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Medical Marijuana in America and Illinois: Examining the Viability, Adoption Rates, Quality Control, Products, Patient Numbers, and Allowable Conditions

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“Medical Marijuana in America and Illinois:
Examining the Viability, Adoption Rates, Quality Control,
Products, Patient Numbers, and Allowable Conditions”

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A thesis submitted to the University Honors Program
in partial fulfillment of the requirements for the
Honors diploma

Southern Illinois University

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Table of Contents

Abstract.....	3
History.....	4
Overview of Tables and Graphs.....	5
Tables and Graphs.....	6
Discussion and Conclusions.....	23
Illinois Comparison.....	40
References.....	42

Abstract

Medical marijuana has become increasingly popular in the United States. However, it has been around for as long as the art of writing has. Written records of marijuana being used medically have dated back to 2900 B.C. Many states have taken to legalizing the usage of medical marijuana recently, starting in 1996. There are now 28 states that have passed medical marijuana laws, as well as the District of Columbia. Citizens and lawmakers of many more states are fighting for legalization. Medical marijuana is capable of relieving symptoms of many different diseases and conditions for all ages. This paper explores nearly all aspect of the medical marijuana industry. Dispensary application, licensing, renewal, and tax fees are all discussed. This paper also covers the year that each state chose to legalize marijuana and in what way the law was passed. Dispensary, cultivator, and testing lab guidelines and numbers are listed. The testing guidelines per state are also discussed, as well as the conditions that each state allows the use of medical marijuana for. There are several different types of medical marijuana products, and each state has its own guidelines as to which products are allowed. Next, the number of registered medical marijuana patients is compared to the overall population of each state. To conclude, this paper will compare Illinois with the other 28 legal states/ regions.

History of Medical Marijuana

Medical marijuana has been traced back to 2900 BC in Ancient China. Fu His, the Chinese Emperor at this time, stated that Cannabis had both yin and yang. The earliest written reference about medical uses of marijuana was recorded in 1500 BC in the Chinese Pharmacopeia. Hemp, a variety of the cannabis plant, was used anciently to make ropes and clothes. Cannabis was also very popular in India around this same time frame. Marijuana infused in drinks and teas was the most popular during this period in history. It is thought that cannabis oil was referred to in the Book of Exodus and used by Jesus. Throughout history, marijuana has been used in teas, lotions, oils, ointments, tinctures, and many other concoctions (“Historical Timeline- Medical Marijuana”). The use of Cannabis was recorded all throughout Ancient times into Medieval times. The plant was very popular in the Middle East, where it was mainly smoked during Medieval times. Cannabis was also integrated into medicine in Europe during the Middle Ages. In the 1500s, cannabis was brought to South America by the Spanish, but during this time there was only hemp present in North America. During the late 1700s, traces of medical hemp seed use was found in medical journals. Medical marijuana was not introduced to the U.S. until Mexican immigrants brought it over during the early 1900s. In 1914, the Harrison Act was created in order to declare drug use a crime. As you can tell, the use of marijuana for its therapeutic properties is not new, although the medical legalization of it is fairly new within the United States (Burke).

Marijuana became outlawed in the United States in 1937. The American Medical Association tried to fight against these new laws because there was no evidence that marijuana was a dangerous drug. The association was angry because they were aware that a prohibition

against marijuana would make it much harder for investigations to be done in the future that would reveal that medical uses for this drug. However, in 1976 the United States federal government created a program called the Investigational New Drug compassionate access research program which allowed individuals to receive up to nine pounds of cannabis each year. It was paid for by federal taxes. The DEA's Chief Administrative Law Judge ruled in 1988 that marijuana was a safe drug due to therapeutic properties. However, the DEA still did not obey this ruling due to a technicality and the hearing still has not been rescheduled. The following year, the FDA began receiving many new applications but the program was then suspended due to the federal prohibition of the drug (“Scientific History of Medical Cannabis”). Marijuana was still considered a Schedule 1 substance at this time. Since the federal government prohibited the use of marijuana, the individuals who needed and advocated for this law change reached out at the state level. California became the first state to allow its population to use marijuana medically with the permission of a doctor. There are currently 28 states, as well as the District of Columbia, that have legalized marijuana for medical uses (“Scientific History of Medical Cannabis”).

Overview of Tables and Graphs

Table 2, below, shows the year that each state legalized medical marijuana and the way that the law was proposed and passed. Figure 1 gives an insight on the rate of passage of these laws throughout the years. Since the laws are passed and regulated at the state level, each state varies on their laws, fees, and requirements surrounding medical marijuana. Table 1 lays out all of the fees required in each state for dispensaries and cultivators. Table 3 shows us how many dispensaries, cultivators, and labs are open and regulated per legal state. Figure 2 and 3 give a

visual representation of the number of dispensaries and labs by state. Table 4 allows the reader to learn what testing is done on the medical marijuana in the labs depending on the state. Some states do not require any testing to be done on the marijuana allowed and sold there. Table 5 shows the qualifying conditions for permitted use of medical marijuana per state. Figure 4 gives a visual representation of how many states each qualifying condition is allowed in. The types of medical marijuana products that are legal in each state is given in Table 6. Table 7 consists of the number of medical marijuana registered patients by state versus the population of that specific state.

Table 1. Application Fees, Registration Fees, Renewal Fees, and Taxes per each Legalized State

Sources: “Medical Marijuana Dispensary Laws: Fees and Taxes”, Skodzinski, and “Medical Marijuana Dispensary System”.

State	Application Fee	Registration/ License Fee	Renewal Fee	Taxes
Alaska	Dispensaries not authorized- adult use retailers became licensed in 2016	N/A	N/A	N/A
Arizona	\$5,000	N/A	\$1,000	5.6% state plus local taxes
Arkansas	\$7,500	\$2,500 if do not grow marijuana; \$25,000 if do grow marijuana	\$10,000 if do not grow marijuana; \$32,500 if do grow marijuana	6.5% state plus local taxes
California	Varies, local licensing	Varies, local licensing	Varies, local licensing	7.5% state (state registered patients exempt) plus local tax
Colorado	\$6,000-\$14,000 for MMJ centers, \$1,000 for infused product manufacturers	\$3,000-\$11,000 for centers, \$2,200 for infused product manufacturers	\$3,300-\$11,300 for centers, \$2,500 for infused product manufacturers	2.9% state plus local tax
Connecticut	\$1,000 for dispensaries, \$25,000 for	N/A	\$5,000 for dispensaries, \$75,000 for	6.35% state sales tax

	producers		producers	
Delaware	\$5,000 for compassion centers	\$40,000 certification and biennial renewal fee	\$40,000 certification and biennial renewal fee	Gross receipts tax if above \$1.2 million in revenue
Florida	Determined during the regulatory process	Determined during the regulatory process	Determined during the regulatory process	6% state plus local tax
Hawaii	Dispensaries are not authorized	N/A	N/A	N/A
Illinois	\$5,000 for dispensaries, \$25,000 for cultivation centers	\$30,000 per dispensary for licensing, \$200,000 per cultivation center for licensing	\$25,000 per dispensary, \$100,000 per cultivation center	7% excise tax at wholesale level and 1% sales tax
Maine	\$15,000 (\$14,000 refunded if applicant not chosen)	N/A	\$15,000	5% sales tax and 7% tax on edibles (meals and rooms tax)
Maryland	Growers & processors: \$6,000, Grower/ dispensaries: \$11,000, Dispensaries only: \$5,000	N/A	Annual License Renewal Fees- Growers: \$125,000, Dispensaries/ Growers: \$165,000, Processors: \$40,000, Dispensaries only: \$40,000	Generally not taxed
Massachusetts	\$1,500 stage 1 fee, \$30,000 stage 2 fee	N/A	\$50,000 per year to renew license registration	Not taxed
Michigan	State law does not allow them but localities may create ordinances in order to allow	N/A	N/A	N/A
Minnesota	\$20,000 for manufacturers	N/A	Not yet set	Not taxed
Montana	Not allowed	N/A	N/A	N/A
Nevada	\$5,000 MMJ establishment fee; \$3,000 cultivation facility certification fee; \$3,000 edible product establishment fee; \$5,000 independent testing lab	N/A	N/A	6.85% to 8.1% state plus likely to be locally taxed, plus 2% excise tax for wholesale sales and 2% excise tax for retail sales

