

# Data-Based Insights on Cannabis Use Disorder Treatment and Recovery: Implications for Recovery Courts

**Cannabis Public Policy Consulting**

*Dr. Michael Sofis – Director of Research*



New England (HHS Region 1)

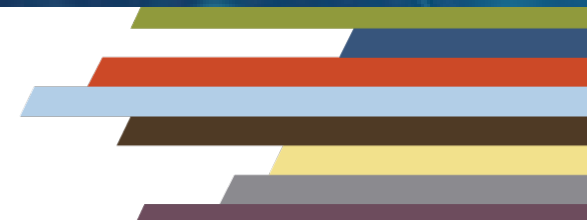
**ATTC**

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New England Association of  
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Christine McKenna,  
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# Disclosures

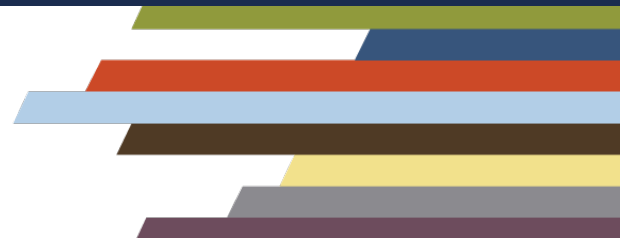
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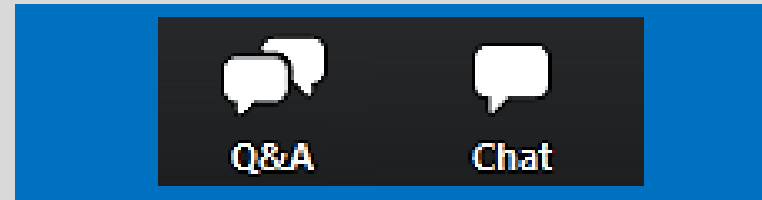
# New England Association of Recovery Court Professionals

- The New England Association of Recovery Court Professionals is a nonprofit consortium of drug treatment court professionals from six states (CT, RI, MA, NH, VT, ME)
- We exist to: Address critical current and emerging issues confronting drug treatment courts through high-quality training and TA
- Promote regional coordination to address challenges common in New England drug treatment courts and develop responsive pro-active policies and practices
- Provide a central forum and repository of resources relevant to the development, operation, and administration of drug treatment courts
- [www.NEARCP.org](http://www.NEARCP.org)



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# Interactive Zoom Webinar Controls



- Questions & Answers - Q&A
- Chat Room



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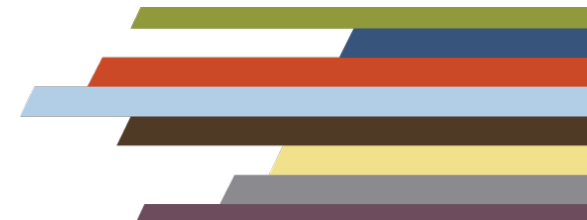
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# PRESENTER

**Dr. Michael Sofis**

Director of Research

Director of Behavioral Science



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# Risks of Regular Cannabis Use & Cannabis Use Trends

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## Product Types

Flower



Edibles



Concentrates



## Key Cannabis Use Characteristics

- THC potency (1-99%)
- Quantity
  - E.g., milligrams, grams, ounces
- Frequency of use
  - # days in past month
  - # times/occasions per day

# Cannabis Prevalence and Trends

- Prevalence of daily and past-month cannabis use and THC potency doubled between 2010-2020
- As many as 3 in 10 who use cannabis in past month meet criteria for cannabis use disorder (CUD)
  - Corresponds to as many as 50-80 million Americans
  - Associated with higher risk of other SUDs, mood disorders, psychosis, and worse long-term cognitive and occupational outcomes
- Youth use
  - Increased such that 1 in 7 youth used in past year
  - Highest ever past year, past month, and daily use since data first collected in 1988

# Cannabinoids and Overview of Characteristics of Use

- Tetrahydrocannabinol (or delta-9 THC) is primary psychoactive compound in cannabis
  - Expressed through endocannabinoid system
  - Mostly impacts cannabinoid type 1 (CB1) receptors
  - Endocannabinoid system interacts with many other systems, neurotransmitters
  - “Mechanisms” of cannabis use on many outcomes still underexplored
- Cannabidiol (CBD)
  - Expressed through endocannabinoid system indirectly through both CB1 and CB2 receptors
  - CBD-only use carries very low risks of harm



# Risks of Acute Cannabis Use: A Background

- **Tetrahydrocannabinol (THC) is the key psychoactive compound in cannabis which produces acute symptoms including...**
  - *Difficulty sustaining or diverting attention to two tasks at once*
  - *Motor impairment*
  - *Anger and irritability for some*
  - *Paranoia*
  - *Acute Psychosis*
- **Neurobiological mechanisms not fully known**
  - *Mostly impact functioning through cannabinoid type 1 and type 2 receptors*
  - *Interact with other neurotransmitter systems*
  - *Highly sensitive to tolerance (habituation)*

# Non-Acute Risks of Cannabis Use

- **More frequent, higher quantity, and high-potency cannabis use increases risks for...**
  - *Cannabis use disorder (CUD) and other substance use disorders (SUDs)*
  - *Mood disorders (MD, GAD, Psychosis, etc.)*
  - *Worse cognitive and occupation/educational outcomes*
  - *Worse episodic and working memory*
- **Age of first cannabis use linked to worse long-term outcomes in...**
  - *Education/work outcomes*
  - *Cognitive outcomes*
  - *Developmental outcomes*
- **Use during pregnancy associated with developmental problems for child such as...**
  - *Low birth weight*
  - *Emotional/anger issues*
  - *Cognitive deficits*



# Legalization Does Not Necessarily Increase Risks of Harms

## *Average Values by State Cannabis Law in U.S. in 2022*

Cannabis Law	Avg. Age of First Use	Avg. DUIC Days	Avg. THC Potency
Med-Only	17.00	4.11	29.81
Adult Use	16.97	4.40	30.65
Illegal/Low-THC	16.65	5.02	33.93

