=2013&Summary=Y&Votes=Y), accessed on August 20, 2013.





Beverly McClain, a New York stage 4 cancer patient, describes how medical marijuana helps alleviate her pain and suffering from chemotherapy treatments.

Source: Compassionate Care NY

The bill attempted to shield practitioners and patients from federal prosecution, stating: "State or local law enforcement agencies shall not cooperate with or provide assistance to the government of the United States or any agency thereof in enforcing the Controlled Substances Act...solely for actions and conduct consistent with this title, except as pursuant to a valid court order."<sup>6</sup> It also protected medical marijuana patients and designated caregivers from discrimination by schools, employers, or landlords, stipulating that they may not refuse to enroll, employ, or lease to them, unless there is a conflict with federal law or one of the above actions could result in a lost federal contract or lost funds.

Notably, the bill did not require insurers or health plans to cover medical marijuana.

Prominent members of the medical community strongly supported the bill. New York Physicians for

Compassionate Care, a group of more than 750 physicians in New York State, advocated for the Albany legislation. The bill was also endorsed by New York health organizations such as the Hospice and Palliative Care Association of New York State, New York State AIDS Advisory Council, New York State Nurses Association, New York State Psychological Association, the Public Health Association of New York City, and others.<sup>7</sup>

Despite majority support in the State Assembly, significant challenges remain in Albany. Thus far, Governor Cuomo has not backed legislation to establish a medical marijuana program, although in April 2013, he said of medical marijuana that "the situation is an evolving one," indicating that he might be flexible if the Senate could also pass a bill.<sup>8</sup>

## MORE THAN 100,000 NEW YORKERS COULD BENEFIT

If New Yorkers widely support medical marijuana, it is because they know many people who could benefit from it. The Comptroller's office decided to quantify that figure. We estimate that more than 100,000 New York City residents suffering from serious conditions such as cancer and chronic pain could benefit if an effective and implementable medical marijuana program were established today,<sup>9</sup> deriving our estimate from most recently reported or estimated registered medical marijuana patients in states where the drug is legal. Moreover, we believe this is a conservative estimate because registration for medical marijuana programs in the various states falls short of the potential. Patients experience social stigma and related social sanctions for using medical marijuana, and many doctors are not familiar with its benefits. Moreover, the federal government has created unnecessary obstacles for academic and research institutions to study marijuana, thereby impeding research that could lead to a broader use of medical marijuana.<sup>10</sup>

<sup>6</sup> Ibid.

<sup>7</sup> Compassionate Care NY, "Healthcare Practitioners across New York Support a Carefully Regulated Medical Marijuana Program," <http://www.compassionatecareny.org/wp-content/uploads/MMJ-MD-Map.pdf>, accessed on August 20, 2013.

<sup>8</sup> Paybarah, Azi, "As Cuomo evolves on medical marijuana, Savino urges him to hurry up," April 23, 2013, <http://www.capitalnewyork.com/article/politics/2013/04/8529346/cuomo-evolves-medical-marijuana-savino-urges-him-hurry>, accessed on August 20, 2013.

<sup>9</sup> See the Appendix for a detailed methodology.

<sup>10</sup> Marijuana Policy Project, "Federal Obstruction of Medical Marijuana Research," <http://www.mpp.org/assets/pdfs/library/Federal-Obstruction-of-MMJ-Research-1.pdf>, accessed on August 20, 2013.





## MEDICAL MARIJUANA'S HISTORY IN NEW YORK

Medicinal uses for marijuana were officially recognized in the 1850 edition of the *United States Pharmacopeia*.<sup>11</sup> However, in the beginning of the 20th century, a cohesive movement organized to outlaw the use of marijuana, along with alcohol, morphine, and opium. This culminated in the enactment of the Marihuana Tax Act in 1937, which the American Medical Association opposed because it instituted marijuana registration processes, compliance requirements, and taxes that significantly deterred physicians from prescribing it.<sup>12</sup> In 1944, New York City Mayor Fiorello LaGuardia commissioned The New York Academy of Medicine to study marijuana. Its findings debunked many claims that inspired the Marihuana Tax Act: marijuana did not lead to significant addiction in the medical sense of the word, nor did it lead to morphine, heroin, or cocaine addiction.<sup>13</sup>

In 1970, the federal Controlled Substances Act classified marijuana as a Schedule I drug, banning it from medicinal use. However, by 1982, more than 30 states passed laws recognizing the medical value of marijuana. In 1980, New York State passed the Controlled Substances Therapeutic Act. Though largely unknown, it remains in the state's public health laws today in Article 33-A. It states, "...recent research has shown that the use of marijuana may alleviate the nausea and ill-effects of cancer chemotherapy, may alleviate the ill-effects of glaucoma and may have other therapeutic uses...there is a need for further research and experimentation with regard to the use of marijuana for therapeutic purposes under strictly controlled circumstances."<sup>14</sup>