	certification fee; \$30,000 dispensary certification fee			
New Hampshire	\$3,000 request for application fee	N/A	Annual licensing fee- \$40,000 or \$80,000 depending on location	Not taxed
New Jersey	\$20,000 for dispensaries; \$2,000 for unsuccessful applicants	N/A	\$20,000 each year	7% sales tax
New Mexico	\$1,000 for producers	N/A	\$5,000-\$30,000	Gross receipts tax (5.125%-8.8675% depending on location)
New York	\$10,000	\$200,000 for two years	\$200,000 every two year period	7% excise tax, 7% sales tax
North Dakota	\$5,000	\$25,000	N/A	5% state plus local
Ohio	Not yet established	Not yet established	Not yet established	5.75% state plus local tax
Oregon	\$250	\$1,000	\$1,000 per year	Not taxed
Pennsylvania	\$5,000 for dispensaries; \$10,000 for growers/ processors	\$30,000 per dispensary; \$200,000 for growers/ processors	\$5,000 for dispensaries; \$10,000 for growers/ processors	Growers/ processors pay 5% tax
Rhode Island	\$250	\$5,000 biennial registration fee	\$5,000 biennial registration fee	4% surcharge; 7% state sales tax
Vermont	\$2,500	N/A	\$20,000 or \$30,000	Not taxed
Washington	\$266	N/A	\$1,062	Business and occupation tax and 7%-9.5% state sales tax applies
Washington, D.C.	\$5,000 for dispensaries and cultivators	N/A	\$10,000/year for dispensaries; \$5,000/year for cultivators	6% sales tax

Table 2. Year Medical Marijuana was Legalized and How for Each State

Sources: “29 Legal Medical Marijuana States and D.C.”, “State-by-State Medical Marijuana Laws Report”, “New Hampshire Legislature Votes Overwhelmingly to Approve Statewide Medical Marijuana Law”, “House Bill 523”

State	Year the Law Passed	How the Law was Passed
California	1996	Ballot Measure 8 (58%)
Alaska	1998	Proposition 203 (50.13%)
Oregon	1998	Ballot Measure Issue 6 (53.2%)
Washington	1998	Proposition 215 (56%)
Maine	1999	Ballot Amendment 20 (54%)
Colorado	2000	House Bill 5389 (96-51 H, 21-13 S)
Hawaii	2000	Senate Bill 17 (27-14 H, 17-4 S)
Nevada	2000	Ballot Amendment 2 (71.3%)
Montana	2004	Senate Bill 862 (32-18 H; 13-12 S)
Vermont	2004	House Bill 1 (61-57 H; 35-21 S)
Rhode Island	2006	Ballot Question 2 (61%)
New Mexico	2007	House Bill 881 (125-11 H; 44-2 S)
Michigan	2008	Ballot Question 3 (63%)
Arizona	2010	Proposal 1 (63%)
New Jersey	2010	Senate Bill 2470 (46-16 S; 89-40 H)
Washington D.C.	2010	Initiative 148 (62%)
Delaware	2011	Ballot Question 9 (65%)
Connecticut	2012	House Bill 573 (284-66 H; 18-6 S)
Massachusetts	2012	Senate Bill 119 (48-14 H; 25-13 S)
Illinois	2013	Senate Bill 523 (36-31 H; 32-3 S)
New Hampshire	2013	House Bill 573 (18-6 S)
Maryland	2014	Ballot Measure 5 (63.7%)
Minnesota	2014	House Bill 523 (71-26 H; 18-15 S)
New York	2014	Ballot Measure 67 (55%)
Arkansas	2016	Senate Bill 3 (149-46 H; 42-7 S)
Florida	2016	Senate Bill 0710 (52-10 H; 33-1 S)
North Dakota	2016	Senate Bill 76 (22-7) HB 645 (82-59)
Ohio	2016	House Bill 523 (67-29 H; 18-15 S)
Pennsylvania	2016	Amendment Act B18-622 (13-0 vote)

Figure 1. Number of States Legalizing Medical Marijuana Per Year

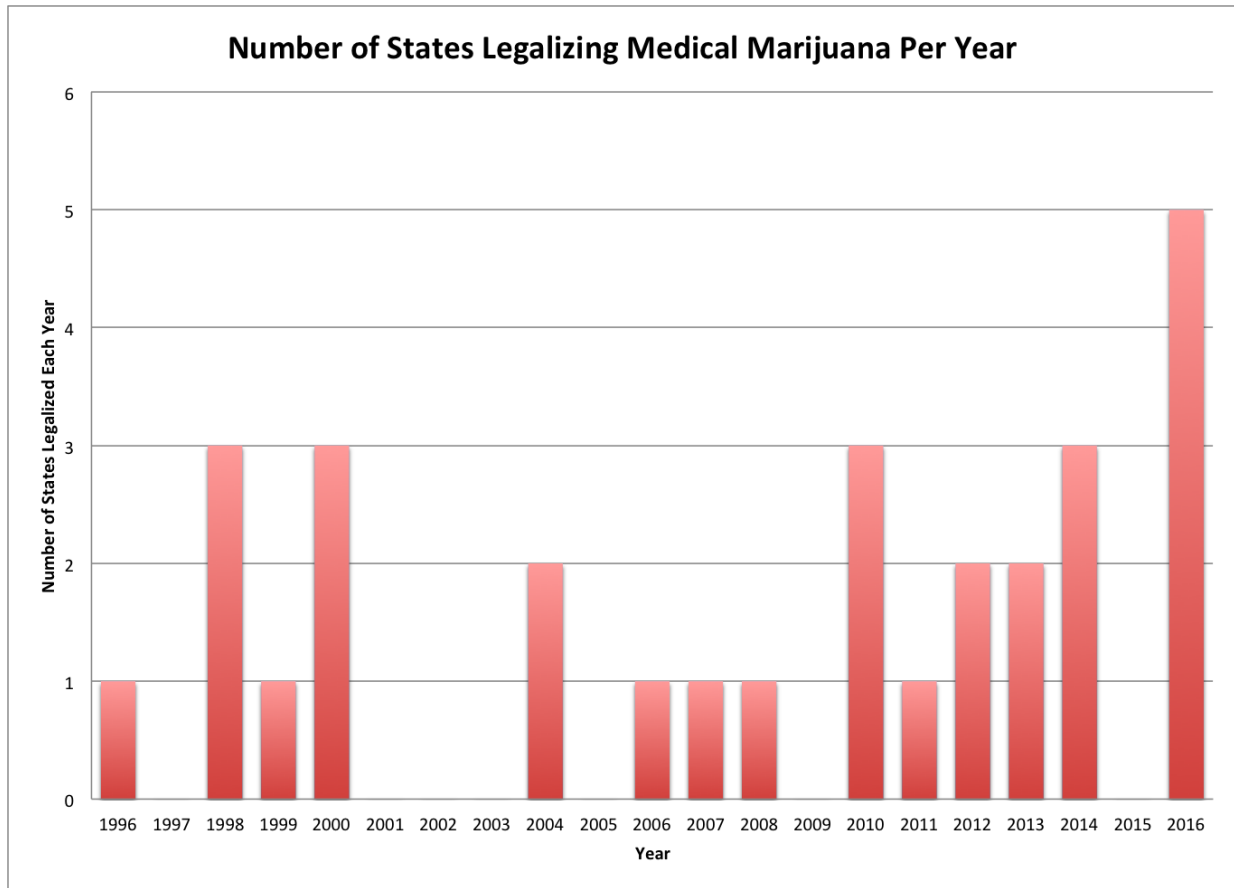


Table 3. Dispensary, Cultivator, and Testing Lab Information per State

Sources: “State Medical Marijuana Laws”, “Medical Dispensary Laws: Fees and Taxes”, “Dispensaries Near Me & Marijuana Laws by State”, “Medical Marijuana: State limits licenses for growers, processors, dispensaries”, “State-by-State Medical Marijuana Laws Report”, “Testing & Lab Services Archives”

State	Dispensary Guidelines	Separate Cultivators Needed?	Number of Testing Labs per State
Alaska	Dispensaries not authorized	N/A	1
Arizona	One non-profit dispensary for every ten pharmacies-99 currently	No	3
Arkansas	2 open, 32 allowed	Yes, 4-8 cultivation centers allowed for	?
California	No state licensing or registration- new system coming in 2018 that will regulate dispensaries but probably around a thousand currently	Yes, regulated by Department of Food and Agriculture	20
Colorado	No limit to the amount, 515 so far	There are separate grow licenses but must be partnered with a dispensary	18
Connecticut	Six dispensaries are open with three more expected	Yes, up to ten separate cultivation centers allowed	3
Delaware	Law states there can be three compassion centers (dispensaries) but so far only one open	No	?
Florida	Currently 7 licensed, No limit	Not yet know	1
Hawaii	Either vertical licenses will be issued with two cultivation centers and two dispensaries allowed per license. The dispensaries and cultivation centers must be in separate locations.	No- included in dispensary license	0
Illinois	60 dispensaries allowed and regulated	Yes, up to 22 allowed	5
Maine	Eight dispensaries currently regulated	Caregivers may sell two pounds/year of excess marijuana to dispensaries	2
Maryland	2 dispensary licenses for each of 47 state senate districts	Yes, 15 statewide currently but more allowed	0