**Take-home:** Cannabis use and related risks of harms are rising considerably across the U.S. Europe, and much of the world regardless of legalization statuses



# **Efficacy of Drug Courts Among Those Using Cannabis**

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# Most Evidence Supports Efficacy of Drug Courts

- **Recidivism**
  - Review of 154 drug court evaluation studies showed 38-50% reduction in recidivism up to three years later
  - Another review of 96 drug court evaluation studies showed 8% reduction of recidivism using strong methodological approaches
- **Substance use and substance use disorder (SUD) outcomes**
  - It typically helps reduce substance use
- **Considerable evidence drug courts are moderately to highly cost effective**
  - \$20,000 per participant in Virginia system

[Drug Court Effectiveness and Efficiency: Findings for Virginia: Alcoholism Treatment Quarterly: Vol 34, No 2 \(tandfonline.com\)](#)

[Drug Treatment Courts: A Quantitative Review of Study and Treatment Quality - Leticia Gutierrez, Guy Bourgon, 2012 \(sagepub.com\)](#)

[The Multi-site Adult Drug Court Evaluation: The Impact of Drug Courts \(Pre-Production\) \(urban.org\)](#)



# Drug Court Efficacy

## Challenges to Effectiveness

- Antisocial personality disorder
- Violent offenses
- Cannabis use as primary substance
- Early-life emotional/behavioral problems, and criminality
- Younger age

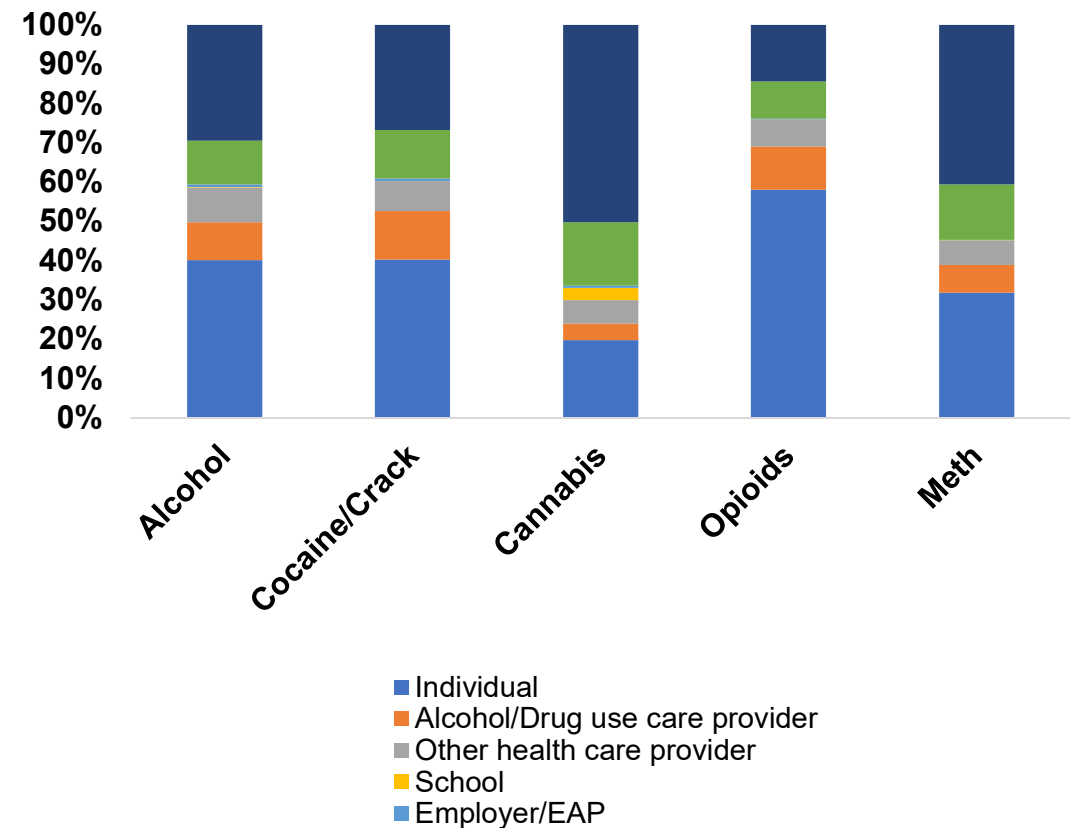
## Enhancers of Effectiveness

- Longer SUD treatment
- CBT-based treatment
- Being employed
- Higher levels of educational attainment
- Positive attitudes towards judges

# Why Might Drug Court Outcomes Be Worse for Those Whose Primary Substance is Cannabis?

- **Impact of decriminalization / legalization of cannabis**
  - Generally associated with reductions in racial disparities in cannabis-related arrests
  - However, not in all states, which may impact worse recidivism rates see for those whose primary substance is cannabis