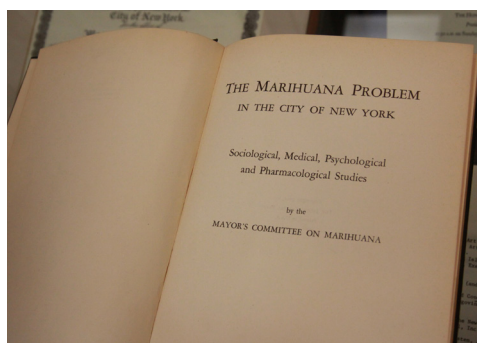
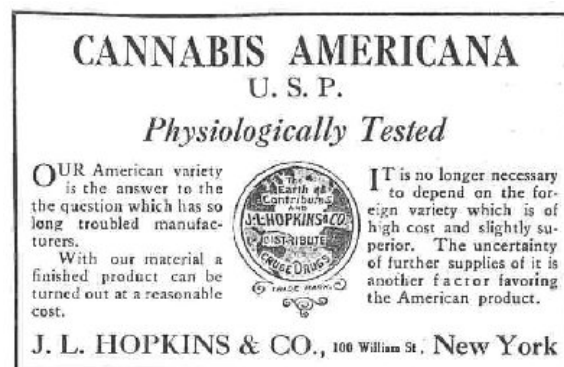


Photo of Mayor Fiorello LaGuardia's 1944 report on marijuana.

Source: New York City Municipal Archives



An advertisement for Cannabis Americana in New York, 1917

Source: <http://maryjanecannabian.blogspot.com>

The law created a Patient Qualification Review Board to approve patients for research. Several hospitals participated in research to determine the effectiveness of inhaling marijuana, which was supplied by the only federal farm, in preventing the nausea and vomiting caused by chemotherapy in patients that did not respond to other treatments.<sup>15</sup> By 1985, 208 patients had received marijuana therapy, 199 of whom were evaluated. North Shore Hospital reported that marijuana effectively reduced vomiting 92.9 percent of the time, compared to 89.7 percent at Columbia Memorial Hospital, and 100 percent at Upstate Medical Center, St. Joseph's Hospital, and Jamestown General Hospital.<sup>16</sup> Nevertheless, the Department of Health abandoned the program by the late 1980's.<sup>17</sup>

11 HOPES Huntington's Outreach Project for Education at Stanford, "Medical Marijuana Policies in the United States," May 15, 2012, <http://www.stanford.edu/group/hopes/cgi-bin/wordpress/2012/05/medical-marijuana-policy-in-the-united-states/>, accessed on August 20, 2013.

12 American Medical Association Bureau of Legal Medicine and Legislation, "American Medical Association Opposes the Marijuana Tax Act of 1937," July 10, 1937, [http://www.marijuanalibrary.org/AMA\\_opposes\\_1937.html](http://www.marijuanalibrary.org/AMA_opposes_1937.html), accessed on August 20, 2013.

13 New York Academy of Medicine, the Mayor's Committee on Marijuana, *The LaGuardia Committee Report*, New York, USA, 1944, <http://hemphshare.org/wp-content/uploads/2012/12/laguardia.pdf>, accessed on August 20, 2013.

14 Public Health Laws of New York, Article 33-A, available at [http://public.leginfo.state.ny.us/LAWSSEAF.cgi?QUERYTYPE=LAWS+&QUERYDATA=\\$\\$PBH3397-A\\$\\$@TXPBH03397-A+&LIST=LAW+&BROWSER=BROWSER+&TOKEN=12248217+&TARGET=VI](http://public.leginfo.state.ny.us/LAWSSEAF.cgi?QUERYTYPE=LAWS+&QUERYDATA=$$PBH3397-A$$@TXPBH03397-A+&LIST=LAW+&BROWSER=BROWSER+&TOKEN=12248217+&TARGET=VI) EW, accessed on August 20, 2013.

15 Zeese, Kevin, "Research Findings on Medicinal Properties of Marijuana," January 1997, <http://ndsn.org/jan97/zeesemm.html#fnB11>, accessed on August 20, 2013.

16 Ibid.

17 Karlin, Rick, "Bureaucracy Stalls Medical Marijuana," *Times Union*, June 18, 2012, <http://www.timesunion.com/local/article/Bureaucracy-stalls-medical-marijuana-3639647.php#page=1>, accessed on August 20, 2013.



## STATES WITH FULLY LEGAL MARIJUANA OR MEDICINAL USE LAWS

Legend: Legal (Orange), Medicinal Use Only (Blue), Illegal (Dark Grey)

Medical marijuana laws vary by state. In general, such laws identify qualifying conditions, outline protocols for patient registration, and stipulate how much marijuana can be dispensed in a given period. In many states, qualifying conditions include chronic pain, multiple sclerosis, severe nausea, cancer, HIV/AIDS, glaucoma, epilepsy, and wasting syndrome. Post-traumatic stress disorder is becoming recognized as a qualifying condition: five states explicitly include it as of this writing and two more states allow for it as well. Maine incorporated it into its qualifying conditions this summer.<sup>18</sup> Most states require patients to apply for a registration ID card once they have been approved by a healthcare professional for marijuana use. The exceptions are Washington State, which does not issue ID cards,<sup>19</sup> and California, where ID cards are voluntary, but protect patients from arrest by state police for marijuana possession.<sup>20</sup>



Meaningful barriers still exist for qualifying patients in states where medical marijuana is legal. For instance, marijuana dispensaries have struggled to set up shop in New Jersey. Even though six non-profits were selected to dispense marijuana more than two years ago, only one dispensary has managed to pass the background checks, obtain financing, and meet state zoning and other requirements.<sup>21</sup>

Source: Marijuana Policy Project

18 Brogan, Beth, "PTSD added to list of qualifying conditions for medical marijuana treatment," BDN, June 30, 2013, <http://bangordailynews.com/2013/06/30/news/state/ptsd-added-to-list-of-qualifying-conditions-for-medical-marijuana-treatment/>, accessed on August 20, 2013.

