

Revenue Impact of CS/CS/SB 1030 (2014 Legislative Session)

Updated Revenue impact of CS/CS/SB 1030 (2014 Legislative Session)

Medical use of low-THC cannabis (CS/CS/SB1030)

Last revision: October 12, 2015 for the FIEC on Use of Medical Marijuana for Debilitating Medical Conditions (15-01)

1. Estimate of Florida low-THC cannabis users with cancer.
- 1.1. Estimate the Florida cancer population.

Estimated Florida Population Living with Cancer (Cancer Prevalence)

Population Categories	UPDATED
	2017
Total Population	20,434,731
Population with cancer	900,187

Source: Cancer complete prevalence 2012 data, Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov). Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov). Prevalence database: "US Estimated Complete Prevalence Counts on 1/1/2012". National Cancer Institute, DCCPS, Surveillance Research Program, Data Modeling Branch, released April 2015, based on the November 2014 SEER data submission. Florida Demographic Estimating Conference, July 2015, population projection for April 1, 2017.

- 1.2. Use the average (0.74%) from ten other states for medical marijuana users with cancer as a percentage of all cancer patients from the table below for calculations in the next steps.

Cancer Patients Using Medical Marijuana for Selected States

UPDATED						
A	B	C	D	E	F	G
State	Population	Total Users of Medical Marijuana	Users of Medical Marijuana with Cancer	Cancer patients	Cancer Patients Using Marijuana	
					% of All Cancer Patients	% of Total Users of Medical Marijuana
Arizona	6,731,484	61,272	1,666	296,534	0.56%	2.72%
Colorado	5,355,866	115,467	3,870	235,936	1.64%	3.35%
Hawaii	1,419,561	11,164	152	62,534	0.24%	1.36%
Michigan	9,909,877	103,444	2,526	436,548	0.58%	2.44%
Montana	1,023,579	10,268	674	45,090	1.49%	6.56%
Nevada	2,839,099	8,055	485	125,067	0.39%	6.02%
New Jersey	8,938,175	12,396	172	393,743	0.04%	1.39%
Oregon	3,970,239	175,434	3,666	174,896	2.10%	2.09%
Rhode Island	1,055,173	6,213	288	46,482	0.62%	4.63%
Vermont	626,562	1,723	167	27,601	0.61%	9.69%
Total/ Average	41,869,615	505,436	13,666	1,844,432	0.74%	2.70%

Sources:

Arizona: unique conditions count, indicated cancer as the only debilitating medical condition. Arizona Medical Marijuana Act End of Year Report 2014, <http://azdhs.gov/documents/licensing/medical-marijuana/reports/2014/arizona-medical-marijuana-end-of-year-report-2014.pdf>, accessed on 9/17/2015.

Colorado: Medical conditions counts are not exclusive, some patients report using medical marijuana for more than one debilitating medical condition. 2014 (December) current patients with valid ID cards, https://www.colorado.gov/pacific/sites/default/files/CHED_MMJ_12_2014_MMR_Report.pdf, accessed on 9/17/2015.

Hawaii: The Office of Economic and Demographic Research was not able to obtain updated data for Hawaii. Data are for 2012 from the report "100,000 Reasons: Medical Marijuana In The Big Apple", Appendix: Methodology, New York City Comptroller John C. Liu, August 2013.

Michigan: The number of patients is as of September 2015 but the Office of Economic and Demographic Research was not able to obtain an updated breakdown by condition as of 9/25/2015, so the number of cancer patients is for FY 2012.

Montana: Medical conditions are not exclusive, a patient may have more than one condition. Patients with current enrollment as of December 2014 and patients by condition as of July 2015, <http://dphhs.mt.gov/marijuana/MMPriorRegistryInformation>, accessed on 9/17/2015.

Nevada: Medical conditions are not exclusive, a patient may have more than one condition. Nevada Department of Health and Human Services, Division of Public and Behavioral Health, Medical Marijuana Program, monthly reports, August 2015, http://dpbh.nv.gov/uploadedFiles/dpbhngov/content/Reg/MM-Patient-Cardholder-Registry/dta/Monthly_Reports/MMPAugust2015.pdf, accessed on 9/17/2015.

