Managing Stimulant Use Disorder

Developers and Presenters

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Disclosures

- Dr. Brooks and Dr. Ginley have no financial conflicts of interest to disclose

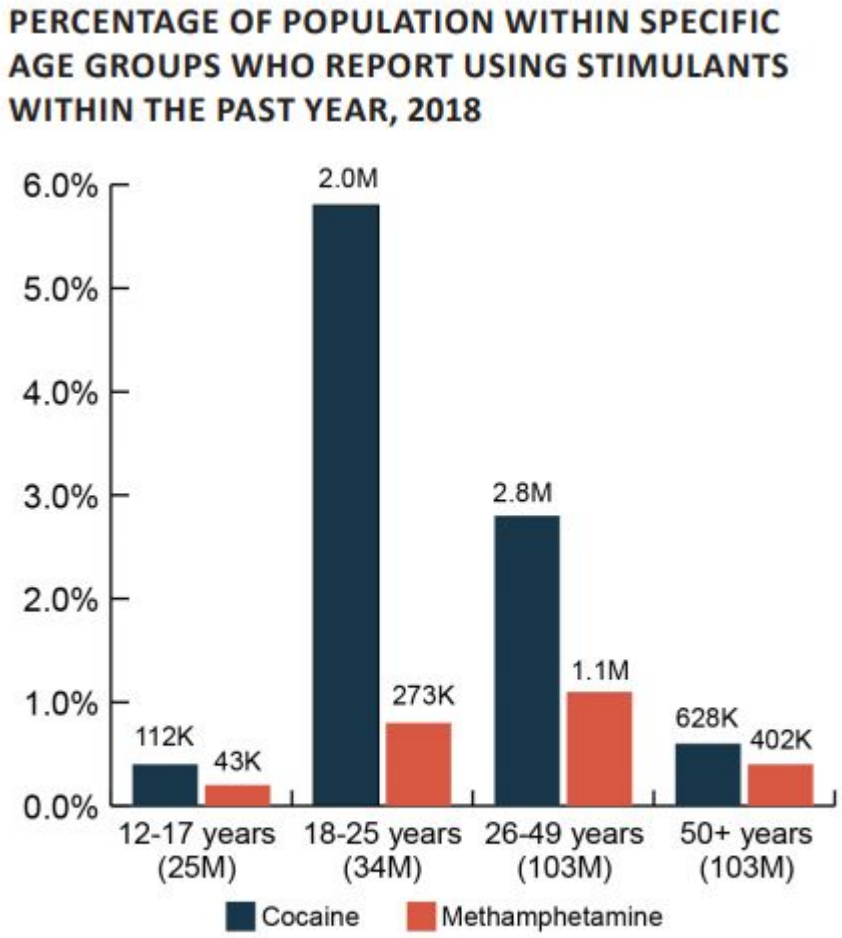
Objectives

- Describe current trends in stimulant use
- Recognize the importance of understanding stimulant use by individuals with opioid use disorder.
- Gain a more in-depth understanding of evidence-based treatment interventions for stimulant use disorders.

Trends in Stimulant Use

Stimulant Use

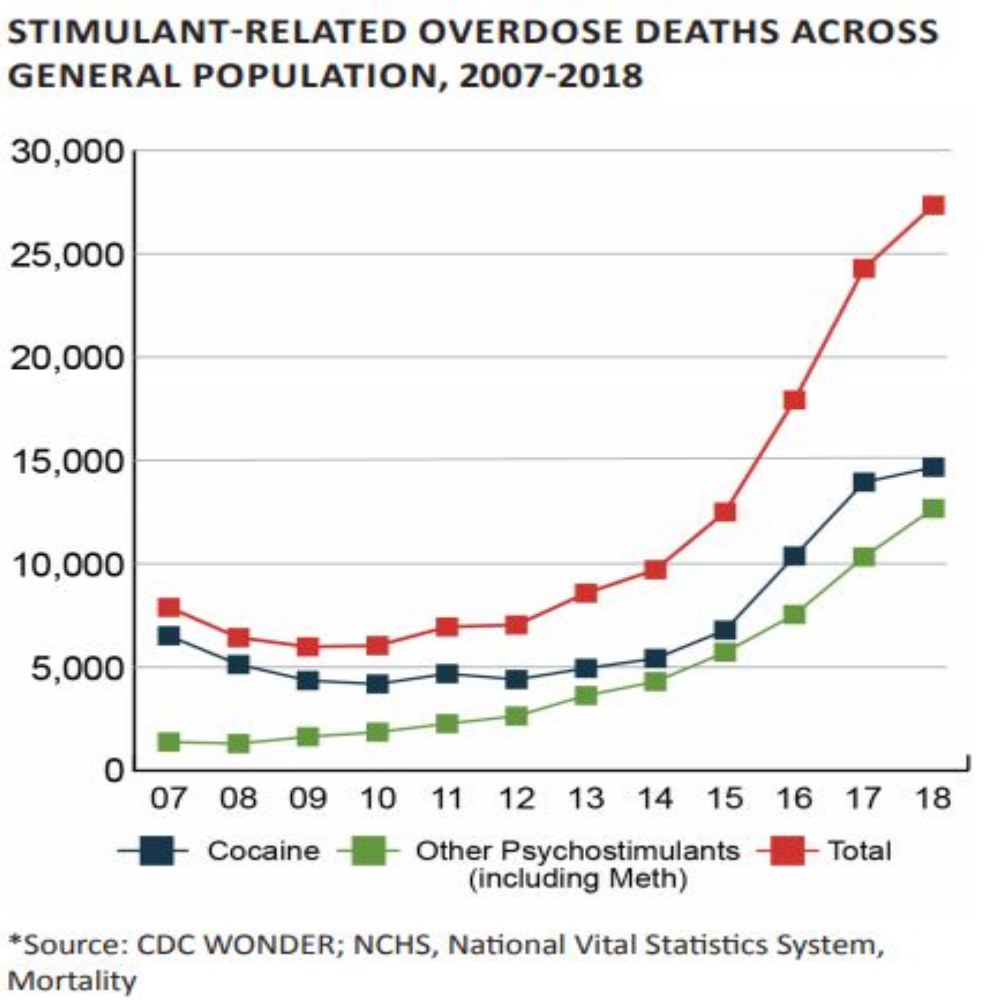
- Cocaine
  - Organic - derived from coca plant
  - Bolivia, Peru, Columbia
  - Caribbean corridor
- Methamphetamines
  - Mostly from labs in Mexico and transported through southern border
  - Decreasing domestic production
  - Meth 2.0 made with synthesized ephedrine (P2P)
- Novel psychoactive substances
  - Synthetic Cathinones (Bath Salts) created in labs
  - Sourced from Asia and Europe for domestic packaging and distribution
- Prescription Amphetamines
  - Dexedrine, Adderall, Ritalin, Concerta