19 Washington Department of Health, "Medical Marijuana (Cannabis) Frequently Asked Questions about Medical Marijuana (Cannabis) in Washington State," <http://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/MedicalMarijuanaCannabis/GeneralFrequentlyAskedQuestions.aspx#4>, accessed on August 20, 2013.

20 Marijuana Policy Project, "CA Medical Marijuana ID Card Program – FAQ," 2013, <http://www.mpp.org/states/california/frequently-asked-questions.html>, accessed on August 20, 2013.

21 Livio, Susan, "New Jersey's lone medical marijuana dispensary will reopen Thursday after seven-week hiatus," August 14, 2013, [http://www.nj.com/politics/index.ssf/2013/08/njs\\_lone\\_medical\\_marijuana\\_dispensary\\_will\\_reopen\\_thursday\\_after\\_seven-week\\_hiatus.html](http://www.nj.com/politics/index.ssf/2013/08/njs_lone_medical_marijuana_dispensary_will_reopen_thursday_after_seven-week_hiatus.html), accessed on August 20, 2013.



This lone dispensary just re-opened after being closed for several weeks this summer because its supply was depleted. Delaware legalized medical marijuana in 2011, but the state's dispensary program was suspended later that year when Governor Markell received a letter from the U.S. Attorney for Delaware, stating that the federal government could take action against those who comply with state medical marijuana laws, given the yet unresolved conflict with federal legislation.<sup>22</sup> The Governor announced on August 15, 2013 that his administration would move forward with the program, but would only allow one dispensary instead of three, as originally proposed.

## CONFLICT WITH FEDERAL LAW

The federal Controlled Substances Act (CSA) of 1970 prohibits the cultivation, distribution, and possession of marijuana for anything other than federally approved research. Congress created the initial list of substances and classified them into five "schedules," but only the Drug Enforcement Administration (DEA) and the Food and Drug Administration (FDA) may add or remove substances from a given schedule. The CSA classified marijuana as Schedule I, meaning it has "no currently accepted medical use in the United States, a lack of accepted safety for use under medical supervision, and a high potential for abuse."<sup>23</sup>

Marijuana's status as a Schedule I controlled substance has two major medicinal implications. First, patients and dispensaries in states where medical marijuana is legal are still violating federal law by using, growing, and selling the drug. This deters state policymakers from legalizing it, prevents physicians from recommending it, and puts well-qualified growers and sellers at risk or deters them from entering the market.

Second, medical research is severely constrained.

All scientific research of Schedule I drugs requires approval by the Food and Drug Administration (FDA) and the Drug Enforcement Administration (DEA), but marijuana is the only Schedule I drug that also requires approval by the National Institute on Drug Abuse (NIDA) and the U.S. Department of Health and Human Services (DHHS), which control supply. NIDA's monopoly on the only supply that can be legally used for federally approved research has delayed studies that were approved by the FDA, DEA, and DHHS.<sup>24</sup>

EXISTING FEDERAL SCHEDULES	
<b>Schedule I (e.g. heroin, marijuana)</b>	
	High potential for abuse
	No currently accepted medical use in treatment in the United States
	Lack of accepted safety for medical use
<b>Schedule II (e.g. cocaine, methamphetamine)</b>	
	High potential for abuse
	Currently accepted medical use in treatment in the United States
	Potential for severe dependence
<b>Schedule III (e.g. hydrocodone)</b>	
	Lower potential for abuse than I or II
	Currently accepted medical use in treatment in the United States
	Potential for moderate or low dependence
<b>Schedule IV (e.g. benzodiazepines)</b>	
	Low potential for abuse relative to III
	Currently accepted medical use in treatment in the United States
	Potential for limited dependence relative to III
<b>Schedule V (e.g. cough medicines with codeine)</b>	
	Low potential for abuse relative to IV
	Currently accepted medical use in treatment in the United States
	Potential for limited dependence relative to IV

Source: Drug Policy Alliance

22 Marijuana Policy Project, "Delaware: Gov Markell to restart compassion center regulatory process," August 15, 2013, <http://www.mpp.org/states/delaware/>, accessed on August 20, 2013.

23 United States Department of Justice Drug Enforcement Administration, Office of Diversion Control, "Controlled Substance Schedules," <http://www.deadiversion.usdoj.gov/schedules/>, accessed on August 20, 2013.

24 Marijuana Policy Project, "Federal Obstruction of Medical Marijuana Research," <http://www.mpp.org/assets/pdfs/library/Federal-Obstruction-of-MMJ-Research-1.pdf>, accessed on August 20, 2013.