Massachusetts	15 approved and up to 35 allowed	No	7
Michigan	Not provided for in state law	N/A	3
Minnesota	Two manufacturers each allowed to have four dispensaries throughout the state	No	0
Montana	Dispensaries not allowed	N/A	2
Nevada	51 open, 66 allowed	Yes, separate growers, infused product makers, and labs	9
New Hampshire	Four approved and allowed	No	0
New Jersey	7 currently open and allowed	No	3
New Mexico	35 producers with 24 dispensaries licensed, more may be as needed	No	1
New York	Each of five registered organizations may operate up to four dispensaries	No	2
North Dakota	Not yet known	Not yet known	?
Ohio	400 anticipated	Yes- 12 level 1 and 12 level 2 licenses allowed	0
Oregon	345 dispensary applications approved, no limit	Yes	13
Pennsylvania	50 licenses allowed	Yes, 25 licenses allowed	0
Rhode Island	Three dispensaries approved, no more allowed	No, but may dispense marijuana grown by patients, caregivers, or themselves	3
Vermont	Four dispensaries approved, no more allowed	No	0
Washington	Dispensaries not allowed- but marijuana retail stores may be licensed and dispense to registered patients, no limit	Yes	10
Washington, D.C.	Currently five dispensaries and seven cultivation centers; three more dispensaries allowed and as many cultivation centers as necessary	Yes, as many allowed as necessary	1
Nationwide- can be sent in			38

Figure 2. Number of Dispensaries Open/ Allowed in Each State

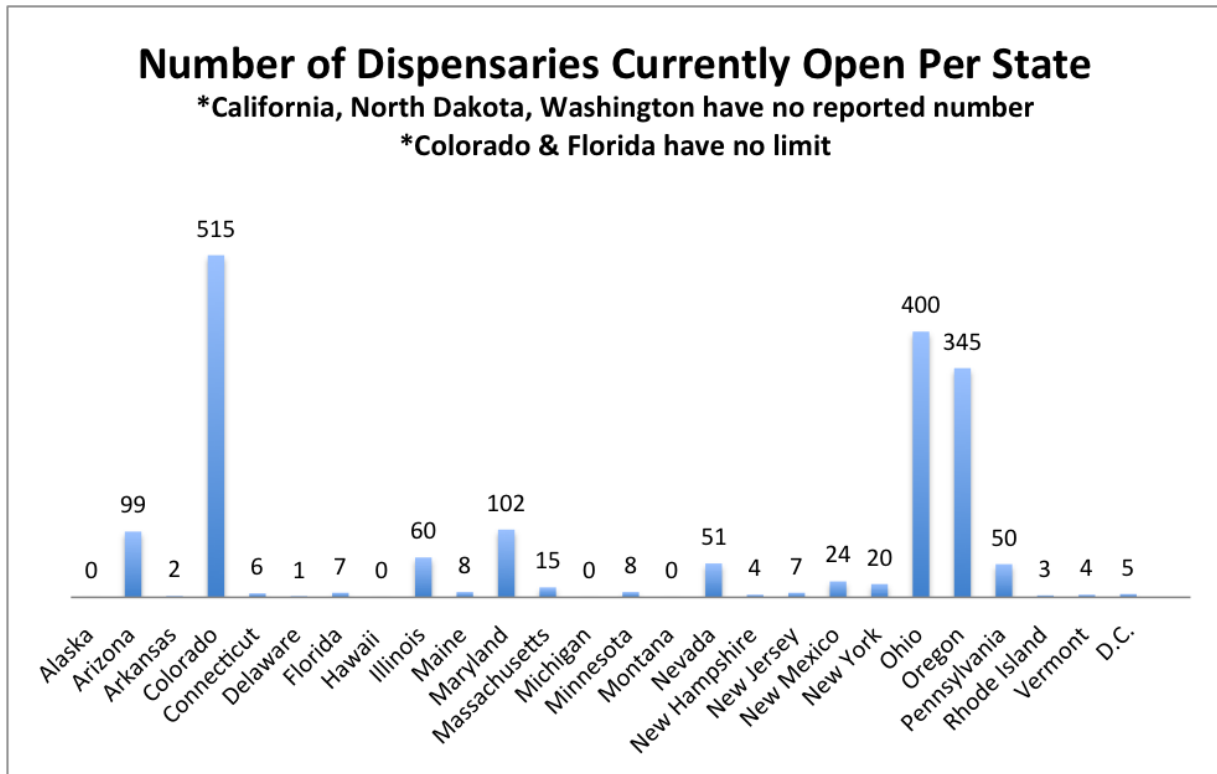


Figure 3. Number of Testing Labs Currently Operating in Each State

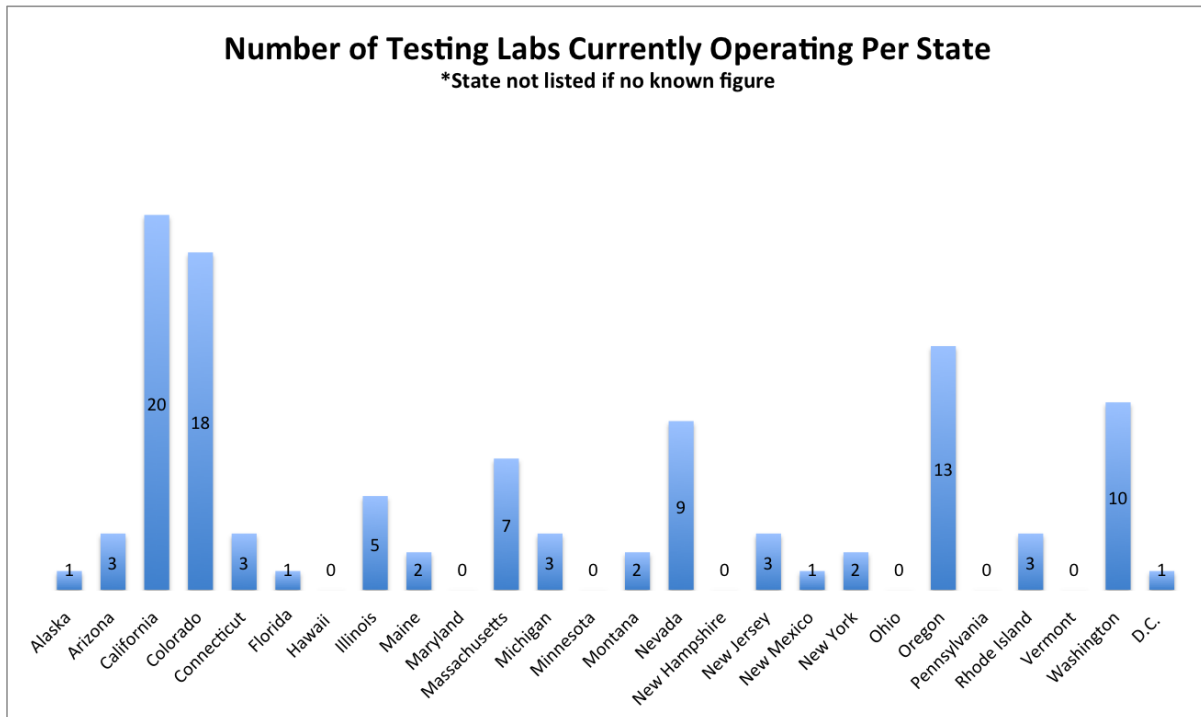


Table 4. Medical Marijuana Testing Required for Each State

Sources: Rough

Testing Required	State															
		AK	AZ	AR	CA	CO	CT	DE	FL	HI	IL	ME	MD	MA	MI	MN
	Each dispensary specifies testing required when applying							x								x
	State may require a batch to test at any point											x				
	No testing required/ No regulations		x												x	
Moisture	Content															
Potency	Unspecified															
	THC				x	x								x		
	CBD				x	x								x		
	THCA				x	x										
	CBDA				x	x										
	CBG				x	x										
	CBN				x	x										
Residual Solvents	Unspecified				x						x					
	Butane					x										
	Heptane					x										
	Benzene					x										
	Toluene					x										
	Hexane					x										
	Xylenes					x										
Terpenes	Unspecified				x											
Foreign Material	Unspecified					x										
	Hair				x	x										
	Insects				x	x										
Mycotoxins	Aflatoxin B1				x		x				x					
	Aflatoxin B2				x		x				x					
	Aflatoxin G1				x						x					
	Aflatoxin G2				x						x					
	Ochratoxin A				x		x				x					