*Source: National Survey on Drug Use and Health, 2018
** Numbers in parentheses represent total populations for the specific age groups.

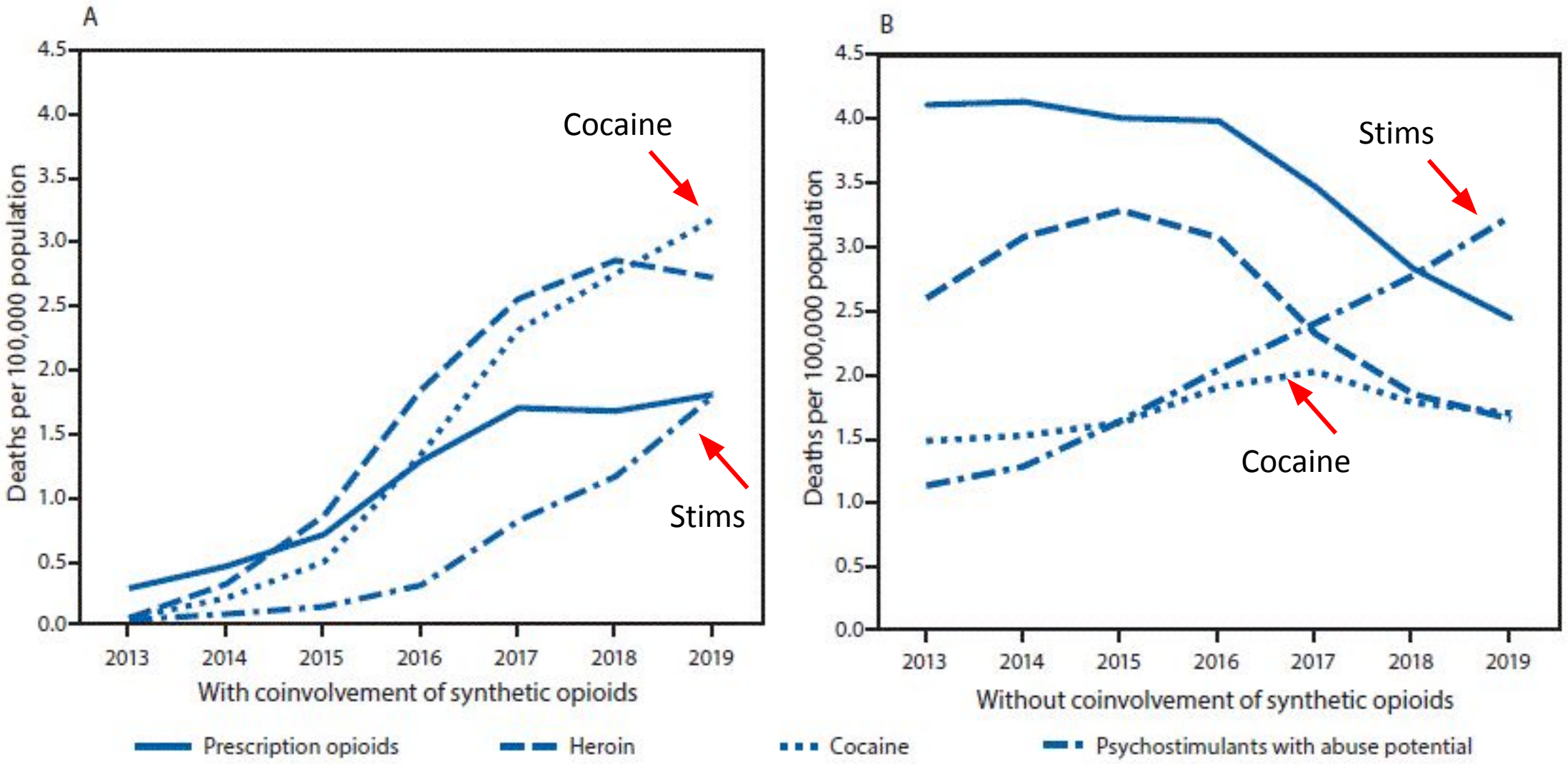
Mortality

- Deaths involving stimulants rose 317% between 2013 and 2019
- Deaths from “Other Psychostims” rose 180% between 2015 and 2019
- June 2019-June 2020
  - Cocaine-involved up 26.5%
  - Psychostimulants (e.g. methamphetamine) up 34.8%
  - Increases are likely linked to synthetic opioid (fentanyl) co-use or adulteration