For physicians and medical researchers, rescheduling of marijuana is paramount. In a 2008 position paper, the American College of Physicians urged an evidence-based review of marijuana's status as a Schedule I drug, stating: "Given marijuana's proven efficacy at treating certain symptoms and its relatively low toxicity, reclassification would reduce barriers to research and increase availability of cannabinoid drugs to patients who have failed to respond to other treatments."<sup>25</sup> In 2009, the American Medical Association reversed its long-held position that marijuana be retained in Schedule I, urged a review of marijuana's status as a Schedule I drug, and noted in a report that rescheduling can be supported to help facilitate medical research and development.<sup>26</sup> However, in 2011, the DEA rejected a petition to reschedule marijuana thereby reaffirming the federal position that cannabis has no medical use.<sup>27</sup>

Despite marijuana's Schedule I status, none of the current states' medical marijuana programs have been directly challenged in court by the federal government.<sup>28</sup> The 2005 Supreme Court ruling in *Gonzalez v. Raich* did not prohibit states from establishing medical marijuana programs.<sup>29</sup> Moreover, while the federal government can technically enforce federal marijuana laws in states that have such programs, 99 percent of marijuana arrests are made by local and state police.<sup>30</sup> President Obama even stated in 2012: "We are not going to prioritize prosecutions of persons who are using medical marijuana."<sup>31</sup> Creating state marijuana programs thus increases protections for seriously ill patients who use medical marijuana.

On February 14, 2013, the States' Medical Marijuana Patient Protection Act (H.R. 689), was introduced to the U.S. House of Representatives. Sponsored by Representative Earl Blumenauer of Oregon, the bill would reschedule marijuana as a substance other than Schedule I or II in order to remove research barriers and protect patients, health care professionals, and the medical marijuana industry in states where the drug is legal.<sup>32</sup> According to Govtrack.us, the bill has a six percent chance of getting past committee and a one percent chance of being enacted.

25 American College of Physicians, "Supporting Research into the Therapeutic Role of Marijuana," 2008, [http://www.acponline.org/acp\\_policy/policies/supporting\\_medmarijuana\\_2008.pdf](http://www.acponline.org/acp_policy/policies/supporting_medmarijuana_2008.pdf), accessed on August 20, 2013.

26 American Medical Association, Council on Science and Public Health, Report "Use of Cannabis for Medicinal Purposes," 2009, <http://www.ama-assn.org/resources/doc/csaph/i09csaph3ft.pdf>, accessed on August 22, 2013.

27 United States Department of Justice Drug Enforcement Administration, 21 CFR Chapter II Denial of Petition to Initiate Proceedings to Reschedule Marijuana; Proposed Rule, Federal Register Vol. 76, No. 131, July 8, 2011, [http://americansforsafeaccess.org/downloads/CRC\\_Petition\\_DEA\\_Answer.pdf](http://americansforsafeaccess.org/downloads/CRC_Petition_DEA_Answer.pdf), accessed on August 20, 2013.

28 Compassionate Care NY, "State Laws, Federal Laws and New York," <http://www.compassionatecareny.org/wp-content/uploads/MMJ-Fed-Issues-8.1.13.pdf>, accessed on August 22, 2013.

29 Marijuana Policy Project, "Implications of U.S. Supreme Court Medical Marijuana Ruling," <http://www.mpp.org/reports/gonzales-v-raich-the-impact.html>, accessed on August 22, 2013.

30 Ibid.

31 Tau, Byron, "Obama clarifies his stance on medical marijuana," Politico, April 25, 2012, <http://www.politico.com/politico44/2012/04/obama-clarifies-his-stance-on-medical-marijuana-121598.html>, accessed on August 22, 2013.

32 Govtrack.us, "H.R. 689: States' Medical Marijuana Patient Protection Act," <http://www.govtrack.us/congress/bills/113/hr689>, accessed on August 20, 2013.





## SCIENTIFIC EVIDENCE SUPPORTING MEDICAL MARIJUANA

Despite research challenges, many medical studies have demonstrated marijuana's medicinal benefits. Randomized, placebo-controlled trials have shown that smoked marijuana can reduce pain and spasticity for patients suffering from multiple sclerosis<sup>33</sup> and reduce pain for HIV-associated peripheral neuropathy.<sup>34</sup> A randomized, double-blind, placebo-controlled study of a standardized whole plant cannabis extract mouth spray concluded that the drug successfully treated pain in patients with advanced cancer who had not responded to opioid therapy.<sup>35</sup> Several double-blind studies from the 1980s show that cannabinoid medications can effectively address nausea and vomiting in cancer patients undergoing chemotherapy.<sup>36 37</sup>

One interesting recent development is the new position of Dr. Sanjay Gupta of CNN. This August, Dr. Gupta posted an apology for previously dismissing marijuana's medical potential, which he followed with a documentary. This high-profile endorsement shows that the mainstream medical community is embracing marijuana's medical value.

## POLICY RECOMMENDATIONS

The Comptroller's Office recognizes that increasing patient access to medical marijuana and expanding medical research will require efforts at the federal, state, and local levels. Following are policy recommendations designed to expedite access, ensure availability, and broaden research of medical marijuana.

### CITY LEGISLATION AND POLICIES

- **The City should establish its own Medical Cannabis Research Fund.** This public-private partnership would involve the City providing \$5 million in start-up funds and then matching up to \$50 million of private donations on a dollar-for-dollar basis. The goal is to finance up to \$100 million of medical marijuana research over the next five years by partnering with private-sector companies, academic institutions, and hospitals.