New Jersey: Medical conditions are not exclusive. Only terminal cancer qualifies as a condition. 2013 data. New Jersey Department of Health, 2013 Annual Report, Medicinal Marijuana Program, http://www.state.nj.us/health/medicalmarijuana/documents/annual_report.pdf, accessed on 9/17/2015.

Oregon: Conditions are not mutually exclusive; one patient may report one or more conditions. 2015 (January) current patients with valid ID cards, Oregon Health Authority, Medical marijuana Program Statistic Snapshot, https://public.health.oregon.gov/DiseasesConditions/ChronicDisease/MedicalMarijuanaProgram/Documents/ed-materials/OMMP%20Statistic%20Snapshot%20-%202011-2015%20Final_3.pdf, accessed on 9/17/2015.

Rhode Island: Medical conditions are not exclusive, a patient may have more than one condition. The total number of users is updated as of December 2014, the percentage of cancer patients is as of August 2015, Rhode Island Department of Health, e-mail dated 9/25/2015.

Vermont: Count of registered patients. Department of Public Safety, Medical Marijuana Program, email dated 9/19/2015.

- 1.3. Apply the average from #1.2. above to #1.1. above to calculate the number of Florida cancer patients that are likely to use low-THC cannabis (assuming that all of them will substitute low-THC cannabis for high-THC marijuana).

Estimated Florida Low-THC Cannabis Users with Cancer

Population Categories	UPDATED
	2017
Population with cancer	900,187
Low-THC cannabis users with cancer	6,670

2. Estimate of Florida low-THC cannabis users with epilepsy.
 2.1. Estimate the Florida epilepsy population

**Estimated Florida Population Living with Epilepsy
 (Epilepsy Prevalence)**

Population Categories	UPDATED			
	2017			
Total Population	20,434,731	20,434,731	20,434,731	20,434,731
Estimated % population with epilepsy with various prevalence rates	Informational: 0.71% (Hirtz)	Informational: 1.65% adult (DOH), 0.63% children (Russ)	Used in SB 1030 Impact: 2% (Epilepsy Foundation of Florida)	Informational: 1.65% adult (DOH), 4.5% children (CAHMI)
Population with seizures/epilepsy	145,087	294,482	408,695	456,456

Epilepsy Foundation of Florida, efof.org, email dated 10/6/2015. The Florida Department of Health 2005 Behavioral Risk Factor Surveillance System Survey. Hirtz, D., D. J. Thurman, K. Gwinn-Hardy, M. Mohamed, A. R. Chaudhuri, and R. Zalutsky. 2007. How common are the "common" neurologic disorders? *Neurology* 68(5):326-337. AHMI: National Survey of Children with Special Health Care Needs. NS-CSHCN 2009/10. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website, accessed or 10/7/2015, www.childhealthdata.org. Florida Demographic Estimating Conference, July 2015, population projection for April 1, 2017.

- 2.2. Use the average (0.96%) from 11 other states for medical marijuana users with epilepsy as a percentage of all epilepsy patients from the table below for calculations in the next steps. Assumes epilepsy rates in other states are identical to Florida rates. This is probably overestimating the epilepsy prevalence in other states.

Epilepsy/Seizures Patients Using Medical Marijuana for Selected States

A State	B Reference Year	C Population	D Total Users of Medical Marijuana	E Users of Medical Marijuana with Epilepsy/Seizures	F Estimated Epilepsy Prevalence (2% of population)	G Epilepsy Users of Marijuana		H % of Total Users of Medical Marijuana
						% of All Epilepsy Patients	% of Total Users of Medical Marijuana	
Arizona	2014	6,731,484	61,272	596	134,630	0.44%	0.97%	
Colorado	2014	5,355,866	115,467	2,619	107,117	2.44%	2.27%	
Hawaii	2012	1,419,561	11,164	48	28,391	0.17%	0.43%	
Michigan	2015	9,909,877	175,434	2,105	198,198	1.06%	1.20%	
Montana	2014	1,023,579	10,268	345	20,472	1.69%	3.36%	
Nevada	2015	2,839,099	10,119	333	56,782	0.59%	3.29%	
New Jersey	2013	8,938,175	1,585	109	178,764	0.06%	6.88%	
New Mexico	2014	2,085,572	12,647	266	41,711	0.64%	2.10%	
Oregon	2014	3,970,239	70,139	1,828	79,405	2.30%	2.61%	
Rhode Island	2014	1,055,173	6,213	139	21,103	0.66%	2.23%	
Vermont	2014	626,562	1,583	34	12,531	0.27%	2.15%	
Total/ Average		43,955,187	475,891	8,422	879,104	0.96%	1.77%	