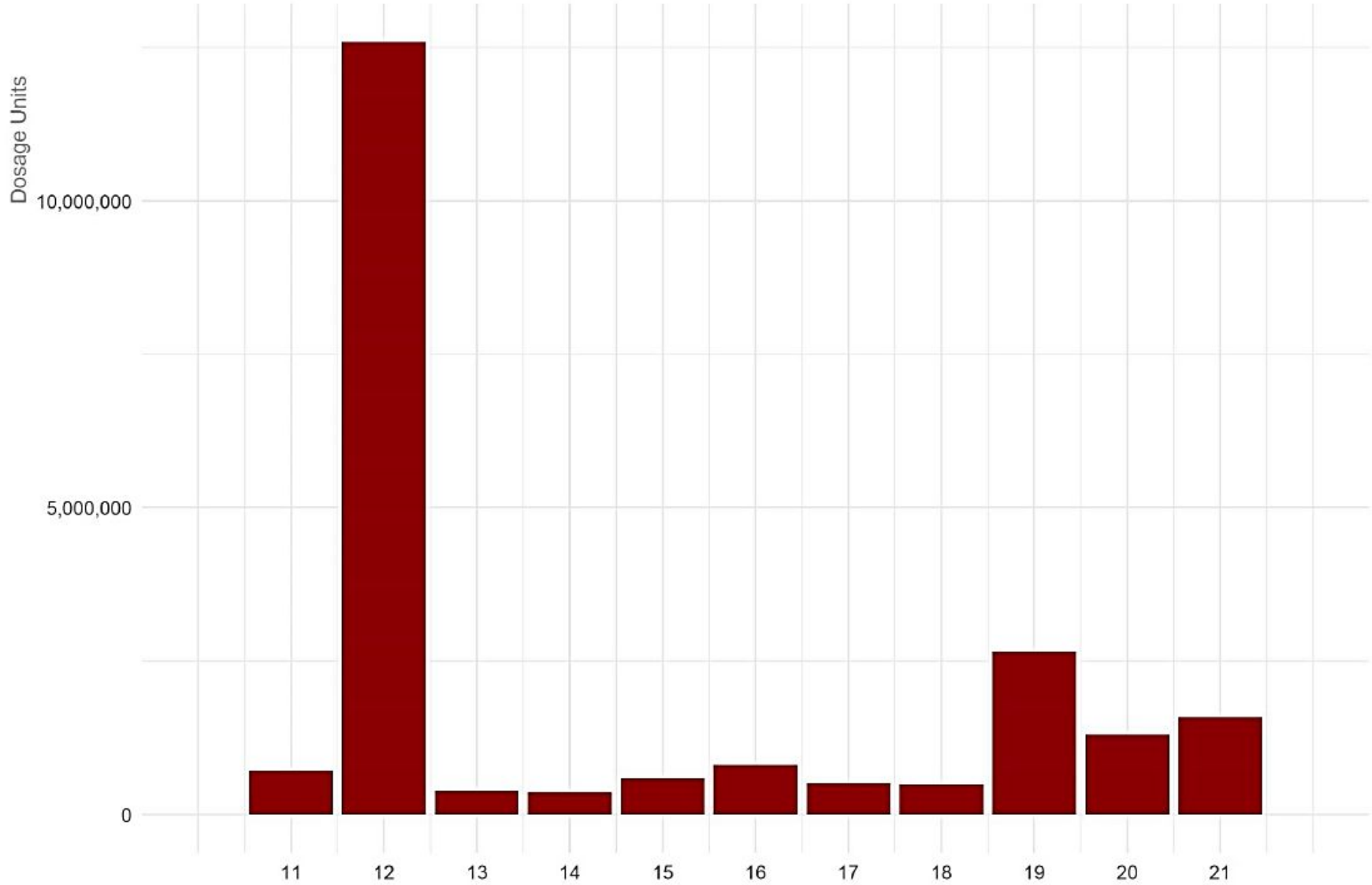
Mattson 2021; Han 2021; CDC 2021; DEA 2020

Mortality: The Role of Synthetic Opioids



Mattson, 2021

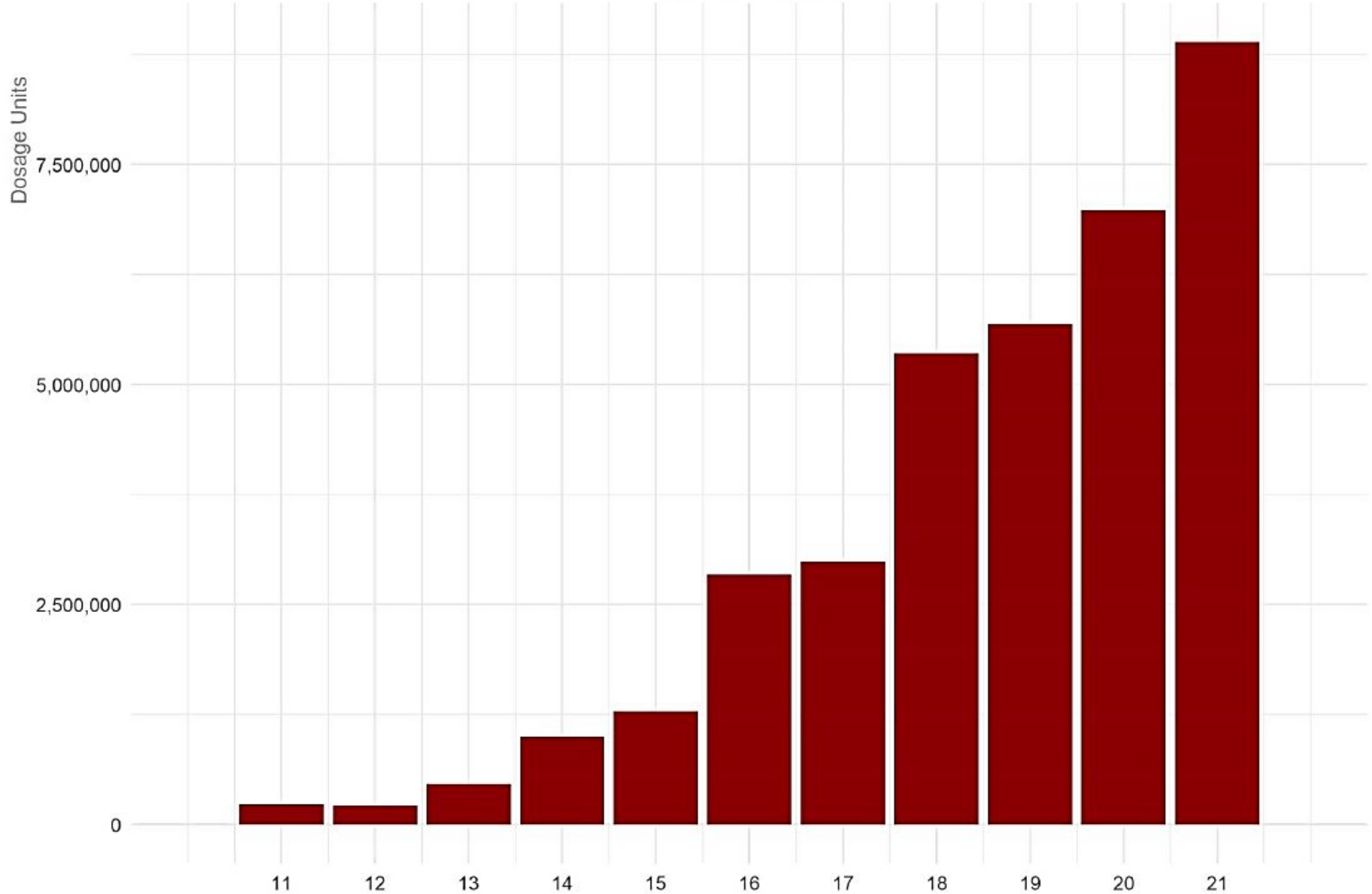
APPALACHIA HIDTA COCAINE SEIZURES IN DOSES
2011 - 2021