**% of Patients for Each Referral Source by Primary Substance**

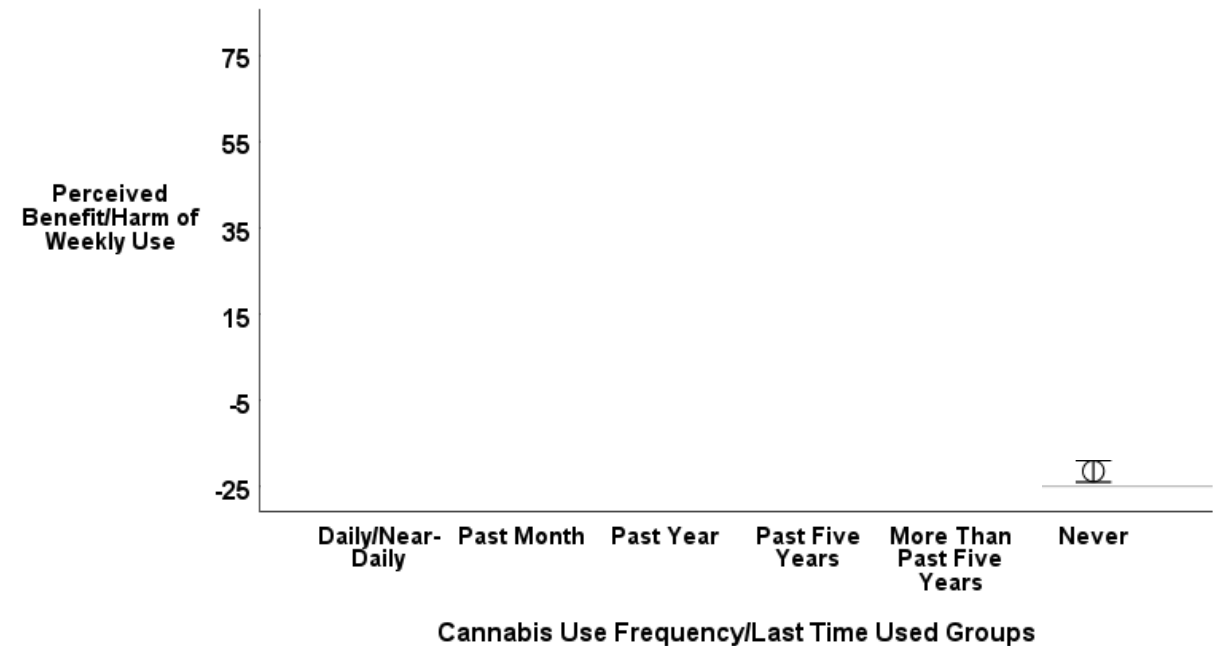


[Racial Disparities in the Wake of Cannabis Legalization: Documenting Persistence and Change - Dale W. Willits, Brittany Solensten, Mikala Meize, Mary K. Stohr, David A. Makin, Craig Hemmens, Duane L. Stanton, Nicholas P. Lovrich, 2022 \(sagepub.com\)](#)

[Cannabis decriminalization and racial disparity in arrests for cannabis possession - ScienceDirect](#)

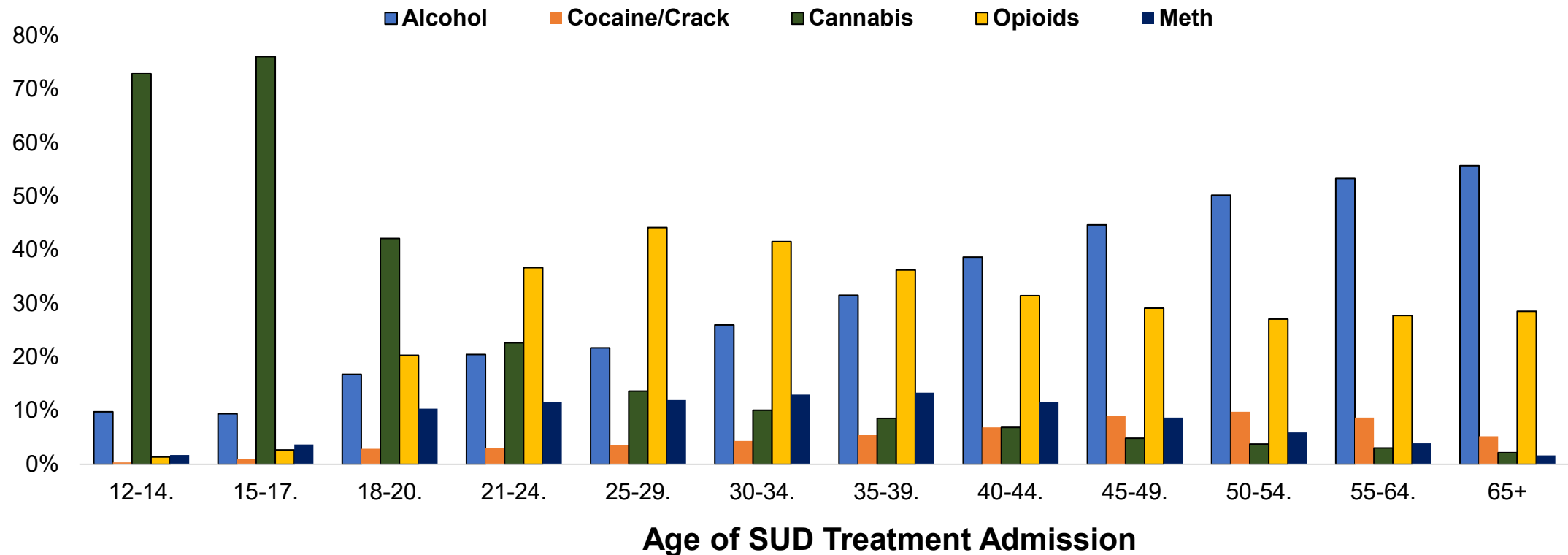
# Why Might Drug Court Outcomes Be Worse for Those Whose Primary Substance is Cannabis (continued)?

- **Cannabis is the new lowest common denominator of substance use**
  - Daily and past-month prevalence of use has doubled in last decade
  - Extremely rarely is complete substance use abstinence achieved
  - Cannabis is perceived safer and less risky than other psychoactive substances even by the American public
  - Cannabis is perceived to be more therapeutic than it likely is for many conditions
  - Medical cannabis use is increasingly protected



