

Characterization of Medical Marijuana Product Exposures Reported to the National Poison Data System

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Introduction

- Since 1998, 23 states have enacted laws allowing distribution of medical marijuana
- Most available forms are tetrahydrocannabinol (dronabinol), cannabidiol, and nabilone (a synthetic cannabinoid)
 - These compounds are administered as tablets, oils, and edible products



- Adverse effects specifically related to medical marijuana products have not been well characterized
- Purpose of Project:** Characterize medical marijuana exposures

Methods

- Analyzed marijuana calls reported to the National Poison Data System (NPDS) from January 2012 - August 2014
- Queried human single-substance exposures coded to

Product Description	Product Codes
Cannabidiol	783694
Cannabidiol/tetrahydrocannabinol (Sativex)	6749042
Dronabinol (Marinol)	6739051, 6862902, 7363180, 6863412, 6863420, 7363198, 6863131, 6863024, 7363346, 6862894, 6380284, 5199644, 3440503, 6380292, 5199652, 3440536, 6380300, 5744382, 3440528
Medical marijuana	7209160, 3592337, 6738384, 5187863, 7162400, 7049441
Nabilone (Cesamet)	3006974

- Calls were analyzed by state, exposure route, age, gender, clinical effect, therapies, and level of health care facility care
- Rate of calls expressed in terms of estimated 2013 United States census data

Results

- 98 total calls with 93% from ingestions
- Top 5 states by medical marijuana exposure frequency:

State	Exposures per Million
Maine	1.51
Washington	1.43
Alabama	1.03
Michigan	0.81
Colorado	0.76

- Most calls occurred in pediatric populations:

Age Group (y)	Exposures per Million
0-5	1.17
6-12	0.03
13-19	0.47
20-29	0.34
30-39	0.17
40-49	0.33
50-59	0.21
60-69	0.12
70-79	0.11
>80	0.17

- Top 5 clinical effects:

Effects	N (%)
Drowsiness/lethargy	29 (30)
Confusion	13 (13)
Tachycardia	11 (11)
Dizziness/vertigo	10 (10)
Nausea	7 (7)

- Top 5 therapies performed:

Therapy	N (%)
Intravenous Fluids	12 (12)
Charcoal, single dose	4 (4)
Benzodiazepine	3 (3)
Sedation (other)	3 (3)
Antiemetics	2 (2)

- Severe toxicity:

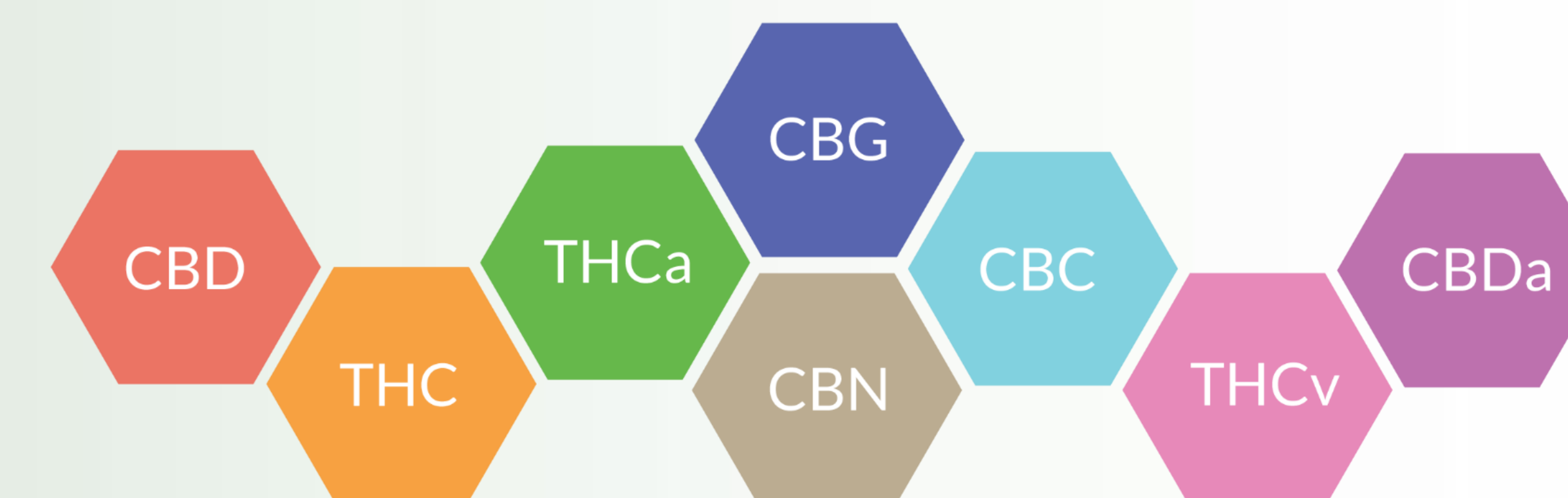
- One 12-month old child was intubated after ingestion of dronabinol
- 14 cases were admitted to the intensive care unit (64% pediatric)

Discussion

- US medical marijuana exposure:
 - 52% in states with medical marijuana laws
 - 48% in states without medical marijuana law
- Majority of exposures occurred in pediatric population - ages not typically associated with illnesses with indications for medical marijuana treatment
 - Cannabidiol has been used for childhood epilepsy although no current FDA indication exists
 - Age 0-5 year-old exposures were likely unintentional exploratory (20 calls, 71%)
 - Age 13-19 year-old exposures were likely intentional abuse/misuse (9 calls, 64%)
- Clinical effects were consistent with the known marijuana intoxication profile

Limitations

- NPDS is a passive reporting system
- Many calls lacked dosing information
- Single substance exposure allows for characterization of effects but less reliable marker of overall exposed population



Disclosure

- Authors of this report have no financial conflict of interest