Seizures based on the HIDTA Performance Management Process.

https://www.hidtaprogram.org/NETI/reports/Appalachia.pdf

APPALACHIA HIDTA METHAMPHETAMINE SEIZURES IN DOSES
2011 - 2021



Seizures based on the HIDTA Performance Management Process.

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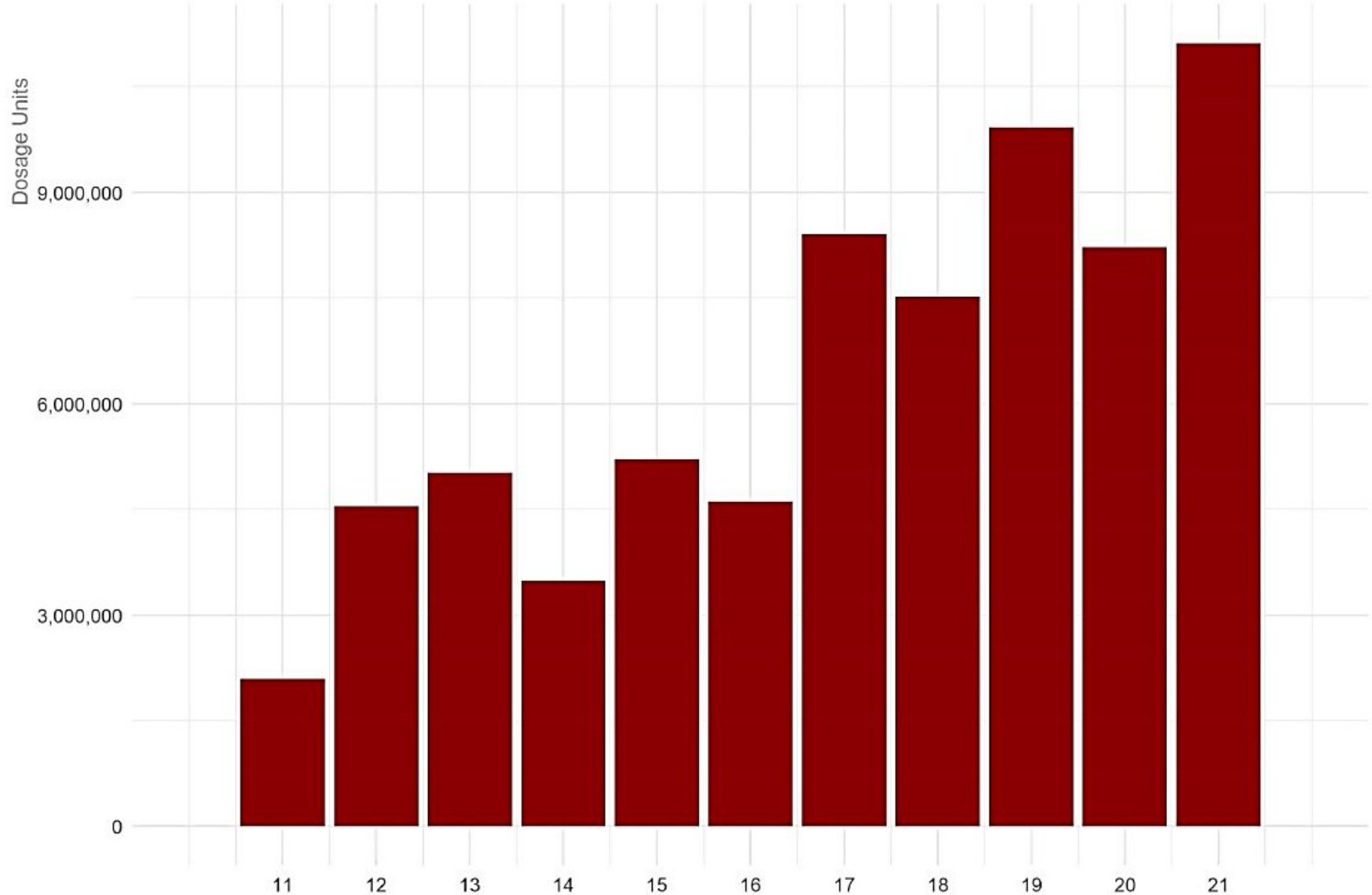
APPALACHIA HIDTA HEROIN SEIZURES IN DOSES
2011 - 2021



Seizures based on the HIDTA Performance Management Process.