# Youth Treatment Admissions by Substance and Age

% of Treatment Admissions by Primary Substance and Age of Admission



# Problematic Cannabis Use & Cannabis Use Disorder (CUD)

The Good, the Bad, and the Ugly

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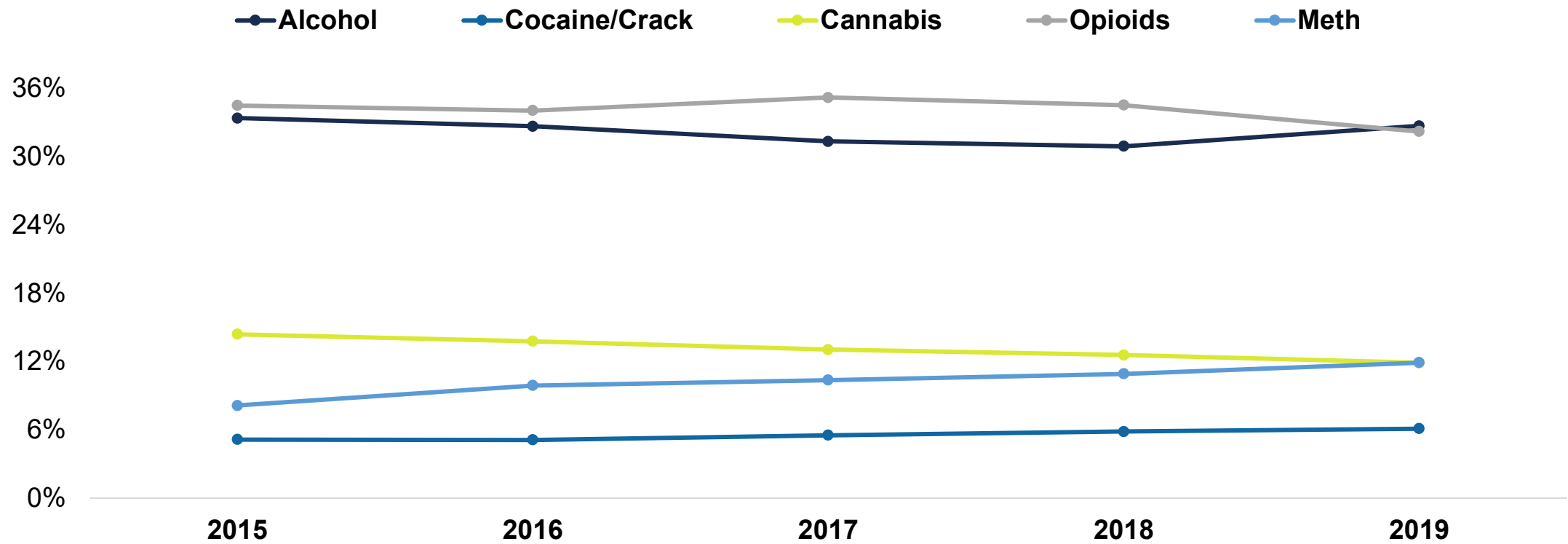
# What is Cannabis Use Disorder (CUD)?

## DSM-V CUD Criteria

#	At least 2 of below symptoms, in conjunction with significant distress or impairment in functioning
1	Cannabis use for at least one year
2	Difficulty controlling amount used
3	Repeated failed attempts to reduce or quit
4	Abnormal amount of time spent accessing, using, or recovering from effects
5	Cannabis cravings and/or preoccupations
6	Continued use despite negative consequences (e.g., work productivity, relationships)
7	Other important activities overtaken by cannabis use
8	Cannabis used in dangerous contexts
9	Continued use despite physical health issues from use
10	Development of tolerance to cannabis (THC)
11	Withdrawal symptoms