Sources:

Arizona: Unique conditions count, indicated cancer as the only debilitating medical condition. Patients reporting multiple conditions are not considered. Arizona Medical Marijuana Act End of Year Report 2014, <http://azdhs.gov/documents/licensing/medical-marijuana/reports/2014/arizona-medical-marijuana-end-of-year-report-2014.pdf>, accessed on 9/17/2015.
 Colorado: Medical conditions counts are not exclusive, some patients report using medical marijuana for more than one debilitating medical condition. 2014 (December) current patients with valid ID cards, https://www.colorado.gov/pacific/sites/default/files/CHED_MMJ_12_2014_MMR_Report.pdf, accessed on 9/17/2015.
 Hawaii: The Office of Economic and Demographic Research was not able to obtain any updated data for Hawaii. Data are for 2012 from the report "100,000 Reasons: Medical Marijuana In The Big Apple", Appendix: Methodology, New York City Comptroller John C. Liu, August 2013.
 Michigan: The number of patients is as of September 2015 but the Office of Economic and Demographic Research was not able to obtain an updated breakdown by condition from Michigan as of 9/25/2015, so an updated number of epilepsy users was produced by applying the percent of epilepsy users (for FY 2012 from the report "100,000 Reasons: Medical Marijuana In The Big Apple", Appendix: Methodology, New York City Comptroller John C. Liu, August 2013) to the 2015 total marijuana user count.
 Montana: Medical conditions are not exclusive, a patient may have more than one condition. Patients with current enrollment as of December 2014 and patients by condition as of July 2015, <http://dphhs.mt.gov/marijuana/MMPriorRegistryInformation>, accessed on 9/17/2015.
 Nevada: Medical conditions are not exclusive, a patient may have more than one condition. Nevada Department of Health and Human Services, Division of Public and Behavioral Health, Medical Marijuana Program, monthly reports, August 2015, http://dphhs.nv.gov/uploadedFiles/dphhsvgov/content/Reg/MM-Patient-Cardholder-Registry/dta/Monthly_Reports/MMPAAugust2015.pdf, accessed on 9/17/2015.
 New Jersey: Medical conditions are not exclusive. Only terminal cancer qualifies as a condition. 2013 data. New Jersey Department of Health, 2013 Annual Report, Medicinal Marijuana Program, http://www.state.nj.us/health/medicalmarijuana/documents/annual_report.pdf, accessed on 9/17/2015.
 New Mexico: Unique count of registered active patients, patients apply under only one condition. New Mexico Department of Health, Medical Cannabis Program Statistics as of 1/2/2015, e-mail dated September 16, 2015.
 Oregon: Conditions are not mutually exclusive; one patient may report one or more conditions. 2015 (January) current patients with valid ID cards, Oregon Health Authority, Medical Marijuana Program Statistic Snapshot, https://public.health.oregon.gov/DiseasesConditions/ChronicDisease/MedicalMarijuanaProgram/Documents/ed-materials/OMMP%20Statistic%20Snapshot%20-%202015%20Final_3.pdf, accessed on 9/17/2015.
 Rhode Island: Medical conditions are not exclusive, a patient may have more than one condition. The total number of users is updated as of December 2014, the percentage of cancer patients is as of August 2015, Rhode Island Department of Health, e-mail dated 9/25/2015.
 Vermont: Count of registered patients. Department of Public Safety, Medical Marijuana Program, email dated 9/19/2015.

