

# Legalization of “smokable” medical marijuana was associated with significantly increased THC use per certified patient in the Florida medical marijuana program: An interrupted time series analysis

## Introduction

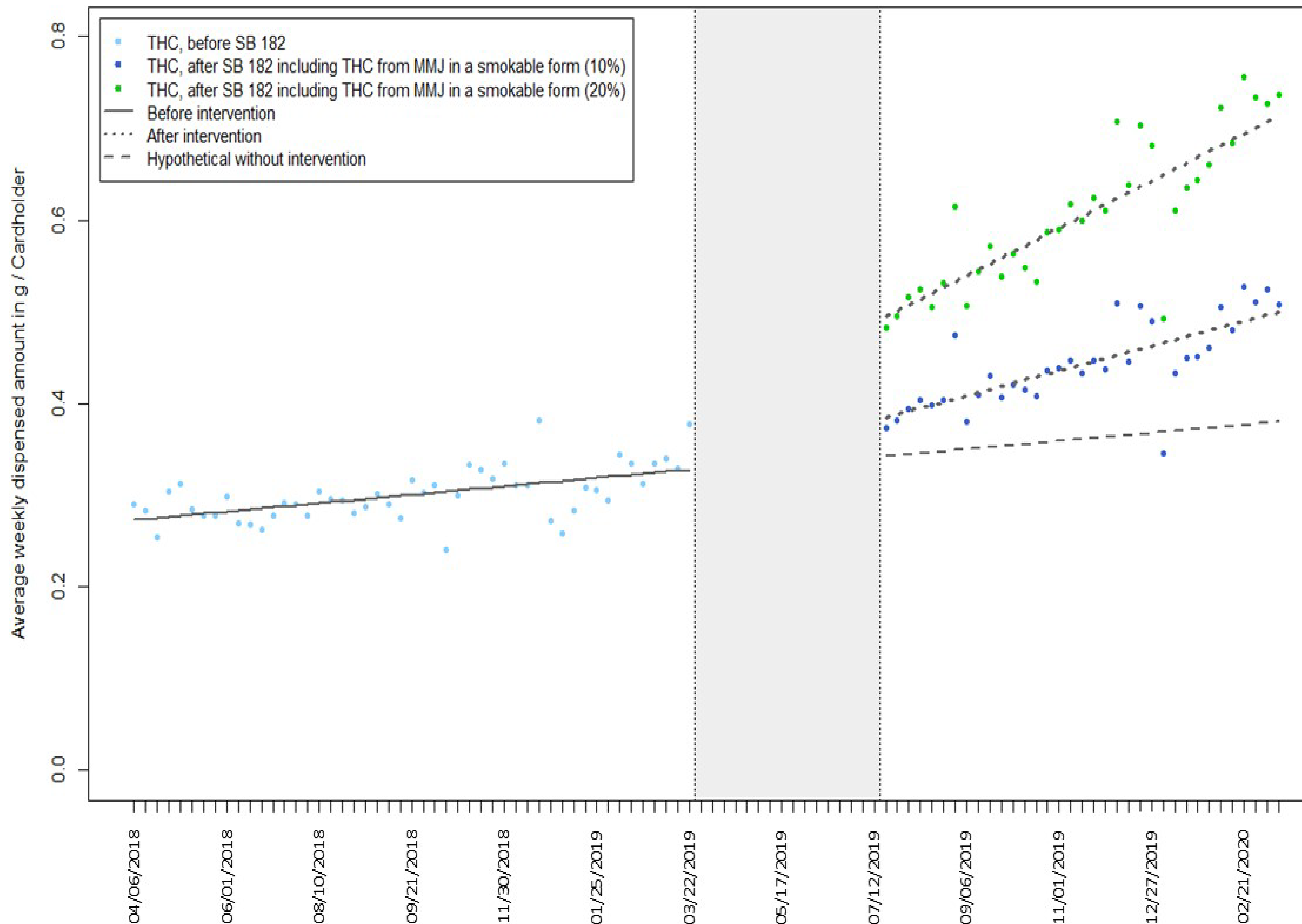
- On March 18, 2019, Florida senate Bill 182 (SB 182) authorized cannabis flower for smoking. Higher concentrations of Tetrahydrocannabinol (THC) are typical for smokable medical marijuana (MMJ) products.
- Objective: To assess the effect of SB182 on the weekly dispensed amount of THC per certified MMJ patient in Florida**

## Methods

- Dataset: Florida Department of Health Office of Medical Marijuana Use (OMMU) weekly reports from 04/06/2018 until 3/13/2020
- We calculated the weekly amount of dispensed THC per certified patient by summing the total weekly amount of THC in dispensed MMJ across all non-smokable and smokable routes of administration in the pre- and post-periods. These totals were divided by total certified MMJ patients (cardholder) in that week.
- THC amounts in smokable MMJ products in Florida were calculated using averages of THC concentrations in smokable products (10 % and 20% ) based on published estimates from other states with MMJ programs.
- We conducted an interrupted time series with a phase-in period, by fitting a generalized least squares linear model to estimate changes in the overall trend and changes in the level after SB 182.

## Results

- Scenario with 10 % average THC in smokable products:**
  - SB 182 was associated with a level increase of 35.1 mg (95% CI: 4.85-56.34 mg) in the weekly dispensed amount of THC per MMJ patient, which represents an increase of roughly 10.7%.
  - SB 182 was also associated with an increased trend of 2.23 mg per week (95% CI: 1.16-3.31 mg).
- Scenario with 20 % average THC in smokable products:**
  - SB 182 was associated with a level increase of 138.4 mg (95% CI: 102.14-174.75 mg) in the weekly dispensed amount of THC per MMJ patient, which represents an increase of 42.2%.
  - SB 182 was associated with a trend increase of 5.62 mg (95% CI: 4.33-5.61 mg) per week.



**Figure 1: Average weekly dispensed amount of THC in gram per MMJ cardholder before and after the inclusion of smokable MMJ in the Florida MMJ program**

The inclusion of smokable MMJ in the Florida MMJ program was associated with a significant increase of the weekly dispensed amount of THC per certified MMJ patient, by increasing the level, as well as the overall trend following law implementation.

Sebastian Jugl<sup>1,2,3</sup>, Ruba Sajdeya<sup>3,4</sup>, Melanie Buhlmann<sup>5</sup>, Robert L. Cook<sup>3,4</sup>, Joshua D. Brown<sup>1,2,3</sup>, Almut G. Winterstein<sup>1,2,3</sup>, Amie Goodin<sup>1,2,3</sup>

## Affiliations

- Department of Pharmaceutical Outcomes and Policy, University of Florida
- Center for Drug Evaluation & Safety (CoDES)
- Consortium for Medical Marijuana Clinical Outcomes Research
- Department of Epidemiology, University of Florida
- Department of Statistics, University of Florida

\* Contact corresponding author  
s.jugl@ufl.edu

Contact MMJ Outcomes  
mmj.outcomes@cop.ufl.edu  
<https://mmjoutcomes.org/>