# Declining CUD Treatment Admissions

% of Treatment Admissions by Primary Substance<sup>1</sup>



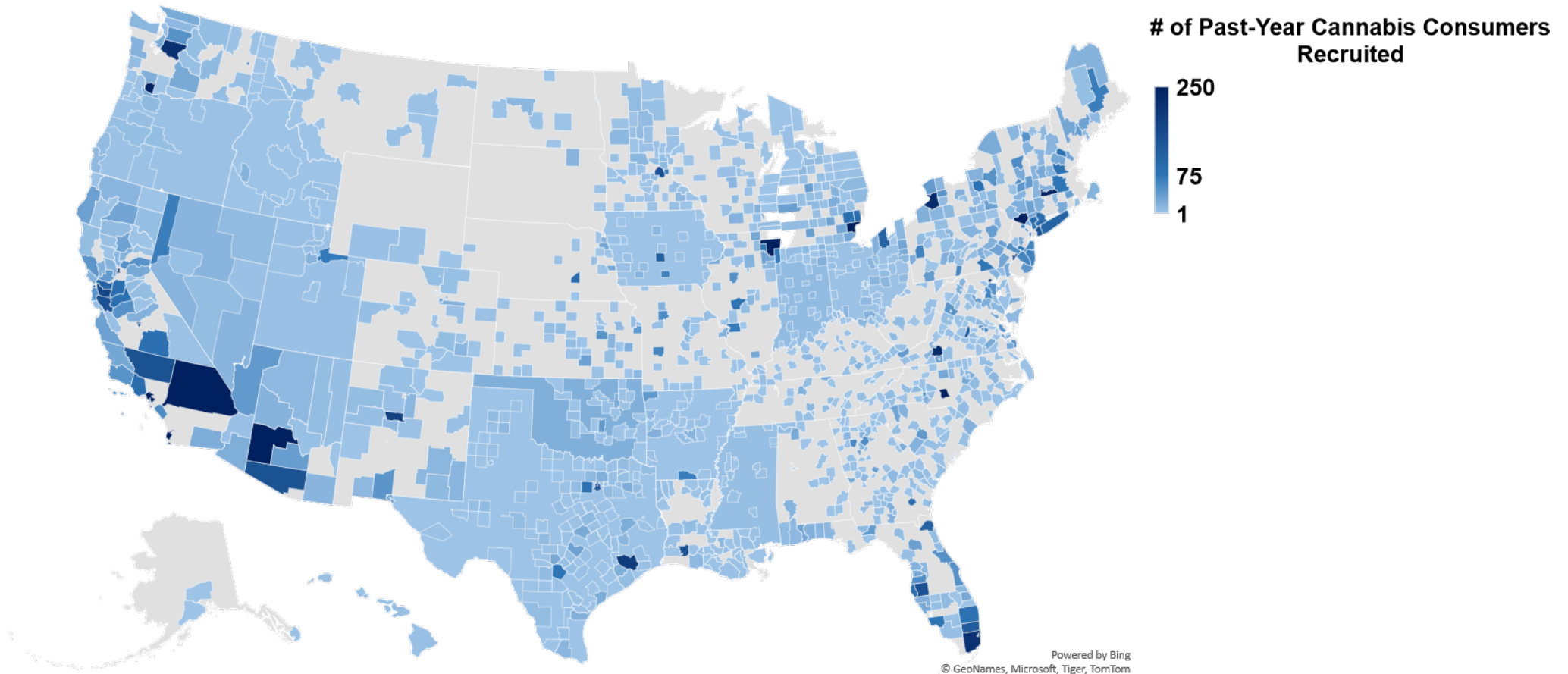
# Updating the CUD Picture

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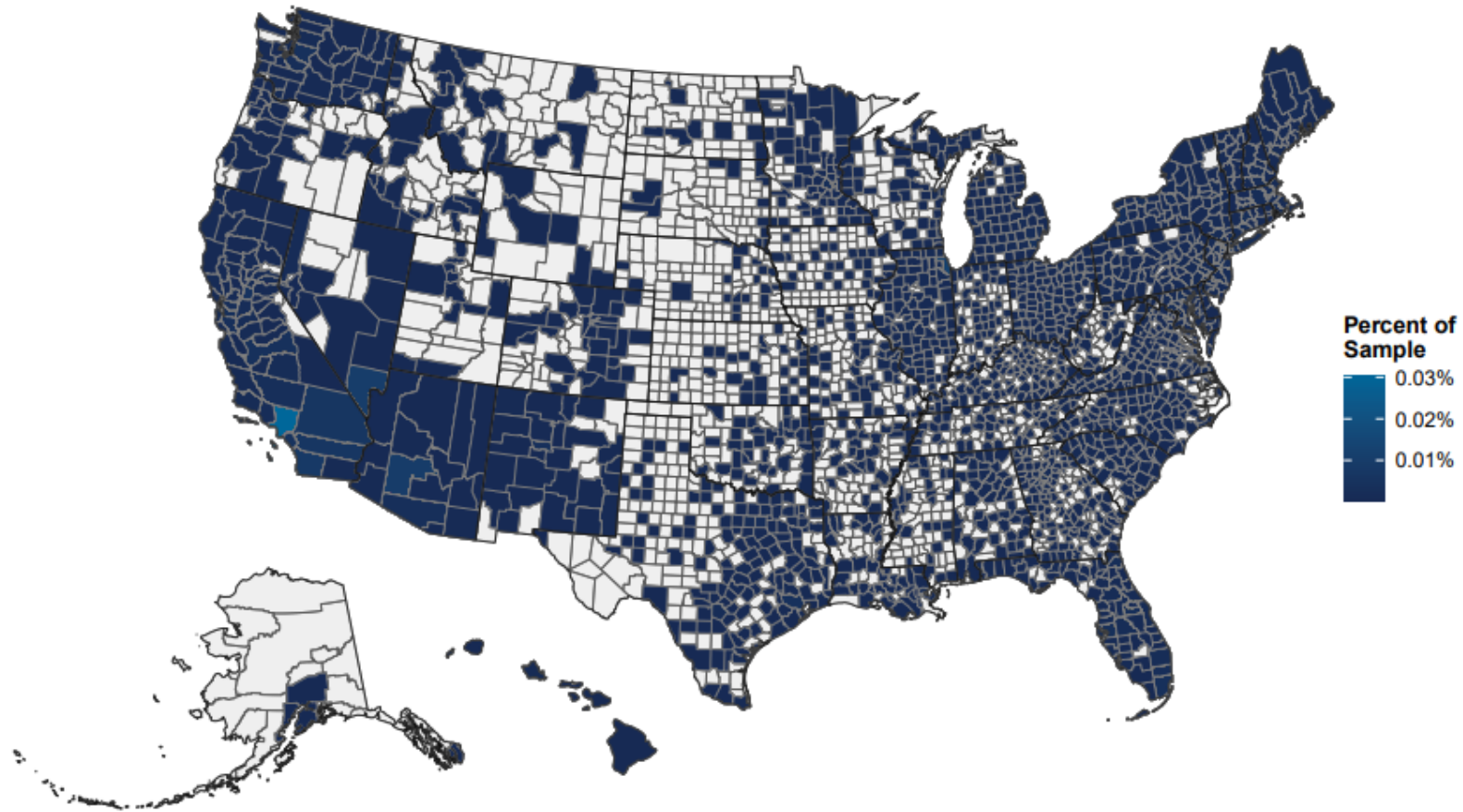
# Regulatory Determinants of Cannabis Outcomes Survey (RDCOS)

**Regulatory Determinants of Cannabis Outcomes Survey (RDCOS)**  
*Participants Who Use Cannabis At Least Annually Who Completed RDCOS in 2022 by County*