According to the New York City Economic Development Corporation (NYCEDC), "New York City is well positioned for success in the bioscience industry, providing world-renowned research, talent, and resources no other city can offer."<sup>38</sup> The NYCEDC's website offers many statistics touting the City's track record in this area. The New York metropolitan area has the largest bioscience workforce in the country; the City receives more than \$1 billion annually in National

33 Corey-Bloom, J., Wolfson, T., Gamst, A., Jin S., Marcotte T.D., Bentley H., Gouaux B., "Smoked Cannabis for spasticity in multiple sclerosis: a randomized, placebo-controlled trial," CMAJ. 2012 July 10; 184(10): 1143-1150. Available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3394820/>, accessed on August 20, 2013.

34 Abrams, D.I., Jay, C.A., Shade, S.B., Vizoso, H., Reda, H., Press, S., Kelly, M.E., Rowbotham, M.C., and Peterson, K.L., "Cannabis in Painful HIV-Associated Neuropathy: a randomized placebo-controlled trial," American Academy of Neurology at University of California at San Diego, February 12, 2007. Available at [http://www.cmcrc.ucsd.edu/images/pdfs/Abrams\\_2007.pdf](http://www.cmcrc.ucsd.edu/images/pdfs/Abrams_2007.pdf), accessed on August 20, 2013.

35 Portenoy, R.K., Ganae-Motan, E.D., Allende S., Yanagihara, R., Shaiova, L., Weinstein, S., McQuade, R., Wright, S., Fallon, MT., "Nabiximols for opioid-treated cancer patients with poorly controlled chronic pain: a randomized, placebo-controlled, graded-dose trial," May 2012, 13(5): 438-49. <http://www.ncbi.nlm.nih.gov/pubmed/22483680>, accessed on August 21, 2013.

36 Chan, H.S., Correia, J.A., MacLeod, S.M., "Nabilone versus prochlorperazine for control of cancer chemotherapy-induced emesis in children: a double-blind crossover trial," Pediatrics, 1987 June;79(6): 946-52. <http://www.ncbi.nlm.nih.gov/pubmed/3035479?dopt=Abstract>, accessed on August 21, 2013.

37 Ahmedzai, S., Carlyle, DL., Calder, IT., Moran, F., "Anti-emetic effect and toxicity of nabilone, a synthetic cannabinoid, in lung cancer chemotherapy," Br J Cancer, 1983 November; 48(5): 657-663. <http://www.ncbi.nlm.nih.gov/pubmed/6315040?dopt=Abstract>, accessed on August 21, 2013.

38 New York City Economic Development Corporation, "Why NYC?" 2013, <http://www.nycedc.com/industry/bioscience>, accessed on August 21, 2013.





A rendering of the Cornell -Technion Campus.  
Source: New York City Economic Development Corporation

Institutes of Health (NIH) awards; and NYC is home to the world's largest concentration of academic institutions, with nine major academic medical centers including Columbia University, Weill Cornell Medical College, New York University, Albert Einstein College of Medicine, and The Rockefeller University.

In addition, major publicly traded pharmaceutical companies – including Bristol Myers Squibb, ImClone Systems, Pfizer, and Forest Laboratories – are either headquartered or have significant operations in the City.

Establishing a New York City Medical Cannabis Research Fund would help expand the City's footprint in the bio-sciences and position the Big Apple as a global research leader in medical marijuana.

An advisory board would help manage the fund and direct its operations. The board would comprise medical and legal experts as well as representatives from academia, finance, and government.

One academic institution that is uniquely positioned to conduct medical marijuana research is the new Cornell NYC Tech school planned for construction on Roosevelt Island. This innovative partnership involves a collaboration between Cornell University and the Technion – Israel Institute of Technology.<sup>39</sup> Interestingly, both of these world-class universities already have expertise that could be leveraged for medical marijuana research.

Cornell University has graduate programs in several relevant areas, including Pharmacology, Plant Biology, and Neurobiology,<sup>40</sup> while the Technion offers degrees in Agricultural Engineering, Biotechnology, and Food Engineering.<sup>41</sup>

Indeed, the State of Israel has "been at the vanguard of research into the medicinal properties of cannabis for decades"<sup>42</sup> and the number of patient permits for medical cannabis issued by Israeli authorities has increased from 400 in 2009 to more than 11,000 today.<sup>43</sup>

The successful passing of New York State's Medical Marijuana bill is not a pre-requisite to establishing this fund and conducting research, because there are many legal ways to obtain marijuana for research purposes. There are at least four different ways the City could help researchers connected to this fund obtain marijuana.



Cannabis plants in the Tikkun Olam Facility, Sefad, Israel  
Source: Tikkun Olam

39 "Cornell NYC Tech," Wikipedia, [http://en.wikipedia.org/wiki/Cornell\\_NYC\\_Tech](http://en.wikipedia.org/wiki/Cornell_NYC_Tech), accessed on August 21, 2013.

40 Cornell University Graduate School, "List of Fields," <http://gradschool.cornell.edu/academics/fields-study/index>, accessed on August 21, 2013.

41 The Irwin and Joan Jacobs Graduate School Technion – Israel Institute of Technology, <http://www.graduate.technion.ac.il/eng/>, accessed on August 21, 2013.

42 Kershner, Isabel, "Studying Marijuana and its Loftier Purpose," January 1, 2013, <http://www.nytimes.com/2013/01/02/world/middleeast/new-insights-on-marijuana-in-israel-where-its-illegal.html?pagewanted=all&r=0>, accessed on August 21, 2013.