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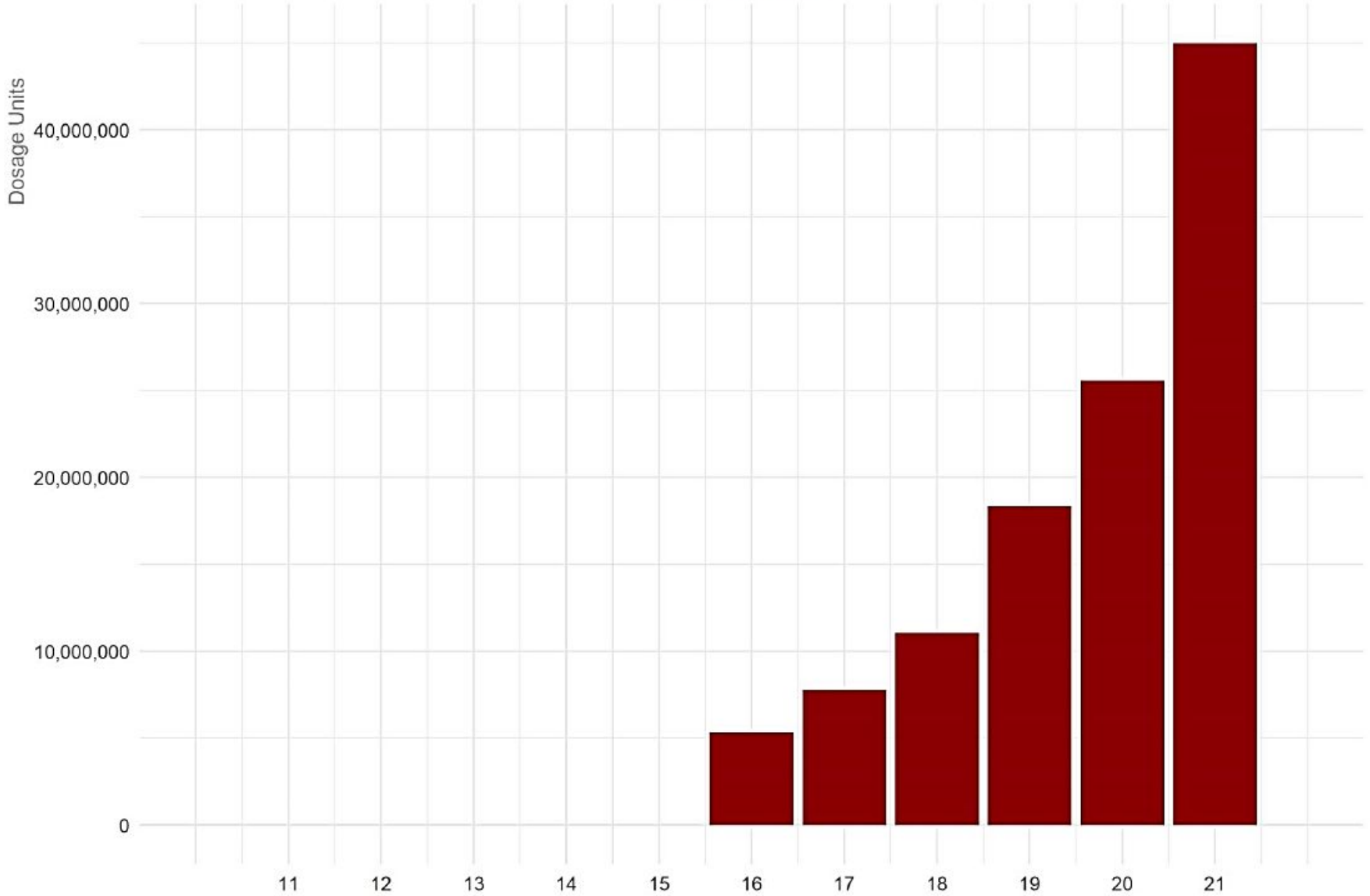
APPALACHIA HIDTA FENTANYL SEIZURES IN DOSES
2011 - 2021



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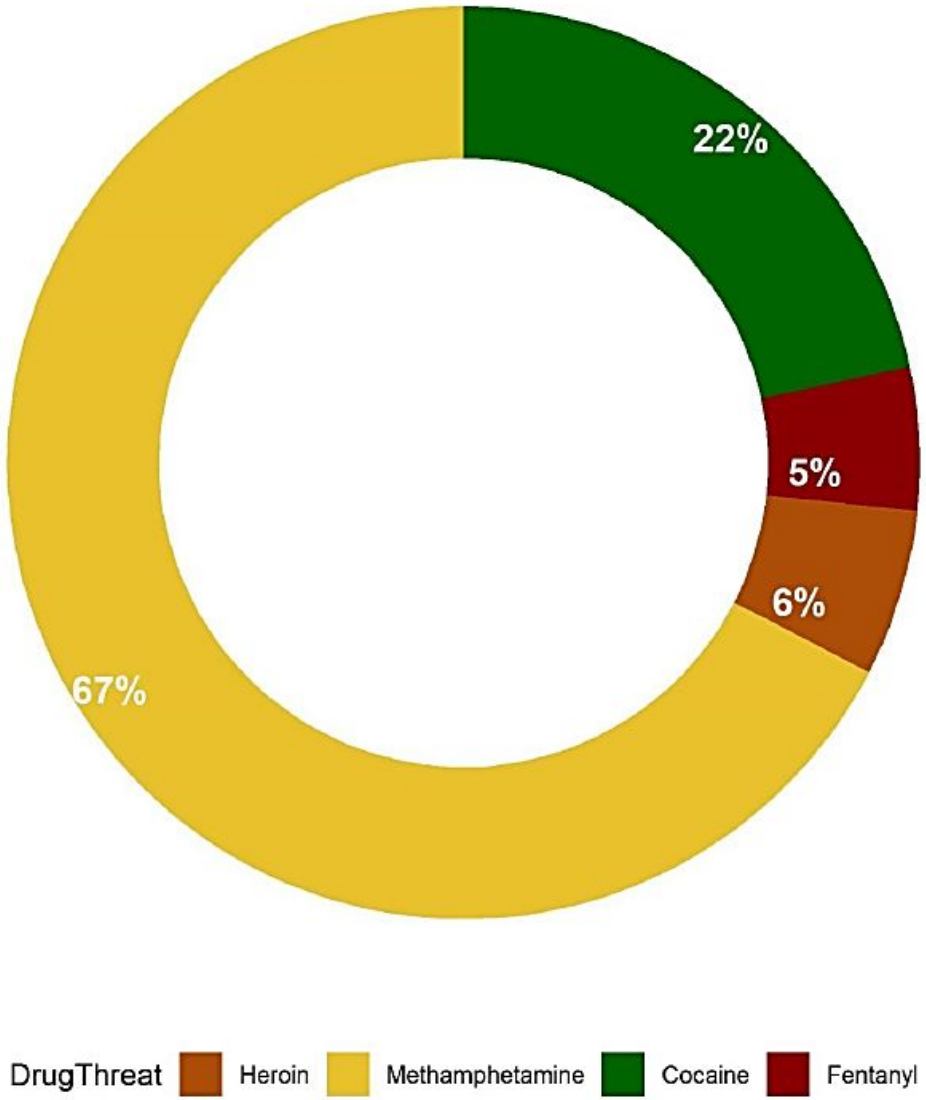
2021 APPALACHIA HIDTA SEIZURES IN KILOGRAMS FOR SELECTED DRUG CATEGORIES