	Total aerobic microbial count				X	X	X				X			X		
	Yeast & Mold				X	X	X				X					
Microbial Impurities	P. aeruginosa				X	X										
	Aspergillus spp.				X	X										
	Total Coliforms										X					
	Bile-tolerant gram-negative bacteria										X			X		
	S. aureus				X											
	Shiga-toxin producing E. Coli					X					X			X		
Pathogens	Salmonella species					X					X			X		
	Arsenic					X	X							X		
	Cadmium					X	X							X		
Metals	Lead					X	X							X		
	Mercury					X	X							X		
	Unspecified					X	X				X	X		X		
	Unspecified-toxic levels					X	X									
Pesticides																
Chemicals																

Table 4 Continued

Testing Required		State														
		MT	NV	NH	NJ	NM	NY	ND	OH	OR	PA	RI	VT	WA	D.C.	
	Each dispensary specifies testing required when applying															
	State may require a batch to test at any point															
	No testing	X											X			X

	required/ No regulations														
Moisture	Content	x			x									x	
Potency	Unspecified	x												x	
	THC		x		x				x						
	CBC		x		x				x						
	CBD		x												
	THCA														
	THCV		x												
	CBDA														
	CBG		x												
	CBN		x												
Residual Solvents	Unspecified				x									x	
	Butane														
	Heptane														
	Benzene														
	Toluene														
	Hexane														
	Xylenes														
Terpenes	Unspecified	x													
Foreign Materials	Unspecified	x												x	
	Hair														
	Insects				x										
Mycotoxins	Aflatoxin B1	x			x	x									
	Aflatoxin B2	x			x	x									
	Aflatoxin G1	x			x	x									
	Aflatoxin G2	x			x	x									
	Ochratoxin A	x			x	x									
	Total aerobic microbial count	x			x	x								x	
	Yeast & Mold	x		x	x	x								x	
	Microbial Impurities	P. aeruginosa					x								
Aspergillus spp.						x									
Total Coliforms		x													
Bile-tolerant gram-negative bacteria		x							x						
S. aureus									x						
Shiga-toxin producing E.									x						

	Coli														
Pathogens	Salmonella species						X								
	Arsenic		X		X	X	X								
	Cadmium		X		X	X	X								
Metals	Lead		X		X	X	X								
	Mercury		X		X	X	X								
	Others						X								
	Unspecified		X		X		X				X				
	Unspecified-toxic levels														
Pesticides															
Chemicals															

Table 5. State-by-State Allowable Conditions

Sources: “Qualifying Conditions for Medical Marijuana by State”, “Working to Reform Marijuana Laws”, “State-by-State Medical Marijuana Laws Report”

Condition	State														
	AK	AZ	AR	CA	CO	CT	DE	FL	HI	IL	ME	MD	MA	MI	MN
Cancer	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Glaucoma	X	X	X	X	X	X		X	X	X	X	X	X	X	X
HIV/ AIDS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hep. C		X	X				X			X	X	X	X	X	
ALS/ Lou Gehrig		X	X				X	X		X	X		X	X	X
Tourette's			X							X					X
Crohn's		X	X			X		X		X	X	X	X		
PTSD	X		X			X	X	X		X	X				
Severe/ rheumatoid arthritis			X	X		X				X					
Fibromyalgia			X							X					
Alzheimer's		X	X				X			X		X		X	
Severe/ Chronic Pain (including Complex Regional Pain Syndrome)	X	X	X	X	X	X	X	X	X	X	X	X		X	X
Nausea	X	X	X	X	X		X		X	X	X			X	
Seizures	X	X	X	X	X	X	X		X	X	X	X		X	X
Muscle Spasms	X	X	X	X	X	X	X		X	X	X	X		X	X
Cachexia	X	X	X	X	X	X	X			X	X	X		X	X
Neuropathy			X							X					
Multiple Sclerosis	X			X		X	X	X	X	X		X	X	X	
Migraines				X						X		X			
Anorexia				X											
Parkinson's						X		X		X			X		
Epilepsy						X	X	X		X		X		X	

Terminal Illness requiring end-of-life care						X	X											X
Cerebral Palsy						X												
Ulcerative Colitis						X												
Cystic Fibrosis						X												
Severe Psoriasis						X												
Autism with self-injury or aggression							X											
Lupus											X							
Muscular Dystrophy											X							
Spinal Cord Disease											X							
Traumatic Brain Injury											X							
Inflammatory Bowel Disease												X						
Hospice																		
Decompensated Cirrhosis																		
Any chronic or persistent medical symptom that limits the ability of the person to conduct one or more major life activity-generally has to be approved by a physician and petitioned for				X			X	X	X	X			X				X	

Table 5 Continued

Condition	State														
	MT	NV	NH	NJ	NM	NY	ND	OH	OR	PA	RI	VT	WA	D.C.	
Cancer	X	X		X	X	X	X	X	X	X	X	X	X	X	
Glaucoma	X	X		X	X		X	X	X	X	X		X	X	
HIV/ AIDS	X	X		X	X	X	X	X	X	X	X	X	X	X	
Hep. C					X		X	X			X		X		
ALS/ Lou Gehrig's				X	X	X	X			X				X	
Tourette's								X							
Crohn's	X			X	X		X	X			X		X		
PTSD					X		X	X		X					
Severe/ rheumatoid arthritis					X										
Fibromyalgia							X	X							
Alzheimer's							X	X	X		X			X	
Severe/ Chronic Pain (including Complex Regional Pain Syndrome)	X	X	X		X	X	X	X	X	X	X	X	X		
Nausea	X	X	X		X	X	X		X		X	X	X		
Seizures	X	X	X	X		X	X	X	X	X	X	X	X	X	

Muscle Spasms	x	x	x			x	x		x		x		x	x
Cachexia	x	x	x		x	x	x		x		x	x	x	x
Neuropathy	x				x	x	x			x				
Multiple Sclerosis	x	x		x	x	x	x	x		x	x	x	x	x
Migraines														
Anorexia					x								x	
Parkinson's						x		x		x				
Epilepsy				x	x	x	x	x		x		x	x	x
Terminal Illness requiring end-of-life care			x	x						x			x	
Cerebral Palsy														
Ulcerative Colitis									x					
Cystic Fibrosis														
Severe Psoriasis														
Autism with self-injury or aggression										x				
Lupus														
Muscular Dystrophy				x	x									
Spinal Cord Disease/ Damage						x	x	x		x				
Traumatic Brain Injury										x				
Inflammatory Bowel Disease						x		x		x				
Hospice					x	x								
Huntington's											x			
Sickle Cell Anemia									x		x			
Decompensated Cirrhosis														x
Any chronic or persistent medical symptom that limits the ability of the person to conduct one or more major life activity- generally has to be approved by a physician and petitioned for	x	x	x			x	x	x	x			x	x	x

Figure 4. Number of States Each Medical Marijuana Qualifying Condition is Allowed In