2.3. Apply the average from #2.2. above to #2.1. above to calculate the number of Florida epilepsy patients that are likely to use low-THC cannabis:

Estimated Florida Low-THC Cannabis Users with Epilepsy

Population Categories	UPDATED
	2017
Population with epilepsy	408,695
Low-THC cannabis users with epilepsy	3,915

3. Estimate of Florida low-THC cannabis users with muscle spasms.

Below is a summary of muscle spasms users of marijuana from 11 states.

Muscle Spasms Users of Medical Marijuana for Selected States

UPDATED					
A	B	C	D	E	F
State	Reference Year	Population	Total Users of Medical Marijuana	Users of Medical Marijuana with Muscle Spasms	Muscle Spasm Users as % of Total Users of Medical Marijuana
Arizona	2014	6,731,484	61,272	699	1.14%
Colorado	2014	5,355,866	115,467	17,644	15.28%
Hawaii	2012	1,419,561	11,164	48	0.43%
Michigan	2015	9,909,877	175,434	32,455	18.50%
Montana	2014	1,023,579	10,268	842	8.20%
Nevada	2015	2,839,099	10,119	2,405	23.77%
New Jersey	2013	8,938,175	1,585	623	39.31%
New Mexico	2014	2,085,572	12,647	417	3.30%
Oregon	2014	3,970,239	70,139	17,916	25.54%
Rhode Island	2014	1,055,173	6,213	724	11.66%
Vermont	2014	626,562	1,583	77	4.86%
Total/ Average		43,955,187	475,891	73,850	15.52%

Sources:

Arizona: Unique conditions count, indicated cancer as the only debilitating medical condition. Patients reporting multiple conditions are not considered. Arizona Medical Marijuana Act End of Year Report 2014, <http://azdhs.gov/documents/licensing/medical-marijuana/reports/2014/arizona-medical-marijuana-end-of-year-report-2014.pdf>, accessed on 9/17/2015.

Colorado: Medical conditions counts are not exclusive, some patients report using medical marijuana for more than one debilitating medical condition. 2014 (December) current patients with valid ID cards, https://www.colorado.gov/pacific/sites/default/files/CHED_MMJ_12_2014_MMR_Report.pdf, accessed on 9/17/2015.

Hawaii: The Office of Economic and Demographic Research was not able to obtain any updated data for Hawaii. Data are for 2012 from the report "100,000 Reasons: Medical Marijuana In The Big Apple", Appendix: Methodology, New York City Comptroller John C. Liu, August 2013.

Michigan: The number of patients is as of September 2015 but the Office of Economic and Demographic Research was not able to obtain an updated breakdown by condition from Michigan as of 9/25/2015, so an updated number of epilepsy users was produced by applying the percent of muscle spasm and multiple sclerosis users (for FY 2012 from the report "100,000 Reasons: Medical Marijuana In The Big Apple", Appendix: Methodology, New York City Comptroller John C. Liu, August 2013) to the 2015 total marijuana user count.

Montana: Medical conditions are not exclusive, a patient may have more than one condition. Patients with current enrollment as of December 2014 and patients by condition as of July 2015, <http://dphhs.mt.gov/marijuana/MMPPriorRegistryInformation>, accessed on 9/17/2015.

Nevada: Medical conditions are not exclusive, a patient may have more than one condition. Nevada Department of Health and Human Services, Division of Public and Behavioral Health, Medical Marijuana Program, monthly reports, August 2015, http://dphh.nv.gov/uploadedFiles/dphhngov/content/Reg/MM-Patient-Cardholder-Registry/dta/Monthly_Reports/MMPAugust2015.pdf, accessed on 9/17/2015.

New Jersey: Medical conditions are not exclusive. Data are for intractable skeletal spasticity for 2013. This condition is the largest reported condition in New Jersey. New Jersey Department of Health, 2013 Annual Report, Medicinal Marijuana Program, http://www.state.nj.us/health/medicalmarijuana/documents/annual_report.pdf, accessed on 9/17/2015.