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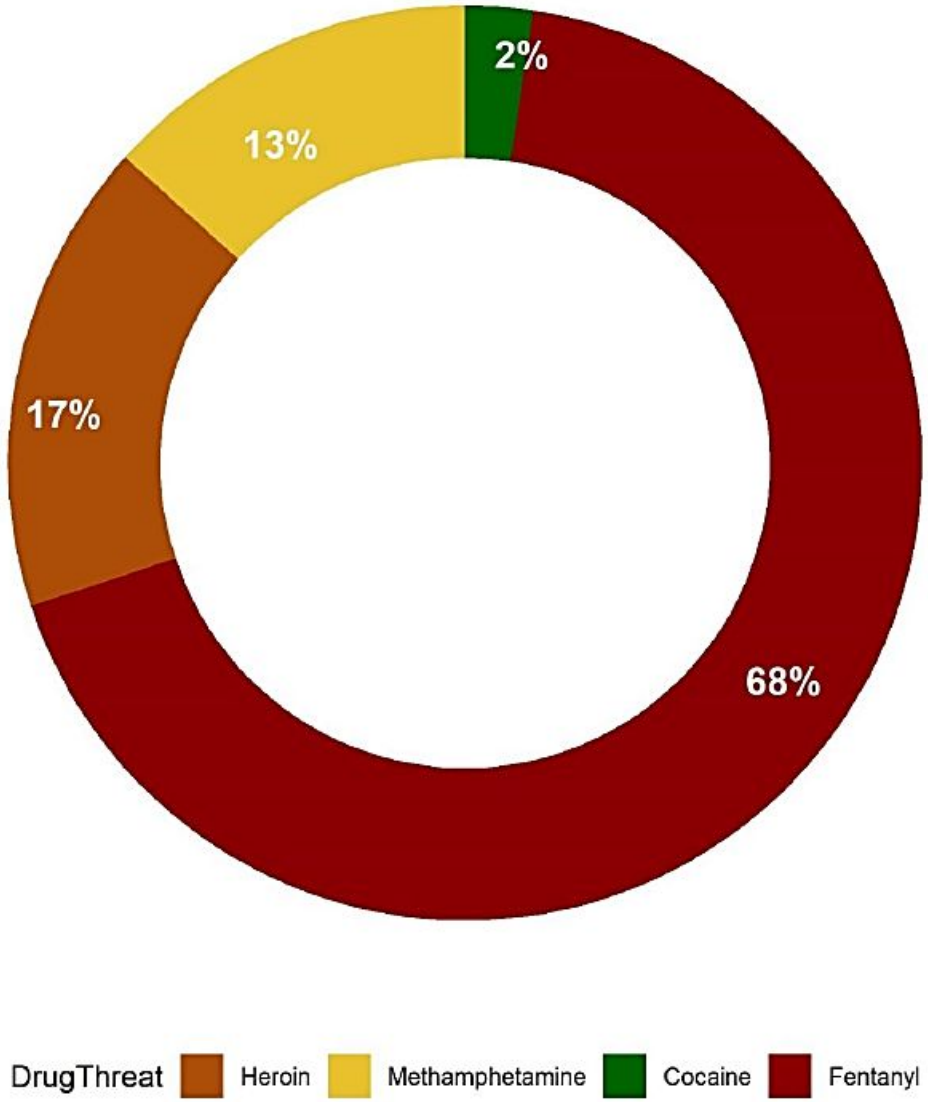