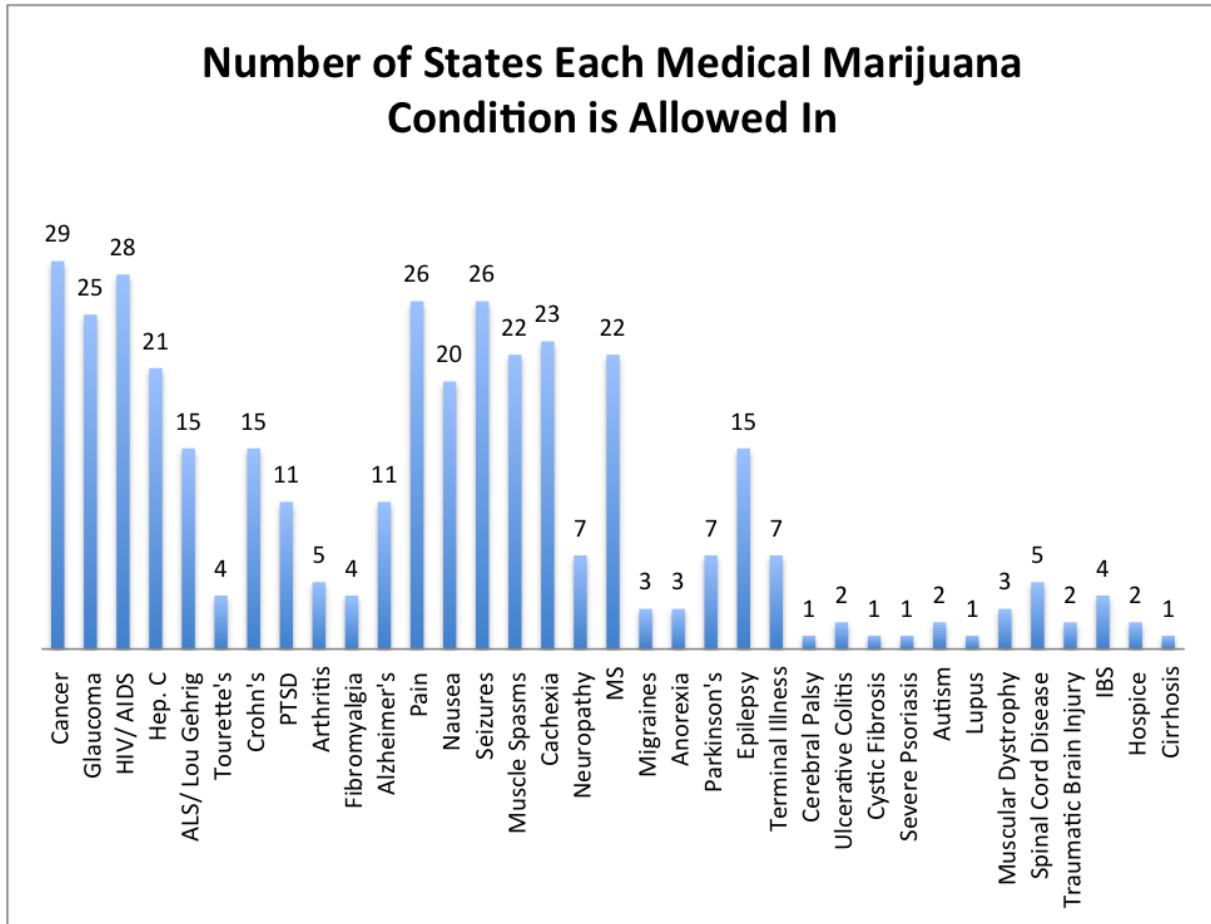


Table 6. Type of Medical Marijuana Products Allowed and/ or Sold by State

Sources: “Cannabis-Infused Edibles Laws: A State-by-State Breakdown”, “State-by-State Medical Marijuana Law Report”

State	Type of Products Allowed/ Sold						
	Flowers (Buds)	Concentrates (oils, hashes, waxes)	Edibles (foods, candies, drinks)	Transdermal (creams, ointments, lotions)	Seeds (to grow own plants)	Aerosols/ Vapors	Pills
Alaska	x	x	x	x			
Arizona	x	x	x	x	x		
Arkansas	x						
California	x	x	x	x	x		
Colorado	x	x	x	x	x		
Connecticut	x		x	x			x
Delaware	x	x	x				

Florida	x	x	x	x		x	
Hawaii	x		x	x	x		
Illinois	x		x				
Maine	x	x	x	x	x		
Maryland	x	x	x	x	x		
Massachusetts	x	x	x	x	x		
Michigan	x		x				
Minnesota		x				x	x
Montana	x		x				
Nevada	x	x	x	x	x		
New Hampshire	x		x				
New Jersey	x	x	x				
New Mexico	x	x	x				
New York		x					
North Dakota	x						
Ohio	x						
Oregon	x	x	x	x	x		
Pennsylvania	x						
Rhode Island	x		x				
Vermont	x		x				
Washington	x	x	x	x			
Washington, D.C.	x	x	x	x	x		

Table 7. Number of Registered Patients versus the Population of Each State

Sources: “Medical Marijuana Patient Numbers”, “States Ranked by Size & Population”, “State-by-State Medical Marijuana Laws Report”

State	Number of Registered Patients	Population
Alaska	1,042	710,231
Arizona	114,439	6,392,017
Arkansas	Not open	2,915,918
California	1,526,250 estimated	37,253,956
Colorado	94,577	5,029,196
Connecticut	16,566	3,574,097
Delaware	2,434	897,934
Florida	Not open	18,801,310
Hawaii	15,334	1,360,30
Illinois	15,900	12,830,632
Maine	50,810	1,328,361

Maryland	Not open	5,773,552
Massachusetts	34,189	6,547,629
Michigan	218,556	9,883,640
Minnesota	4,696	5,303,925
Montana	9,666	989,415
Nevada	25,465	2,700,551
New Hampshire	2,089	1,316,470
New Jersey	12,514	8,791,894
New Mexico	32,175	2,059,179
New York	14,045	19,378,102
North Dakota	Not open	672,591
Ohio	Not open	11,536,504
Oregon	67,141	3,831,074
Pennsylvania	Not open	12,702,379
Rhode Island	16,418	1,052,567
Vermont	3,391	625,741
Washington	16,520	6,724,540
Washington, D.C.	4,799	601,723

Discussion and Conclusions

For the first section of this paper, I will discuss the year that each legalized state passed their laws and how the law was passed. Medical marijuana state laws were enacted either by a ballot measure or through a bill introduced by the House of Senate. Although there are many different names for these law passages, many of them are very similar or even the same thing. The names of these law-passing techniques vary from state-to-state. A ballot measure/ question, proposition/ proposal, and initiative are all types of ballot measures and are all grouped into the same category below (“State-by-State Medical Marijuana Laws Report”).

The most popular way that these medical marijuana laws have been passed is a Ballot measure/ Ballot question, proposition/ proposal, and initiatives. The name for this type of passage varies from state-to-state, although they are all the same thing in theory. A ballot measure is simply a generic term used that entails questions or issues that are voted yes or no on a ballot. It is basically the same thing as a ballot question; the term just varies from state to state. This method was used to pass the first medical marijuana state law, which was in California in 1996. The majority vote for California was at 58%. The next ballot measure followed shortly after with a 53.2% vote in 1998 with Oregon. In 2006 and 2008, two more states passed laws using ballot questions, which were Rhode Island with 61% and Michigan with 63%. The next law passed using a ballot question was Delaware with 65% in 2011. In 2014, Maryland and New York passed the law with a 63.7% vote and 55% majority vote, respectively. This way of passing bills seems to be sort of evenly dispersed over the years with no real pattern or trend (“State-by-State Medical Marijuana Laws Report” and “29 Legal Medical Marijuana States and D.C.”). Next are the laws termed propositions/ proposals. The first Proposition passing medical marijuana laws was in 1998, the second state. This state was Alaska and it barely had a majority vote, with 50.13%. The following state was shortly after in 1998, with the state of Washington. It

passed with a slightly higher 56% vote. The last state to pass with a Proposal was Arizona in 2010. The majority vote was 63%. As the years continued to pass, the approval rate for each state that used Propositions or Proposals continued to increase (“State-by-State Medical Marijuana Laws Report” and “29 Legal Medical Marijuana States and D.C.”). An initiative was only used for passage in Washington D.C. Initiatives are proposed and voted for by the population of the particular state or area. Washington D.C. was passed in 2010 with a 62% vote. (“State-by-State Medical Marijuana Laws Report” and “29 Legal Medical Marijuana States and D.C.”).

The second most popular of these categories is the Senate Bill. This means that the bill was originated or altered by the State Senate. These bills received a majority vote by both the House of Representatives and the Senate, which make up the State’s Congress, and then approved by the Governor. The Senate Bill was used first in the year 2000 to pass laws in Hawaii with a 27-14 House and 17-4 Senate vote and followed in the year 2004 with Montana, which had a 32-18 House and 13-12 Senate vote. The next Senate Bill was proposed and passed by a vote of 46-46 Senate and 89-40 House in 2010 in New Jersey, and two more passing in 2012 and 2013 in Massachusetts and Illinois, respectively. Massachusetts passed with a majority vote of 48-14 House and 25-13 Senate, while Illinois had a final vote of 36-31 House and 32-3 Senate. Three more Senate Bills were passed in the year 2016. These states were Arkansas (149-46 House; 42-7 Senate), Florida (52-10 House; 33-1 Senate), and North Dakota (22-1 Senate; 82-59 House). Before the year 2012, Senate Bills seemed to be as sparse as the rest of the legislative law making methods, but after the year 2012, they accounted for 41.7% of the passed laws (“State-by-State Medical Marijuana Laws Report” and “29 Legal Medical Marijuana States and D.C.”).