New Mexico: Unique count of registered active patients, patients apply under only one condition. Muscle spasms is not a specified condition, data are a sum of patient counts reporting ALS, multiple sclerosis, and spinal cord damage with intractable spasticity. New Mexico Department of Health, Medical Cannabis Program Statistics as of 1/2/2015, e-mail dated September 16, 2015.

Oregon: Conditions are not mutually exclusive; one patient may report one or more conditions. 2015 (January) current patients with valid ID cards, Oregon Health Authority, Medical marijuana Program Statistic Snapshot, https://public.health.oregon.gov/DiseasesConditions/ChronicDisease/MedicalMarijuanaProgram/Documents/ed-materials/OMMP%20Statistic%20Snapshot%20-%202015%20Final_3.pdf, accessed on 9/17/2015.

Rhode Island: Medical conditions are not exclusive, a patient may have more than one condition. The total number of users is updated as of December 2014, the percentage of cancer patients is as of August 2015, Rhode Island Department of Health, e-mail dated 9/25/2015.

Vermont: Count of registered patients. As muscle spasms is not an approved condition, counts are for multiple sclerosis. Department of Public Safety, Medical Marijuana Program, email dated 9/19/2015.

Florida Low-THC Marijuana Users with Muscle Spasms

	UPDATED		
	Low	Middle	High
Florida estimated marijuana users (FIEC for proposed constitutional amendment 15-01)	450,000	450,000	450,000
% of medical marijuana registrants in 11 states that have muscle spasms	1.14%	15.52%	39.31%
Low-THC cannabis users with muscle spasms	5,134	69,832	176,877

Note: Muscle spasm shares are as follows: Arizona: 1.14% (lowest of the 11 states), average for the 11 states: 15.52%, New Jersey: 39.31% (highest of the 11 states). Percentages are calculated by dividing the total number of muscle spasm reported condition by the total number of users (users often report more than one condition).

Sources: Financial Impact Estimating Conference on proposed constitutional amendment "Use of Marijuana for Debilitating Medical Conditions" 15-01, Florida Legislature, Office of Economic and Demographic Research.

4. Low-THC cannabis price and dosage information.
 Source: Realm of Caring Foundation.

Dosage for epilepsy 2-6 mg/lb of body weight
 Assumed average dosage for epilepsy 3 mg/lb of body weight
 Assumed average dosage for muscle spasms 3 mg/lb of body weight
 Assumed average dosage for cancer 10 mg/lb of body weight
 Assumed average body weight for all indications 100 lbs

Low-THC cannabis is typically taken daily.

Daily amounts consumed for 1 person, 100 lb body weight	Low-THC cannabis Dosage (mg/day)
Cancer	1,000
Epilepsy	300
Muscle Spasms	300

Special Discount Prices in Colorado

Product	Price per mg (\$)
Charlotte's Web (Realm of Caring) Low-THC cannabis for epilepsy and muscle spasms	0.05
High-THC for cancer	0.10

Note: The prices above are discounted prices offered to Realm of Caring Foundation members.

Source: Realm of Caring Foundation, Colorado Springs, Colorado, email dated 10/8/2015 and CW Botanicals, <https://cwbotanicals.com>.

**For Information Only:
 Retail Prices in Colorado**

Product	Price per mg (\$)
Charlotte's Web Low-THC cannabis for epilepsy and muscle spasms	0.17-0.25

Note: The prices above are discounted prices are retail prices.

5. Florida Low-THC cannabis use and cost estimates: cancer and seizures.
 Assume daily usage, year-round at dosages and prices from #4 above

Cancer & Seizures: Estimated Potential Low-THC Cannabis Annual Use and Cost

A	UPDATED		D	E	F
	B	C			
	Prevalence (Number of Living Persons with Condition) in 2017	Number of living persons with condition Expected To Use Low-THC cannabis in 2017	Cannabis dosage (mg/day)	Low-THC cannabis price (\$/mg)	Annual Cost per Person (Assumes Daily Usage) (D*E*365) (\$)
Cancer	900,187	6,670	1,000	0.10	36,500
Seizures (epilepsy)	408,695	3,915	300	0.05	5,475
Subtotal	1,308,882	10,585			

6. Florida Low-THC cannabis sales and sales tax revenues estimates: cancer and seizures

Assume only a share of patients with the specified conditions will use low-THC cannabis and that share is determined by applying averages of users with the respective conditions in the medical marijuana registries in eight other states.