# Regulatory Determinants of Cannabis Outcomes Survey (RDCOS)

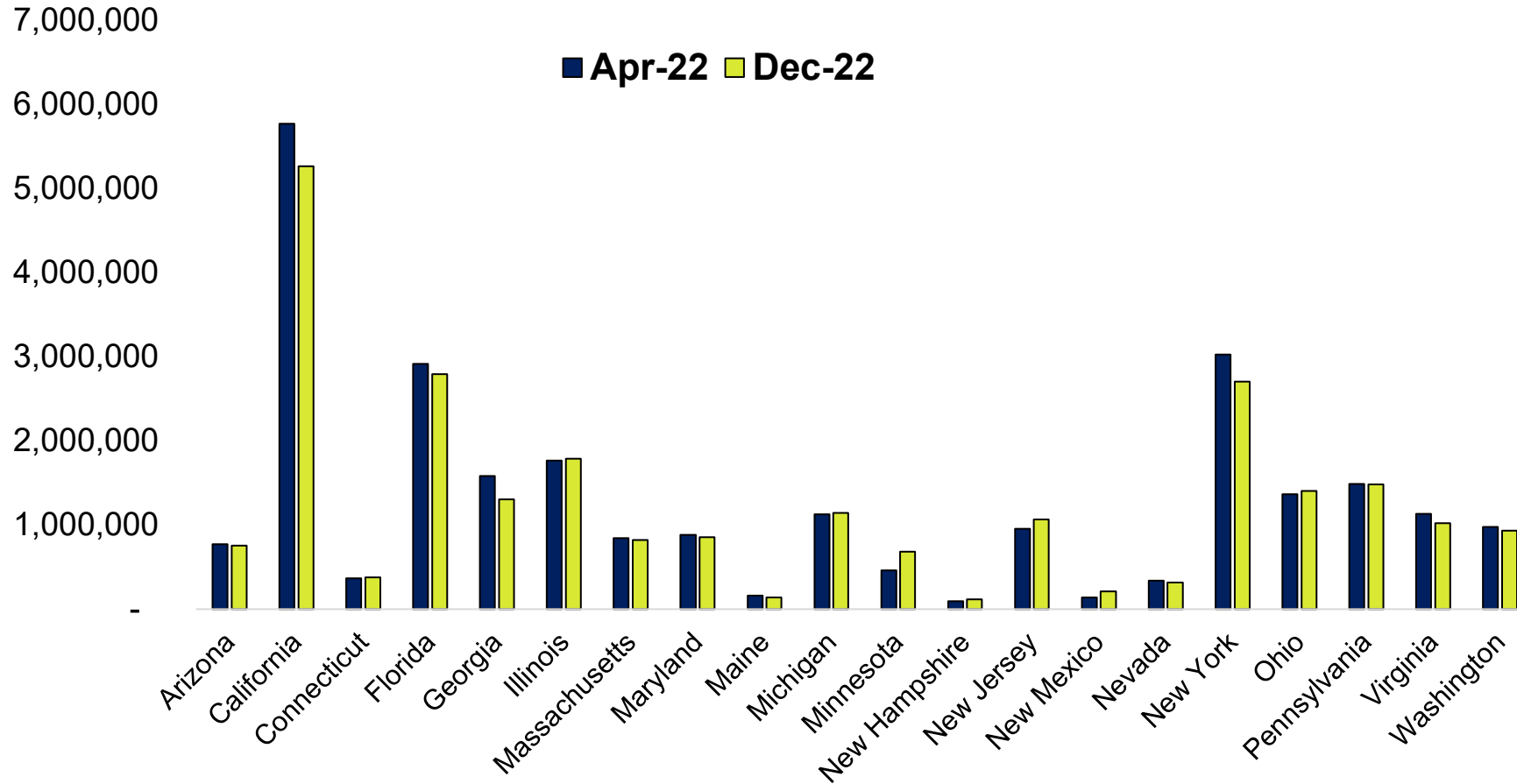
RDCOS Sampling (24,687 respondents)



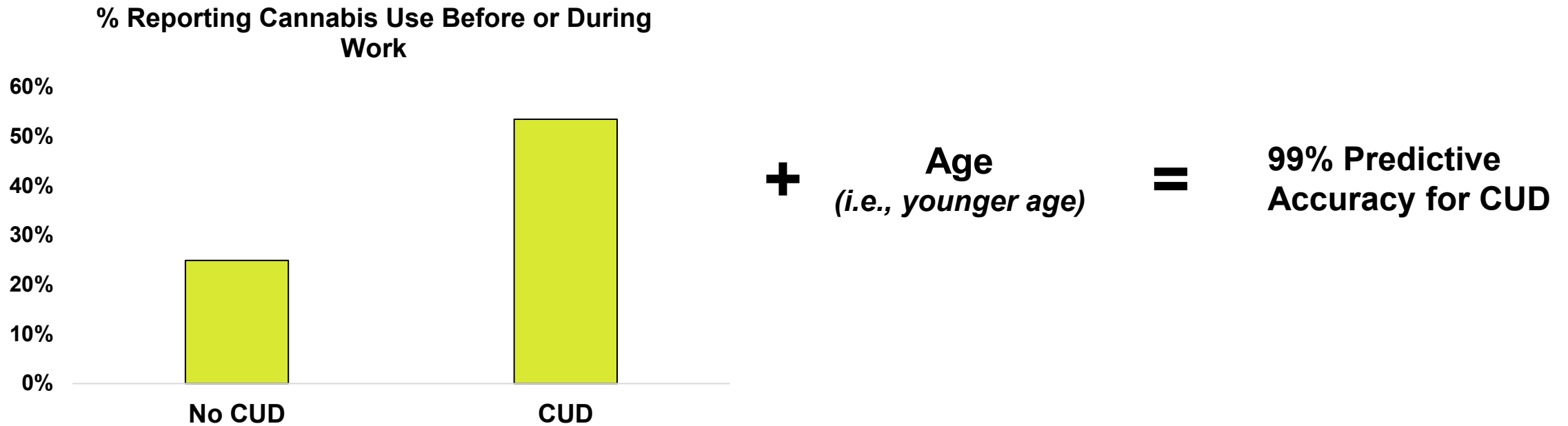
# Recent Trends in CUD Prevalence

*Regulatory Determinants of Cannabis Outcomes Survey (RDCOS)*

**Total Estimated Residents 18+ with CUD by State in April & December of 2022**



# Overlap Between CUD and Individual Barriers in Drug Court



[Brief interventions for cannabis use in emerging adults: A systematic review, meta-analysis, and evidence map - ScienceDirect](#)

# CUD Treatments in Detail

- **Cognitive Behavioral Therapy**
  - Therapist led skills development focused on goal-setting, reframing biases/distortions, problem-solving daily issues, etc.
- **Contingency Management**
  - Money or other incentives provided contingent on reductions in use or abstinence
- **Peer Recovery Specialist Support/Modeling**

# CUD Treatment Approaches (Overview)

- **8-12 Week Integrated, Gold Standard Treatment**
  - Contingency Management (CM) + Motivational Enhancement (ME) + Cognitive Behavior Therapy (CBT)
- **Limitations**
  - Best case it works for only 50% of patients (more likely 30%)
  - Costly
  - Additional access issues
  - Takes a long time to complete (months), which negatively impacts treatment adherence