43 Tel Aviv University, "It's True: Medical Cannabis Provides Dramatic Relief for Sufferers of Chronic Ailments," January 24, 2013, <http://www.aftau.org/site/News2?id=17871>, accessed on August 21, 2013.



The most traditional route would be to apply to the National Institute on Drug Abuse for access to the marijuana it legally produces. Another option would be to apply to the DEA for a "Schedule I" license to become a federally authorized producer of marijuana for research purposes; doing so would effectively end the University of Mississippi's longstanding monopoly in this area.

Another possibility would be to use a provision in New York State's Controlled Substances Therapeutic Act that allows the use of marijuana seized by state or local law enforcement officials.<sup>44</sup> Needless to say, researchers would only be able to make use of this marijuana after appropriate safety and quality-screening measures were taken.

Finally, New York City-based researchers could conduct collaborative research with an international partner, such as facilities in Israel, which have legal access to high-quality marijuana as well as a patient population.

- **The City should finance and operate medical marijuana greenhouses.** The City does not have to wait for the State to establish a medical marijuana program. It could take it upon itself to build the infrastructure that the Medical Cannabis Research Fund would require to ensure an adequate supply of high-quality research marijuana. The City could apply today for a DEA Schedule I license to grow marijuana. The City should therefore provide the New York City Health and Hospitals Corporation (HHC) with the necessary capital funds to construct one or more medical marijuana greenhouses on its grounds or inside its facilities. Given HHC's existing research affiliations<sup>45</sup> and its own 420,000 member "MetroPlus" health plan,<sup>46</sup> it is uniquely positioned to play a leadership role in medical marijuana research.



Harlem Hospital

Source: <http://drlindagalloway.wordpress.com>

## STATE LEGISLATION

- **The City should work with New York State's legislature to establish a medical marijuana program that is covered by insurance.** The medical marijuana program that passed in the Assembly but died in the Senate should be reintroduced as soon as possible. However, it should be amended to require that insurers cover medical marijuana. Reports indicate that while some patients spend hundreds of dollars a month on medical marijuana, "health insurance rarely if ever covers its use."<sup>47</sup> New York State's bill should therefore include a provision that would require health insurance providers to cover the costs associated with medical marijuana. Otherwise, it would only be available to those patients who could afford to purchase it out-of-pocket. Additional provisions should also be made to ensure that medical marijuana is accessible to low-income and older New Yorkers who rely on Medicaid and/or Medicare for the health insurance.

<sup>44</sup> Public Health Laws of New York, Article 33-A, available at [http://public.leginfo.state.ny.us/LAWSSEAF.cgi?QUERYTYPE=LAWS+&QUERYDATA=\\$PBH3397-F\\$\\$@TXPBH03397-F+&LIST=LAW+&BROWSER=BROWSER+&TOKEN=12248217+&TARGET=VIEW](http://public.leginfo.state.ny.us/LAWSSEAF.cgi?QUERYTYPE=LAWS+&QUERYDATA=$PBH3397-F$$@TXPBH03397-F+&LIST=LAW+&BROWSER=BROWSER+&TOKEN=12248217+&TARGET=VIEW), August 21, 2013.

<sup>45</sup> New York City Health and Hospitals Corporation, "Specialty Services," <http://www.nyc.gov/html/hhc/html/services/research.shtml>, accessed on August 21, 2013.

<sup>46</sup> New York City Health and Hospitals Corporation, "About HHC," 2013, <http://www.nyc.gov/html/hhc/html/about/about.shtml>, accessed on August 21, 2013.

<sup>47</sup> Andrews, Michelle, "Advocates of Medical Marijuana Face Another Hurdle: Insurance Coverage," Kaiser Health News, November 10, 2012, <http://www.kaiserhealthnews.org/features/insuring-your-health/2012/112012-michelle-andrews-on-medical-marijuana.aspx>, accessed on August 21, 2013.



There is precedent for New York State's Medicaid program reimbursing for services that the federal government will not cover. For instance, the State pays 100% of the cost of abortions for women on Medicaid because Congress allows federal funds to be used only in cases in which the woman's life is at risk. Similarly, the State should cover costs for low-income and older New Yorkers when a medical marijuana program is established.

## FEDERAL LEGISLATION

- **The City should work with members of the Congressional Delegation to appeal to the relevant federal agencies, such as the Food and Drug Administration, the Department of Health and Human Services, the Drug Enforcement Administration, and the Department of Justice, to remove marijuana from the federal Controlled Substances Act of 1970.** Marijuana's current status as a Schedule I drug obstructs medical research and patient access. Advocates have unsuccessfully petitioned the DEA to reclassify marijuana to Schedule II or III, but even this would not have removed all of the restrictions on medical research and use.<sup>48</sup> The DEA and NIDA could still withhold approval and supply of marijuana. Meanwhile, the processors, cultivators, and sellers of medical marijuana would still be subject to federal penalties. Also noteworthy is the fact that people could still be arrested for using marijuana recreationally. As the Comptroller's office noted in a recent report, NYC is on track to have 37,000 arrests for low-level possession of marijuana in 2013. The best approach is to simply remove marijuana from the list of controlled substances.