The next most popular passage is a House bill. This is similar to the previously mentioned Senate bill. The only difference is they originate or are modified in the House of Representatives as opposed to the Senate. The first medical marijuana state to use a House bill was Colorado in 2000. The bill passed with a majority vote of 96-51 House and 21-13 Senate. In 2004, Vermont had the next House bill with a 61-57 House and 35-21 Senate vote. New Mexico had a House bill vote of 125-11 House and 44-2 Senate in 2007, while Connecticut followed in 2012 with a 284-66 House and 18-6 Senate vote (“State-by-State Medical Marijuana Laws Report” and “29 Legal Medical Marijuana States and D.C.”). A House bill was passed in New Hampshire in the year 2013. The vote was 18-6 for the passage of the medical marijuana (“New Hampshire Legislature Votes Overwhelmingly to Approve Statewide Medical Marijuana Laws”). The next House bill was passed in 2014 for Minnesota with a vote of 71-26 House and 18-15 Senate (“State-by-State Medical Marijuana Laws Report” and “29 Legal Medical Marijuana States and D.C.”) Ohio was the most recent state to receive medical marijuana laws from House Bill 523. The votes were 67-29 House and 18-15 Senate (“House Bill 523”).

Ballot Amendments are the next most popular. An amendment is “an alternation proposed or effected by this process” (“Amendment”). Therefore, these two types are changes to a ballot of policy that is already in place. A Ballot Amendment was passed in 1999 by Maine with a 54% vote. The next Ballot Amendment, in 2000, allowed legalization in Nevada with 71.3%. The last Amendment Act was very recent in 2016 for Pennsylvania. This Act passed with a 13-0 vote (“State-by-State Medical Marijuana Laws Report” and “29 Legal Medical Marijuana States and D.C.”).

For this next section, testing requirements per state will be discussed. There are various testing requirements for each state that has legalized a medical marijuana program. Several states including Arizona, Michigan, Montana, Rhode Island, and Washington D.C. do not have specific regulations on the medical marijuana sold in the state, so no testing guidelines have been set (Rough). Maine's government does not have any specific testing guidelines for their medical marijuana, but the state may obtain a sample batch to test it for any contaminant or potency at any point. Delaware and Minnesota's government has ruled that each dispensary specifies the testing that is required when applying for a license. This means that the testing varies from each dispensary (Rough).

However, majority of the states do require some form of testing. The most common testing is potency of the marijuana flower that is grown. When potency is tested for, tetrahydrocannabinol (THC) and cannabidiol (CBD) are always included. States that test for these include California, Colorado, Massachusetts, New Hampshire, New Mexico, and Oregon. A few of these states also test for potency of tetrahydrocannabinolic acid (THCA), cannabidiolic acid (CBDA), cannabigerol (CBG), and cannabinol (CBN). The two states that include the potency tests for these substances include California and Colorado. New Hampshire is the only state that also requires potency testing for CBC, THCV, CBG, and CBN (Rough).

Residual solvents are another large category tested for by the testing labs per state. The most common solvents tested for include butane, heptane, benzene, and toluene. These substances are tested for by California, Colorado, Illinois, and New Mexico. Colorado also tests for the solvents hexane and xylenes. Terpenes are different from residual solvents but they are

tested for in the same manner. California and Nevada are the only two states that require testing for terpenes (Rough).

Foreign material is sometimes tested for when it comes to medical marijuana. Some states do not specify what the foreign materials to be tested for are, but most of the time they include hair and insects within the plant. California, Colorado, Nevada, and Washington are the four states that require foreign material testing when the sample batch is sent to the lab (Rough).

Mycotoxins are often tested for. The most popular include Aflatoxin B1, Aflatoxin B2, Aflatoxin G1, Aflatoxin G2, and Ochratoxin A. California, Connecticut, Illinois, Nevada, New Mexico, and New York all have laws that require testing for these mycotoxins (Rough).

The next group tested for in several states is microbial impurities. This includes total aerobic microbial count, yeast and mold count, *Pseudomonas aeruginosa*, *Aspergillus spp.*, total coliforms, and bile-tolerant gram-negative bacteria. The states that require testing for most or all of these include California, Colorado, Connecticut, Illinois, Massachusetts, Nevada, New Mexico, New York, and Washington. Each state has a different amount that is allowable in the marijuana strain. (Rough).

Pathogens that could be harmful to the human body if ingested are also tested for in some states. These can include *Staphylococcus aureus*, Shiga-toxin producing *E. coli*, and Salmonella species. The states that test for these pathogens are California, Colorado, Illinois, Massachusetts, and New York. Each state has its own specific guidelines on the amount allowable, but they are all very low figures (Rough).

Toxic metals are tested for in the states Colorado, Connecticut, Massachusetts, Nevada, New Jersey, New Mexico, and New York. The four metals tested for are always arsenic, cadmium, lead, and mercury (Rough).

The last two categories that can be tested for throughout the medical marijuana states are pesticides and chemicals. None of the state guidelines had specified chemicals or pesticides that needed to be tested for, they only specified that they needed to be below toxic levels. The states that require pesticide testing are Colorado, Connecticut, Illinois, Maine, Massachusetts, Nevada, New Jersey, New York, and Oregon. The states that also require toxic chemical level testing include Colorado and Connecticut (Rough) The sorts of chemicals were not specified in my findings, it was only stated that toxic levels of chemicals were looked for.

Looking through the tables I have made and these summaries, you are able to see a trend. The states that have a higher number of dispensaries, as well as a higher number of patients, have a larger number of testing requirements. The states that have recently been passed into medical marijuana do not require nearly as many tests.

Medical marijuana law passage has been around in the United States since 1996. This portion will discuss the trends in the legalization of medical marijuana. Figure 1 shows a bar graph that helps the reader get a better understanding of the rate of medical marijuana legalization throughout the United States. In 1996, California was the first state to legalize marijuana for medical uses. The following year, 1997, did not have any states that chose to pass these laws. There was a relatively large increase from zero to three states the next year. These three states were Alaska, Oregon, and Washington. 1999 only had one state, Maine, to pass medical marijuana laws. The year 2000 increased back up to three states with the passing of laws

in Colorado, Hawaii, and Nevada. Not one single state legalized marijuana for medical use in the years 2001, 2002, or 2003. Through my research, I have not been able to find any evidence that there was a reason as to why no laws were passed during this three-year time span. However, this decrease may have been due to the other states waiting to see if the laws that had already legalized this medication would be successful or not (“29 Legal Medical Marijuana States and D.C.”). Legalizing marijuana for medical use has been surrounded by a negative stigma due to the illegal recreational use of the drug. Therefore, it has been seen as risky to pass these types of laws and the observation of the success of other states could be crucial. In the year 2004, Montana and Vermont then followed the legalization trend. 2005 was another year where no state in America legalized medical marijuana. 2006 followed with the legalization of Rhode Island, while 2007 and 2008 also only had one state pass legislation. These states were New Mexico and Michigan, respectively. No states allowed legalization in the year 2009. There was an increase to two states and Washington D.C. in the year 2010. These states were Arizona and New Jersey. Over the next four years, there was a steady increase in the number of states that chose to legalize marijuana for medical use (“29 Legal Medical Marijuana States and D.C.”). 2011 brought legalization in Delaware. 2012 included Connecticut and Massachusetts, while 2013 included Illinois and New Hampshire. 2014 had an increase to three states: Maryland, Minnesota, and New York. The following year had zero states pass laws. However, the year 2016 had the largest jump up to five states: Arkansas, Florida, North Dakota, Ohio, and Pennsylvania. Besides the year 2015, we have seen a steady increase in the number of states legalizing medical marijuana per year and it is predicted that this trend will continue with the growing popularity and publicity of medical marijuana (“State-by-State Medical Marijuana Laws Report”).