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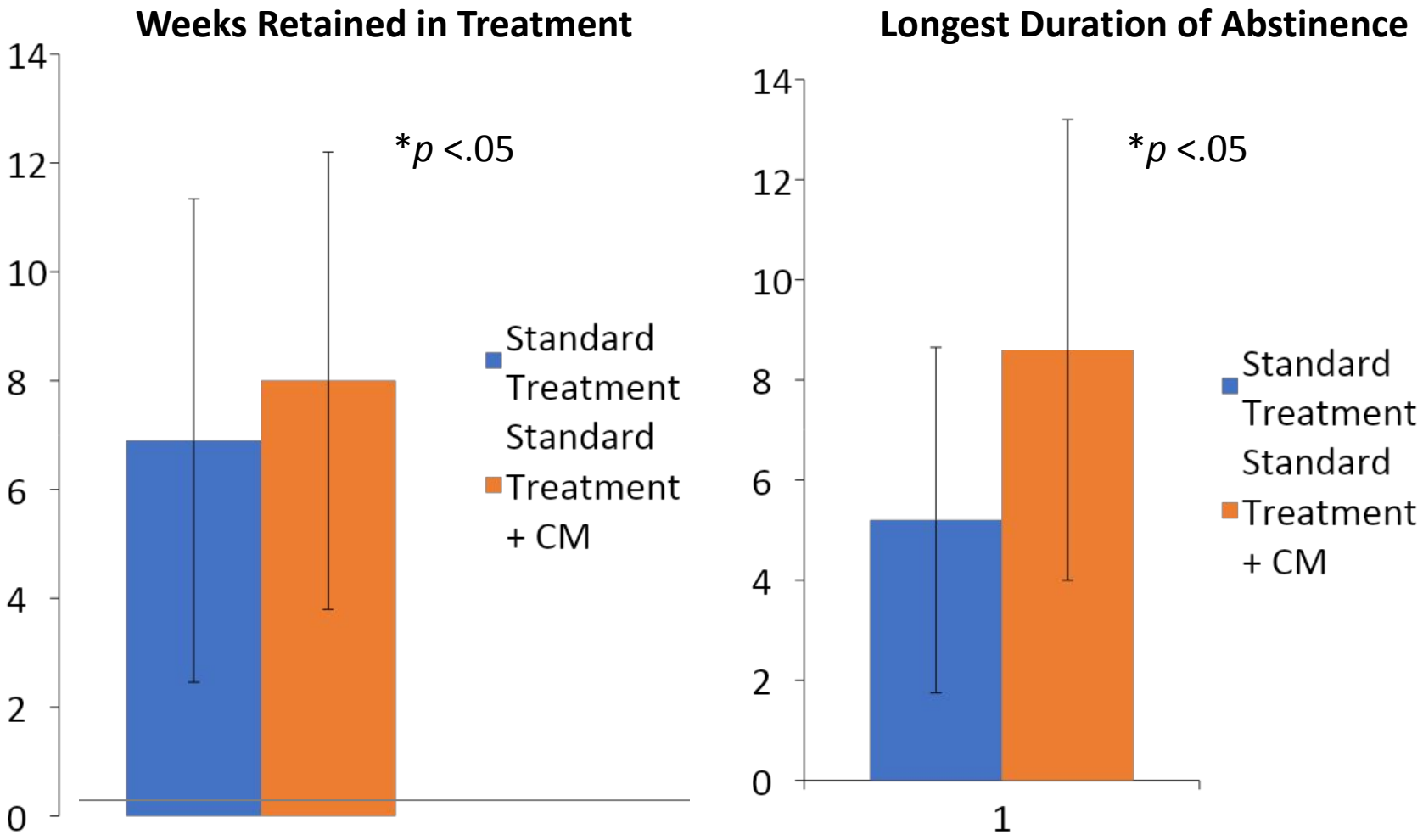
Treatment of Stimulant Use Disorders

Contingency Management Works

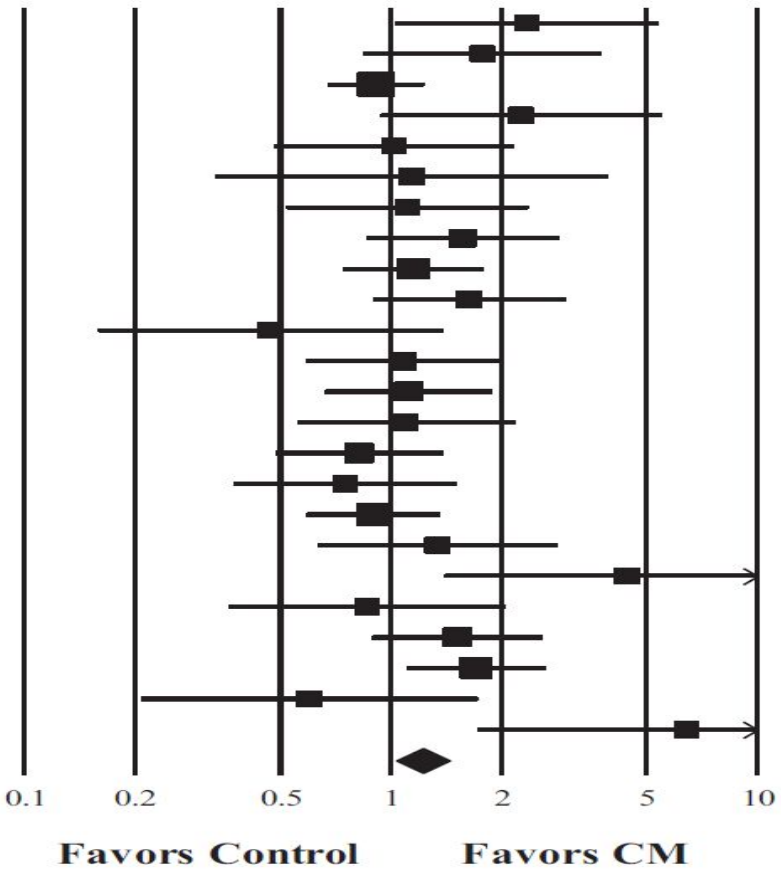


Petry, Pierce, et al. (2005)

What about Long-Term Results?

Forest Plot of Effect Sizes for Contingency Management Treatment Versus Comparison Conditions at Long-Term Follow-Up

Study name	Subgroup within study	Odds ratio	Lower limit	Upper limit	Z-Value	p-Value
Alessi et al., 2007	CM	2.350	1.028	5.371	2.026	0.043
Brooner et al., 2007	CM	1.780	0.841	3.766	1.508	0.132
Chudzynski et al., 2015	Combined	0.912	0.675	1.230	-0.605	0.545
Epstein et al., 2003	CM	2.270	0.941	5.476	1.825	0.068
Hagedorn et al., 2013	CM	1.020	0.480	2.169	0.051	0.959
Iguchi et al., 1997	CM	1.140	0.332	3.919	0.208	0.835
Jones et al., 2005	CM living expenses	1.110	0.520	2.370	0.270	0.787
McDonell et al., 2013	CM	1.570	0.858	2.873	1.463	0.143
Peirce et al., 2006	CM	1.150	0.739	1.789	0.620	0.535
Petry et al., 2005	Combined	1.633	0.893	2.985	1.592	0.111
Petry et al., 2006	CM	0.470	0.159	1.390	-1.364	0.172
Petry et al., 2010	CM	1.080	0.590	1.978	0.249	0.803
Petry et al., 2011	CM	1.120	0.662	1.895	0.422	0.673
Petry, Barry, et al., 2012	Combined	1.099	0.555	2.176	0.271	0.786
Petry, Barry, et al., 2012 2nd sample	CM	0.820	0.484	1.390	-0.737	0.461
Petry, Alessi, et al., 2012	CM	0.750	0.374	1.505	-0.810	0.418
Petry et al., 2015	Combined	0.894	0.588	1.358	-0.527	0.598
Preston et al., 2002	CM take home doses	1.340	0.632	2.840	0.764	0.445
Rawson et al., 2002	CM	4.420	1.402	13.932	2.537	0.011
Rawson et al., 2006	CM	0.860	0.360	2.052	-0.340	0.734
Roll et al., 2006	CM	1.520	0.888	2.603	1.526	0.127
Roll et al., 2013	Combined	1.712	1.108	2.644	2.424	0.015
Shoptaw et al., 2005	CM	0.600	0.208	1.727	-0.947	0.344
Silverman et al., 2004	CM take home doses	6.420	1.722	23.931	2.770	0.006
		1.219	1.032	1.441	2.334	0.020