## CONCLUSION

Although marijuana's medical potential has been recognized for decades, it is still denied to seriously ill patients and researchers. In the 1980s, New York State acknowledged marijuana's medicinal value and supported research for chemotherapy patients. Even though the findings were impressive, the State stopped there. Thirty years later, New York still denies seriously ill patients access to this evidence-based treatment, even as 20 states and Washington D.C. have legalized it. At this writing, more than a million American patients benefit from medical marijuana. Today, at least 100,000 New York City residents with the same afflictions could benefit from the same relief. By following the recommendations outlined in this report, we can hit the ground running where we left off just 30 years ago and make a meaningful impact for New Yorkers suffering today and for years to come.

<sup>48</sup> Drug Policy Alliance, "Removing Marijuana from the Controlled Substances Act," May 2013, [http://www.scribd.com/fullscreen/143471220?access\\_key=key-69riupqmdn7ta3ljm2c&allow\\_share=true](http://www.scribd.com/fullscreen/143471220?access_key=key-69riupqmdn7ta3ljm2c&allow_share=true), accessed on August 26, 2013.





## APPENDIX: METHODOLOGY

There are approximately 1,030,887 registered medical marijuana patients (MMP) in the U.S. We arrived at this number using a combination of state-reported MMP registry data and estimates when those were unavailable. The Comptroller's office located 2012 or 2013 registry data that was reported by state agencies in eight states: Arizona, Colorado, Hawaii, Michigan, Montana, Nevada, Oregon, and Rhode Island. California and Washington do not have registries, and so these numbers were estimated by ProCon.org, a non-partisan nonprofit research group that attempts to present balanced information on controversial issues. For the remaining states, we were unable to find state-reported data and relied upon ProCon.org for numbers of medical marijuana patients, which were current as of December 2012.<sup>49</sup>

STATES THAT LEGALIZED MEDICAL MARIJUANA			
State	Year	Population	Registered Patients
California	1996	38,041,430	553,684
Alaska	1998	731,449	1,246
Oregon	1998	3,899,353	55,937
Washington	1998	6,897,012	99,943
Maine	1999	1,329,192	16,444
Colorado	2000	5,187,582	106,817
Hawaii	2000	1,392,313	11,183
Nevada	2000	2,758,931	4,173
Montana	2004	1,005,141	7,099
Vermont	2004	626,011	559
Rhode Island	2006	1,050,292	4,849
New Mexico	2007	2,085,538	8,188
Michigan	2008	9,883,360	124,131
Arizona	2010	6,553,255	36,634
<b>Subtotal</b>		<b>81,440,859</b>	<b>1,030,887</b>
DC	2010	632,323	N/A
New Jersey	2010	8,864,590	N/A
Delaware	2011	917,092	N/A
Connecticut	2012	3,590,347	N/A
Massachusetts	2012	6,646,144	N/A
Illinois	2013	12,875,255	N/A
New Hampshire	2013	1,320,718	N/A
<b>20 States + D.C. TOTALS</b>		<b>116,287,328</b>	<b>1,030,887</b>

Source: Census Bureau; ProCon.org; Arizona Medical Marijuana Act, Monthly Report, 2013; Colorado Department of Health; Hawaii Department of Public Safety, Annual 2012 Report; Michigan Department of Health; Montana Marijuana Program May 2013 Registry Information; Nevada Health Division, Medical Marijuana Program; Oregon Health Authority; and Rhode Island Department of Health.

49 ProCon.org, "Medical Marijuana, How Many People in the United States Use Medical Marijuana," last updated December 2012, <http://medicalmarijuana.procon.org/view.answers.php?questionID=001199>, accessed on August 20, 2013.



Although medical marijuana legislation has passed in 20 states and the District of Columbia, our analysis includes only 14 states. We excluded D.C., New Hampshire, Illinois, Connecticut, Massachusetts, Delaware, and New Jersey, largely because they are new programs that have few or no patients. Delaware and New Jersey, which ProCon.org reports have 21 and 239 MMP respectively, are excluded because, as previously noted, their programs have experienced significant hurdles, greatly limiting the number of people who can access medical marijuana. New Hampshire and Illinois just passed medical marijuana in 2013. Connecticut and Massachusetts passed their laws in 2012. D.C. legalized medical marijuana in 2010, but its first medical marijuana patient just received the drug in July 2013.<sup>50</sup>

According to the Census Bureau 2012 population estimates, there are 81,440,859 people living in the 14 states we examined. To estimate the MMP population in NYC if medical marijuana were to be legalized, we created a ratio of MMPs to the general population in those 14 states:  $1,030,887/81,440,859 = 1.27$  percent. Applying this rate to the City's estimated 8,336,697 residents yields 105,527 New Yorkers that would likely register for medical marijuana today.

ESTIMATING NYC'S POTENTIAL MEDICAL MARIJUANA PATIENTS (MMPS)	
<b>14 states</b>	
Total Population	81,440,859
MMPs	1,030,887
Rate	1.27%
<b>NYC</b>	
Total Population	8,336,697
<b>MMP Estimate</b>	<b>105,527</b>

Certain states provide detailed reporting of registered medical marijuana patients by condition. The table below presents the number of patients registered to receive medical marijuana for each recognized condition in Arizona, Colorado, Hawaii, Michigan, Montana, Nevada, Oregon, and Rhode Island. For each state, we include each condition's share of that state's registered MMPs. For instance, in Colorado, 93.7 percent of MMPs are registered for chronic pain. The eight states generally report the same categories, although Montana lumps all cancer, glaucoma, and HIV/AIDS patients into single category.