For this portion of my research, I examined the number of conditions versus the number of registered patients per state in order to see if there was a correlation between these two variables. I used Table 5 and Table 7 of my research to help me with this comparison. The number of registered patients ranges from approximately 1,042-1,526,250. However, the 1,526,250 figure is an extreme outlier, the next highest registered patient number is 218,556 (“Medical Marijuana Patient Numbers”). Also, six of the states do not require the patients to register, so their figures are unknown. This is a very wide range of patients per state. However, when looking at the number of conditions allowable to purchase medical marijuana, these figures only range from 7-26, which is a much smaller gap. Based off of the number of approved conditions, the median of these numbers is 16.5. To make this simple, that means that the states that are on the lower spectrum of registered patients would have fewer than 16.5 approved conditions, and the states that had a registered patient number in the upper spectrum would have over 16.5 conditions approved (“Qualifying Conditions for Medical Marijuana by State”).

New Hampshire is the state with the lowest number of allowable conditions at 7, with a registered number of patients at 2,089. Massachusetts and Colorado both allow 8 conditions with patient numbers at 34,189 and 94, 977, respectively. These numbers are in the mid-range of population and the high range of population. Two states allow only 9 conditions, which are Hawaii and Vermont. The registered number of patients in Hawaii is 15,334, which is much lower than the number of patients in the states that allowed 8 conditions. Vermont has 3,391 registered patients, which is a similar number to New Hampshire’s population. Alaska allows 10 medical marijuana conditions with a registered patient figure of 1,042. Minnesota allows 10 as well and has a patient population of 4,696. The last three states that allow 10 medical conditions are Nevada, New Jersey, and Oregon. Nevada has a registered medical marijuana patient

population of 25, 465. New Jersey has 12,514 registered patients while Oregon has 67,141 patients registered (“Medical Marijuana Patient Numbers”). As you can see between these five states that have 10 allowable medical conditions, the number of registered patients varies greatly. Alaska has the lowest number of patients registered thus far. Minnesota has a fairly small number while Nevada and New Jersey have a number close to the average number of registered patients. However, Oregon has a higher than average patient registry figure. The states of Connecticut and Florida both allow 11 conditions in order to qualify for medical marijuana. Connecticut has approximately 16,566 registered patients while Florida does not have a reported figure because individuals are not required to register with the state (“Qualifying Conditions for Medical Marijuana by State”). There are three states that have 12 allowable conditions. These states are Arizona, Montana, and Rhode Island. Arizona has a registered patient population of 114,349, Montana has a patient population of 9,666, and Rhode Island has a patient population of 16,418. Washington D.C. also allows 12 conditions. Montana and Rhode Island both have a semi-average number, while Arizona has an above average number of registered patients. The population of registered patients in D.C. is 4,799, which is below average. Only two states have 13 allowable conditions, California with an estimated patient population of 1,526,250, and Maine, with a patient population of 50, 810. Maryland and Michigan both allow 14 conditions as a reason to be prescribed to medical marijuana. Maryland does not have a number reported due to not having required state registration (“State-by-State Medical Marijuana Laws Report”). Michigan has a reported patient number of 218,556. This is the second highest number of registered patients for all 28 legalized states, even though there is still a below average number of conditions allowed in Michigan. Washington allows 15 conditions and has 16,520 patients registered. Delaware and New York both allow 16 medically diagnosed conditions in order to be

a registered patient. Delaware has a patient count of 2,434, which is on the very low end of the population spectrum. New York has a patient count of 14,045, which is a fairly average number for the 28 states. Now that we have discussed all of the states that allow 7-16 medical conditions in order to become a registered medical marijuana patient, we are able to observe that there is generally no correlation between the number of registered patients and the number of conditions allowed in each state (“Medical Marijuana Patient Numbers”).

Now we still discuss the states that have 17-26 allowable medical conditions in relation to their registered patient population. Arkansas has 17 allowable conditions but no reported number of registered patients. New Mexico and Pennsylvania also both allow 17 conditions. New Mexico has a reported population of 32,175, while Pennsylvania does not have a reported number due to not requiring registration for the patients. No states allow only 18 conditions. New Mexico’s patient number and condition number are both above average. 19 conditions are legalized in North Dakota. The patient population there is also not reported due to not legal registration (“State-by-State Medical Marijuana Laws Report”). Ohio has 20 allowable conditions with 67,141 registered patients. This number of registered patients is above average, as well as an above average number of allowable conditions. The last state is Illinois, which allows 26 medical conditions in order to be prescribed medical marijuana. Illinois has 15,900 registered patients. This is the highest number of medical conditions associated with a very common number of patients (“Medical Marijuana Patient Numbers”). Therefore, I was not able to identify any direct correlation between the number of registered patients to the number of conditions allowable per state.

For this portion of the discussion, I will be referring to Table 3 and Table 7. Table 3 includes the number of dispensaries open per state and Table 7 includes the number of registered patients per legalized state. When referring to dispensaries, I am referring to the number currently opened, not the number anticipated or allowed. To make this correlation easier to follow, I will be going from the lowest to highest number of dispensaries. Alaska, Michigan, Montana, and Washington do not allow dispensaries to operate in the state. California does not regulate the amount of dispensaries, therefore the number is not known. The figure is also not reported for North Dakota or Ohio. Hawaii is going to allow dispensaries but none have been opened yet and there has not been a set limit. The lowest number of open dispensaries in a legal state is one, while the highest number of open dispensaries is 515. The mean of this number is 63.6 if I am not including the states that do not allow dispensaries or have an unreported number (“Dispensaries Near Me & Marijuana Laws by State”). This means that lower end registered patient populations should correspond with a number of dispensaries lower than 63.6, while higher patient populations should correspond to a dispensary count higher than 63.6 if there is a correlation pattern.

Delaware is currently the only state that has one dispensary open, while having a patient registry of 2,434 (“Medical Marijuana Patient Numbers”). This is a very low number of open dispensaries as well as a low number of registered patients. Arkansas has two open dispensaries while having an unknown number of registered patients due to not requiring registration. Three dispensaries are currently operating in Rhode Island. The registered patient number in this state is 16,418. This is a fairly average amount of patients with a below average number of dispensaries. New Hampshire has four dispensaries with 2,089 registered patients (“Medical Marijuana Patient Numbers” and “State-by-State Medical Marijuana Laws Report”). Vermont

has a patient population of 3,391 with four dispensaries open and operating. The figures for both of these states correspond to a low number of registered patients compared to a low number of open dispensaries. Washington D.C. is the next highest, with a number of five dispensaries operating. The patient population in D.C. is 4,799. Connecticut has six dispensaries currently open with 16,566 registered patients. This is another example of a low number of dispensaries having a middle average number of registered patients. Seven dispensaries are open in Florida. The number of registered patients in this state is not known because no registration is required to become a patient (“Medical Marijuana Patient Numbers”). There are also seven dispensaries open in New Jersey, while the patient count is 12,514. Maine and Minnesota both each have eight dispensaries open and operating. Maine has a patient count of 50,810 while Minnesota has a patient count of 4,696. While Minnesota follows the pattern of a low number of patients versus a low number of dispensaries, Maine is the very opposite. Maine has a large number of patients compared to its low count of dispensaries. Fifteen dispensaries are open in Massachusetts (“Medical Dispensary Laws: Fees and Taxes”). Massachusetts has 34,189 registered patients. This means that an above average number of patients is corresponding for a below average number of dispensaries. New York has 14,045 registered patients with 20 dispensaries open. New Mexico has 24 dispensaries open for 32,175 patients. Pennsylvania has 50 dispensaries open. The number of patients in Pennsylvania is not known due to a lack of required registration. 51 dispensaries in Nevada serve 35,465 patients. Illinois’ 60 dispensaries provides for 15,900 registered patients. 99 dispensaries are open and operating currently in Arizona for 114,439 patients (“Medical Marijuana Patient Numbers”). This corresponds with the idea that a larger number of patients require a larger number of dispensaries. 354 dispensaries serve Oregon’s medical marijuana patient count of 67, 141. Last but not least, 515 dispensaries currently operate

in Colorado. They serve 94,577 patients in this state. These figures also correspond with the pattern of an above average number of dispensaries correlated with an above average number of registered patients. Overall, there is a pattern present in these figures. For the most part, as the number of registered patients rose, as did the number of open dispensaries for each state. The exceptions were Connecticut, Maine, Massachusetts, and Rhode Island (“Dispensaries Near Me & Marijuana Laws by State”). All other states followed the thought that a lower/ higher number of patients require a lower/ higher number of dispensaries to properly serve them.