# Transcranial magnetic stimulation

- Noninvasive magnetic stimulation of nerve cells in prefrontal cortex
- FDA approved for treating Major Depression, Anxiety-driven Depression, Obsessive Compulsive Disorder (OCD), and Smoking Addiction
- Pros
  - Potentially large effect sizes
  - Likely to positively impact other health problems
  - Appears to improve decision-making, self-control
- Cons
  - Expensive
  - Difficult to access
  - Hard to receive coverage for treatment from health insurance
  - Time intensive (i.e., 20-minutes a day, 5 days/week, for 3-4 weeks)

# Digital Interventions

- **Pros**

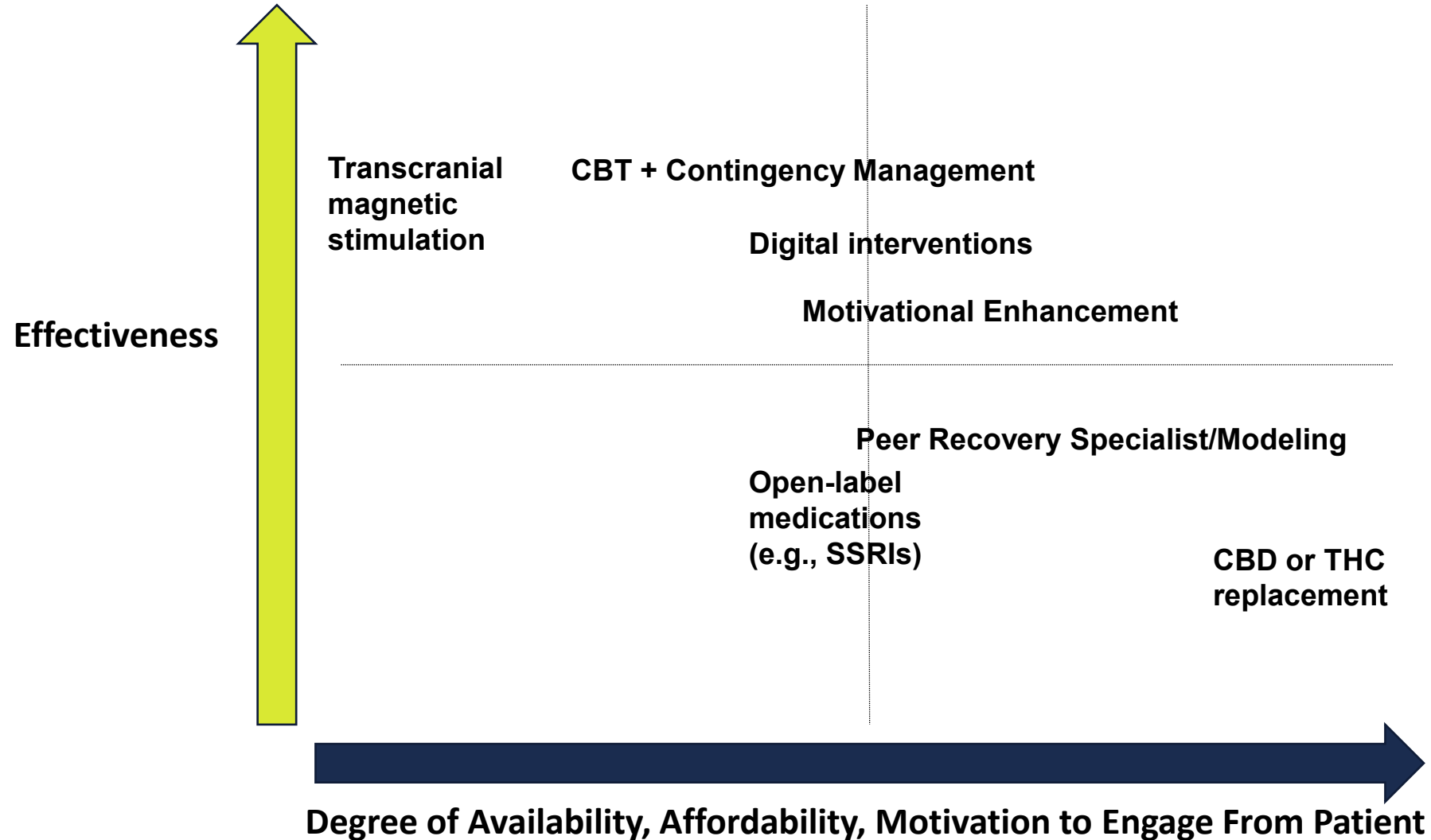
- Effective at reducing cannabis use and problematic cannabis use
- Effective for those who are and are not treatment-seeking
- Effective for adolescents and young adults
- Becoming increasingly available