<sup>50</sup> DeBonis, Mike, "D.C. Records its First Pot Deal in at least 75 Years," *D.C. Politics*, July 29, 2013. [http://www.washingtonpost.com/local/dc-politics/dc-records-its-first-legal-pot-deal-in-at-least-75-years/2013/07/29/17521b42-f889-11e2-b018-5b8251f0c56e\\_story.html](http://www.washingtonpost.com/local/dc-politics/dc-records-its-first-legal-pot-deal-in-at-least-75-years/2013/07/29/17521b42-f889-11e2-b018-5b8251f0c56e_story.html), accessed on August 21, 2013.



NUMBER OF REGISTERED MEDICAL MARIJUANA PATIENTS FOR REPORTED CONDITIONS AND SHARE OF STATE'S PATIENTS REPORTING EACH CONDITION																	ESTIMATES	
	Arizona		Colorado		Hawaii		Michigan		Montana		Nevada		Oregon		Rhode Island		Ave. share	NYC
Chronic or severe pain	26,039	89.5%	100,112	93.7%	6,817	90.7%	79,313	66.0%	4,503	63.4%	3,808	91.3%	54,342	97.1%	3,504	72.3%	83.0%	87,594
Muscle spasms (including MS*)	543	1.5%	15,664	14.7%	156	2.1%	22,250	18.5%	118	1.7%	924	22.1%	14,990	26.8%	1,393	28.7%	14.5%	15,311
Severe Nausea	357	1.0%	11,216	10.5%	132	1.8%	9,084	7.6%	908	12.8%	719	17.2%	8,310	14.9%	858	17.7%	10.4%	10,996
Cancer	696	1.9%	2,843	2.7%	152	2.0%	2,526	2.1%			143	3.4%	2,332	4.2%	354	7.3%	3.4%	3,555
Seizures/epilepsy	255	0.7%	1,824	1.7%	48	0.6%	1,414	1.2%	207	2.9%	100	2.4%	1,362	2.4%	125	2.6%	1.8%	1,919
Wasting Syndrome (Cachexia)	40	0.1%	1,137	1.1%	46	0.6%	1,273	1.1%	405	5.7%	145	3.5%	1,063	1.9%	265	5.5%	2.4%	2,558
HIV/AIDS	186	0.5%	638	0.6%	72	1.0%	556	0.5%			57	1.4%	690	1.2%	146	3.0%	1.2%	1,227
Glaucoma	324	0.9%	1,070	1.0%	92	1.2%	1,112	0.9%			77	1.8%	911	1.6%	85	1.8%	1.3%	1,396
Hepatitis C	655	1.8%					1,617	1.3%							291	6.0%	3.0%	3,213
Other**	7,539		0		3,649		2,593		1,858				56		1,023	21.1%		
TOTAL PATIENTS	36,634		106,817		11,183		124,131		7,099		4,173		55,937		4,849		105,527	

Sources: Arizona Medical Marijuana Act, Monthly Report, 2013; Colorado Department of Health; Hawaii Department of Public Safety, Annual 2012 Report; Michigan Department of Health; Montana Marijuana Program May 2013 Registry Information; Nevada Health Division, Medical Marijuana Program; Oregon Health Authority; and Rhode Island Department of Health.

\* "MS" means multiple sclerosis

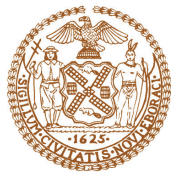
\*\* "Other" includes illnesses that were not reported in all states, such as Alzheimer's, Crohn's Disease, painful peripheral neuropathy, Central Nervous System disorder with pain, Admittance to hospice, ALS, Nail Patella, and a category for "Two or More Conditions." For Rhode Island, "other" also includes diagnoses that were not entered in the license system.

ADDITIONAL NOTES: Michigan's total number of patients in FY2012 was not reported outright. The report shows that adding patients by county yields 124,131 non-minor patients, but adding patients by condition yields 120,121. We use the lower count to calculate percentages in the table, but present the 124,131 as the total number of patients in this table and to calculate total MMPs in the 14 states. Similarly, in Hawaii, the reported total of 11,183 is higher than the sum of the reported conditions (11,164). The Annual Report that presents this information makes no attempt to explain the difference.

Some reporting differences among state are worth noting. Arizona and Hawaii report the number of people registered with multiple conditions (7,338 and 3,648, respectively), but do not distribute them among the different categories. Therefore, we calculated the share of MMPs registered for each condition without including the patients with two or more conditions. For instance, in Arizona, 88.9 percent of registered patients for which conditions are reported have chronic pain, or 26,039 divided by 29,095, which is the sum of patients in each category listed. Colorado, Montana, Nevada, Oregon, and Rhode Island do not separate out the number of patients registered for multiple conditions, so we were able to determine the share of patients for each condition by dividing by the total number of patients. These states count each patient under multiple conditions if they are registered for more than one, so the total number of patients is less than the sum of all conditions. Michigan only appears to report each patient once.

On the right side of the table we present an average across the eight states for the share that each condition comprises of the MMP population. We then apply these average rates to our estimate of patients who would register for medical marijuana in NYC: 105,527. These rough estimates suggest that more than 87,000 New Yorkers suffering from chronic pain and more than 15,000 New Yorkers with muscle spasms, including multiple sclerosis, could benefit from medical marijuana.





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