Cancer & Seizures: Estimated Potential Low-THC Cannabis Sales and Sales Tax Revenues

A	UPDATED		D	E	F	G	H
	B	C					
	Prevalence (Number of Living Persons with Condition) in 2017	Number of living persons with condition Expected To Use Low-THC cannabis in 2017	Cannabis dosage (mg/day)	Low-THC cannabis price (\$/mg)	Annual Cost per Person (Assumes Daily Usage) (D*E*365) (\$)	Statewide Sales Total (C*F) (\$)	Potential Sales Tax Revenues (G*6%) (\$)
Cancer	900,187	6,670	1,000	0.10	36,500	243,455,000	14,607,300
Seizures (epilepsy)	408,695	3,915	300	0.05	5,475	21,436,705	1,286,202
Subtotal	1,308,882	10,585				264,891,705	15,893,502

7. Florida Low-THC cannabis use and cost estimates: muscle spasms.
Assume daily usage, year-round at dosages and prices from #4 above

Muscle Spasms: Estimated Potential Low-THC Cannabis Annual Use and Cost

		UPDATED			
A	B	C	D	E	F
	Prevalance (Number of Living Persons with Condition) in 2015	Number of living persons with condition Expected To Use Low-THC cannabis in 2017	Cannabis dosage (mg/day)	Low-THC cannabis price (\$/mg)	Annual Cost per Person (Assumes Daily Usage) (D*E*365) (\$)
Muscle spasms (ALS, MS, Parkinson's)	N/A				
Low	N/A	5,134	300	0.05	5,475
Middle	N/A	69,832	300	0.05	5,475
High	N/A	176,877	300	0.05	5,475
Subtotal	0	251,843			

8. Florida Low-THC cannabis sales and sales tax revenues estimates: muscle spasms.

Assume only a share of patients with the specified conditions will use low-THC cannabis and that share is determined by applying averages of users with the respective conditions in the medical marijuana registries in eight other states.

Muscle Spasms: Estimated Potential Low-THC Cannabis Sales and Sales Tax Revenues

	NEW						
A	B	C	D	E	F	G	H
	Prevalance (Number of Living Persons with Condition) in 2015	Number of living persons with condition Expected To Use Low-THC cannabis in 2017	Cannabis dosage (mg/day)	Low-THC cannabis price (\$/mg)	Annual Cost per Person (Assumes Daily Usage) (D*E*365) (\$)	Statewide Sales Total (C*F) (\$)	Potential Sales Tax Revenues (G*6%) (\$)
Muscle spasms (ALS, MS, Parkinson's)	N/A						
Low	N/A	5,134	300	0.05	5,475	28,106,823	1,686,409
Middle	N/A	69,832	300	0.05	5,475	382,331,117	22,939,867
High	N/A	176,877	300	0.05	5,475	968,401,420	58,104,085

9. Add cancer, seizures, and muscle spasm sales tax estimates from #6 & #8. There are no range estimates for cancer and seizures. The estimates below differ by the number of muscle spasm estimates only.

**Original Table in CS/CS/SB1030 Impact Analysis
(Revenue Estimating Conference Dated 5/29/2014)
Cancer, Seizures, & Muscle Spasms: Sales Tax Revenues (\$)**

	Low	Middle	High
Cancer	3,879,461	3,879,461	3,879,461
Seizures (epilepsy)	1,107,853	1,107,853	1,107,853
Muscle spasms	2,217,375	21,434,625	42,425,775
Total	7,204,689	26,421,939	47,413,089

**Updated Table (10/12/2015)
Cancer, Seizures, & Muscle Spasms: Sales Tax Revenues (\$)**

	UPDATED		
	Low	Middle	High
Cancer	14,607,300	14,607,300	14,607,300
Seizures (epilepsy)	1,286,202	1,286,202	1,286,202
Muscle spasms	1,686,409	22,939,867	58,104,085
Total	17,579,912	38,833,369	73,997,587