- **Cons**

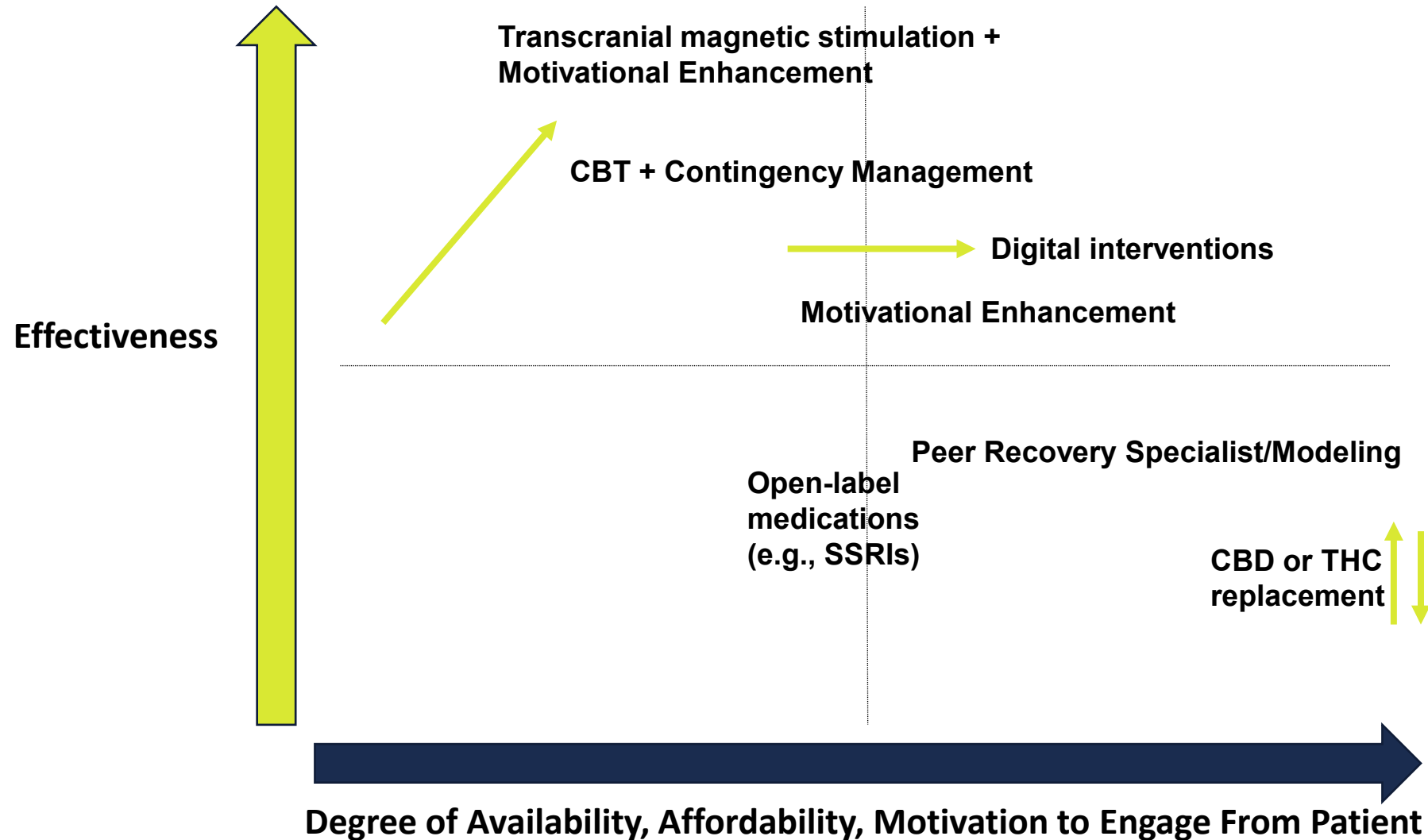
- Still not widely available
- Digital interventions are typically siloed, limiting repeated use and more robust efficacy



# Current Trade-Offs in CUD Treatment



# Anticipated Trade-Offs in CUD Treatment in 2-3 Years

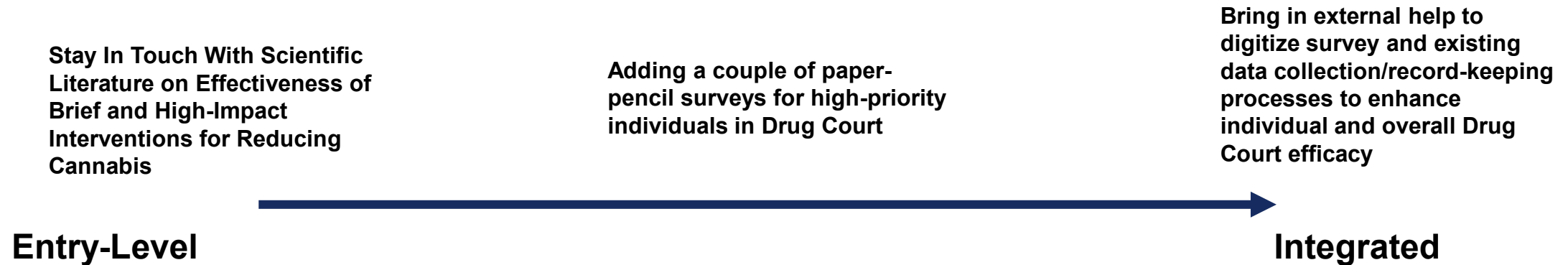




# Practical Steps to Leverage Data to Improve Cannabis-Related Outcomes in Drug Courts

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# Data-Based Strategies for Addressing Cannabis Trends in Drug-Courts



# Why Incorporate Data?

- Helps to identify problems before they materialize
- Facilitates understanding of gaps in process
- When done properly, can increase efficiency and overall cost-effectiveness of program
- Can improve outcomes
  - Helps individuals and society
  - Helps provide evidence to support grant, state, non-profit funding

# Collect Survey Data & Integrate with Other Data/Events

- **Leverage previously empirically supported questions**
  - You can do it yourself or hire external team to help get your services up and running
- **Collect data throughout individual cases**
  - Baseline/intake
  - Throughout process (send key 3-5 survey questions via smartphone surveys)
    - Frequency, amount, THC potency, readiness to reduce use, craving, problematic use
  - Afterwards to track outcomes
- **Manually enter objective events or records with survey data in an integrated file**
  - E.g., successful completion/graduation
  - Involvement of law enforcement officer
  - Type and number of crimes

# Survey Question Strategies For Abstinence-Only Programs

- **If you cannot ask, or it doesn't make sense to ask questions about cannabis use based on the type of drug court program, try asking questions such as these to indirectly assess frequency of cannabis use/problematic use:**
  - *“How strong on a scale of 1-10 are your cravings or urges to use cannabis before or during work?”*
  - *“How intoxicated from cannabis use on a scale of 0-10 do you think most people can get and still drive safely?”*
- **Try identifying for which substance they report having the strongest cravings**
- **If their primary substance is opioids or stimulants, identify whether they use cannabis regularly, and if so, whether that began before, during, or after the opioid/stimulant use**
  - Growing evidence suggests that those who are generally naïve to cannabis may be the small subgroup who might benefit from using cannabis to reduce opioid use

# Summary

- Cannabis is complicated (as if substance use was not already!)
- Following big-picture data trends will help you prepare for barriers issues in your court
- Following big-picture scientific evidence on treatment trends for CUD will also help you maximize the success for both recidivism and reductions in use
- Incorporating data systems increases likelihood you help individuals, society, and your own Drug Courts cost-effectiveness and efficacy



# THANK YOU

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