This section will examine whether or not there is a correlation between the year the legalization of medical marijuana took place in each state versus the number of current registered patients. In theory, the states to have legalized medical marijuana first should have a higher number of registered patients. If this pattern is followed, the newest legalized states should have a much lower number of medical marijuana users. California was the first state to legalize marijuana in 1996 (“29 Legal Medical Marijuana States and D.C.”). There are currently an estimated of 1,526,250 patients registered in California. This definitely follows the thinking that longer legalization leads to a greater number of registered patients. Alaska, Oregon, and Washington all passed legalization in 1998. Alaska has 1,042 patients while Oregon has 67,141 registered (“Medical Marijuana Patient Numbers”). Washington has 16,520 registered. Alaska’s registered patient figure is significantly low, while Washington’s is still below what would be expected if there were a correlation. Maine legalized medical marijuana in 1999 and now has 50,810 patients legally registered, which is an above average figure. Colorado, Hawaii, and Nevada all legalized in the year 2000. Colorado has a fairly high number of registered patients at 94,577. Hawaii has a number of 15,334 patients registered, which is slightly below average. Nevada has a patient population of 25,465. In 2004, Montana and Vermont legalized medical

marijuana. Montana has a registered number of 9,666 patients and Vermont has 3,391 registered patients. These are both low figures but Vermont's patient number is particularly low. Rhode Island was the only state to pass medical marijuana legislation in 2006 ("State-by-State Medical Marijuana Laws Report"). They now have 16,418 patients registered. New Mexico legalized medical marijuana in 2007. The registered patient count for this state is 32,175. Michigan's time came in 2008 and they now have a patient count of 218,556. This is a fairly high patient count with a passage year still on the lower end of the spectrum. 2010 brought the passage of medical marijuana in Arizona, New Jersey, and Washington D.C. Arizona has a registered patient population of 114,439, New Jersey has a patient population of 12,514, and D.C. has a patient count of 4,799 ("Medical Marijuana Patient Numbers"). D.C. is on the low end of registered patients compared to the average, while New Jersey is closer to the average and Arizona is above. We are now nearing the later years of passage. This means that, if we were following the pattern predicted, then all of the following states will have a below average number of registered patients. Delaware was the only state to legalize in 2011. They now have a registered patient count of 2,434. This is well below average. The next states to pass medical marijuana laws in the year 2012 are Connecticut and Massachusetts ("29 Legal Medical Marijuana States and D.C."). These states have patient populations of 16,566 and 34,189. Connecticut's is slightly below the usual but Massachusetts' is above. Illinois and New Hampshire both legalized marijuana in the year 2013. Illinois' now has a patient registration of 15,900 while New Hampshire has a patient registration of 2,089 ("Medical Marijuana Patient Numbers"). The Illinois figure is slightly below the average, while the New Hampshire average is well below the average. Both of these figures follow the thought that these later years should have lower than average patient population. In 2014, Maryland passed legalization laws. Their current patient

registry is not open because there is no legal requirement to register. Minnesota and New York both also passed medical marijuana laws in 2014 (“State-by-State Medical Marijuana Laws Report”). Minnesota now has 4,696 patients registered and New York now has 14,045 patients. The last five states were all legalized in 2016. Arkansas’ patients do not have to register with the state. Florida, North Dakota, Ohio, and Pennsylvania all do not require registration by law so there is no known figure for these states that legalized most recently (“Medical Marijuana Patient Numbers”).

Looking at the comparison’s made above, we are able to see that there is not a direct correlation between the year that legalization was passed in the state versus the number of registered patients in that specific state. The data shows there is no steady decrease in that number of registered patients with the increase of legalization year. However, it is difficult to analyze the data with the most recent states that legalized in the year 2016 because none of them require registration.

Next, we will discuss marijuana products. There are seven types of medical marijuana products that could be sold. Each state has different laws allowing certain types of these products. The flowers of the marijuana plant, or the bud, are the smokable portion. Concentrates are oils, hashes, and waxes. Edibles are food, candies, and drinks. Transdermal marijuana products include creams, ointments, and lotions. Seeds are available for purchase so the merchant can grow their own limited number of plants. Aerosols and vapors are also available, as well as a pill option (“State-by-State Medical Marijuana Laws Report”).

The most common form of marijuana product sold are the flowers. Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Hawaii, Illinois, Maine,

Maryland, Massachusetts, Michigan, Montana, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, Vermont, Washington, and Washington D.C. all allow the purchase of marijuana flowers (“State-by-State Medical Marijuana Laws Report”).

The next most popular form of marijuana products are edibles. Edibles are sold in Alaska, Arizona, California, Colorado, Connecticut, Delaware, Florida, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, Montana, Nevada, New Hampshire, New Jersey, New Mexico, Oregon, Rhode Island, Vermont, Washington, and Washington D.C. all allow the legal purchase and usage of edible products (“Cannabis-Infused Edibles Laws: A State-by-State Breakdown”).

The third most popular marijuana product sold in the legalized states are concentrates. Alaska, Arizona, California, Colorado, Delaware, Florida, Maine, Maryland, Massachusetts, Minnesota, Nevada, New Jersey, New Mexico, New York, Oregon, Washington, and Washington D.C. all have legalized concentrates (“State-by-State Medical Marijuana Laws Report”).

Transdermal products are the next most popular item to be allowed in legalized states. These products are legalized in Alaska, Arizona, California, Colorado, Connecticut, Florida, Hawaii, Maine, Maryland, Massachusetts, Nevada, Oregon, Washington, and Washington D.C. (“State-by-State Medical Marijuana Laws Report”).

Seeds are the next most allowed items in legalized states. Each state has its own restriction on how many plants a person can grow, which is not covered in this research. Seeds

can be purchased legally in Arizona, California, Colorado, Hawaii, Maine, Maryland, Massachusetts, Nevada, Oregon, and Washington D.C. (“State-by-State Medical Marijuana Laws Report”).

The two least allowed products are aerosols/ vapors and pills. Florida and Minnesota are the only two states to allow inhalable products. Connecticut and Minnesota are the only two states to legalize the usage of pills (“State-by-State Medical Marijuana Laws Report”).

The differences between dispensary application, registration, and renewal fees will now be discussed. In order to open an operating dispensary, an application must first be submitted. This application comes with an application fee, which is generally not fully refundable if the application is denied, but some of it may be. In Table 1, the variety of application fees is listed. These fees range from \$1,000 in Connecticut to \$30,000 in Massachusetts (“Medical Marijuana Dispensary Laws: Fees and Taxes”). Each state sets their own application fee depending on how many dispensaries will be allowed and how much money they chose to profit. These fees vary greatly between each state and there seems to be no trend between the year that the state was legalized or the number of dispensaries or registered patients and a greater or lower application fee. Each state’s fee can be viewed in Table 1 (“Medical Marijuana Dispensary Laws: Fees and Taxes”).

The next fee is a registration or licensing fee. The only states that require this fee are Arkansas, California, Colorado, Delaware, Florida, Illinois, New York, North Dakota, Oregon, Pennsylvania, and Rhode Island (“Medical Marijuana Dispensary System”). Again, each state determined whether or not this fee will be required and they set their standards for the fees

depending on many factors. These registration/ licensing fees range from \$2,000-\$200,000 (Skodzinski).

Renewal fees are the next fees that apply to most medical marijuana states. These are fees typically required each year that the dispensary stays open and operating. Renewal fees do not apply in Alaska, Hawaii, Michigan, Montana, Nevada, or North Dakota. This is because these states decided to not make the dispensaries legally obliged to pay a renewal fee each year. Renewal fees range from \$1,000-\$100,000 depending on the laws of each state (Skodzinski). These fees for each state can be found in Table 1.

Illinois Comparison

The above sections discuss trends and figures revolving medical marijuana in the 28 legalized states in America. This portion will focus mainly on Illinois, and where it lies within the other states. Illinois legalized marijuana for medical use in the year 2013, which was very recent. However, Illinois is a very progressive state when it comes to their laws. For example, Illinois allows the most conditions out of all of the legalized states, with a count of 26. Illinois has also adopted medical marijuana patients as a fairly quick rate. There is a registered patient population of 15,900 within the first three years of passing legislation. Illinois also currently runs and regulates 60 dispensaries, which is significantly more than the other states with similar registered patient numbers. This means that there is room to grow and the dispensaries will still be able to keep up with the demand.

Before I started my research, it was very well known that medical marijuana was popular in California and Colorado. My question was why? What I discovered was that these two states

were some of the first to legalize medical marijuana and it was easier to become a patient during these times if you moved there than to try to petition for legalization in your state. I believe that Illinois has the potential to grow significantly in their medical marijuana program, especially with the population of Chicago. The rate of patients registering continues to go up because there is such a large number of conditions that can allow an individual to legally buy medical marijuana.

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