Ginley, et al. (2021)

Fundamentals Principles of CM

Three central tenets of effective CM:

1. Frequently ***monitor*** a specific target behavior.

2. Provide tangible positive reinforcement ***each time*** the target behavior is demonstrated.

3. ***Withhold*** positive reinforcement if the target behavior does not occur. Can add in a slight punisher.

Barriers to CM Dissemination

1. You pay people to do something they should want to do on their own?!
2. It costs time and money to implement.
3. Won't they just return to using once you stop providing reinforcement?

Paying for CM treatment

- NIH funded trials
- Department of Veterans Affairs

- California Senate Bill 110
  - Medi-Cal

DePhilppis et al., (2018)

Overcoming Barriers

1. Effective interventions should not be withheld from patients with SUD.

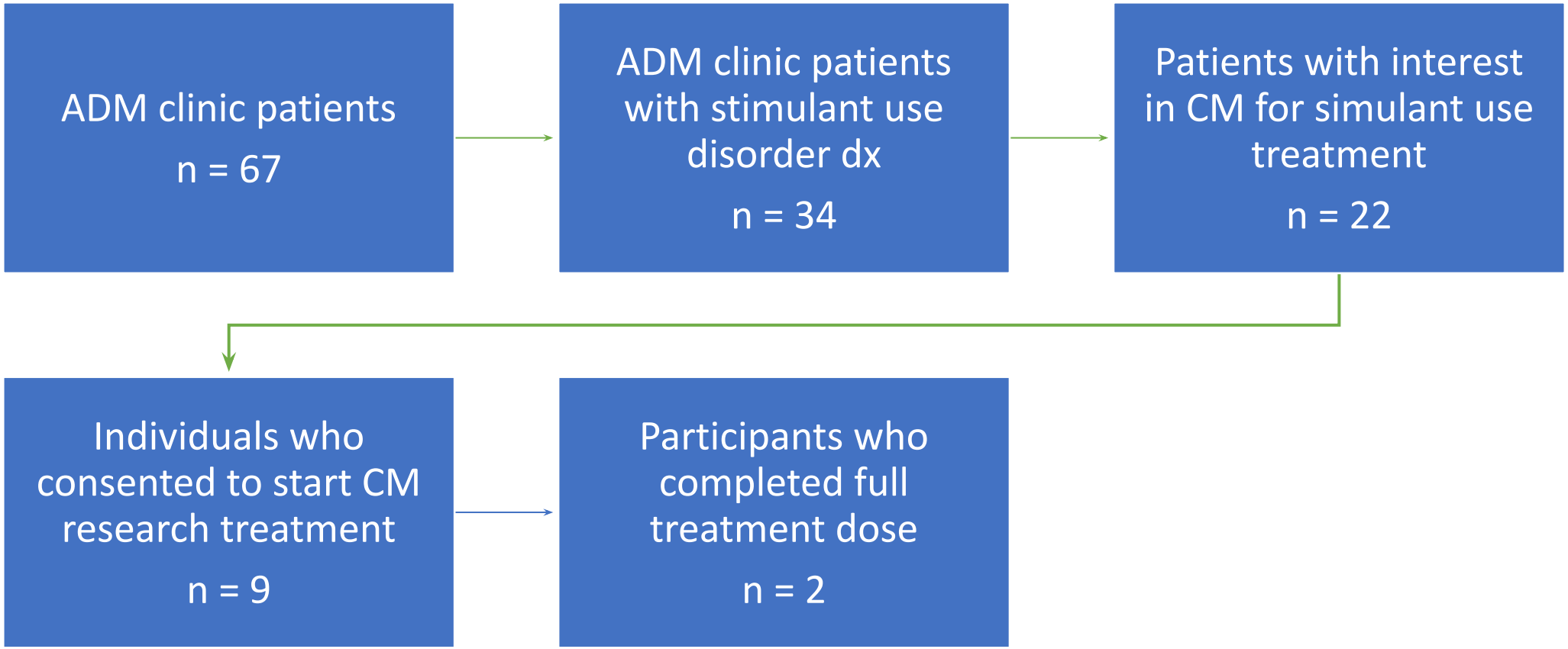
2. Many SUD patients are ambivalent about changing; CM can start ambivalent patients on the road to change.

3. CM uses the same principles that are applied in every day life.

4. Longest duration of abstinence during treatment predicts long-term change.

5. Ultimately reductions in substance use leads to societal benefits.

Barriers Still Present Even with Onsite CM Available



Alternative treatment options

Treatment Intervention	Evidence Statement
Cognitive Behavioral Therapy	Insufficient evidence to support or discount
Acupuncture	Evidence does not support
Antidepressants	Evidence does not support use for cocaine, inefficient evidence for meth
Disulfiram	Insufficient evidence to support or discount
Dopamine agonists	Evidence does not support
Antipsychotics	Evidence does not support
Anticonvulsants (including toprimate)	Evidence does not support
Psychostimulants	Insufficient evidence to support or discount
Opioid agonists	Insufficient evidence to support or discount
NAC	Insufficient evidence to support or discount

From Ronsley et al., 2020

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