

# Director's Report to the National Advisory Council on Drug Abuse

**Nora D. Volkow, M.D.**

**Director**

**National Institute on Drug Abuse**

**September 15, 2021**

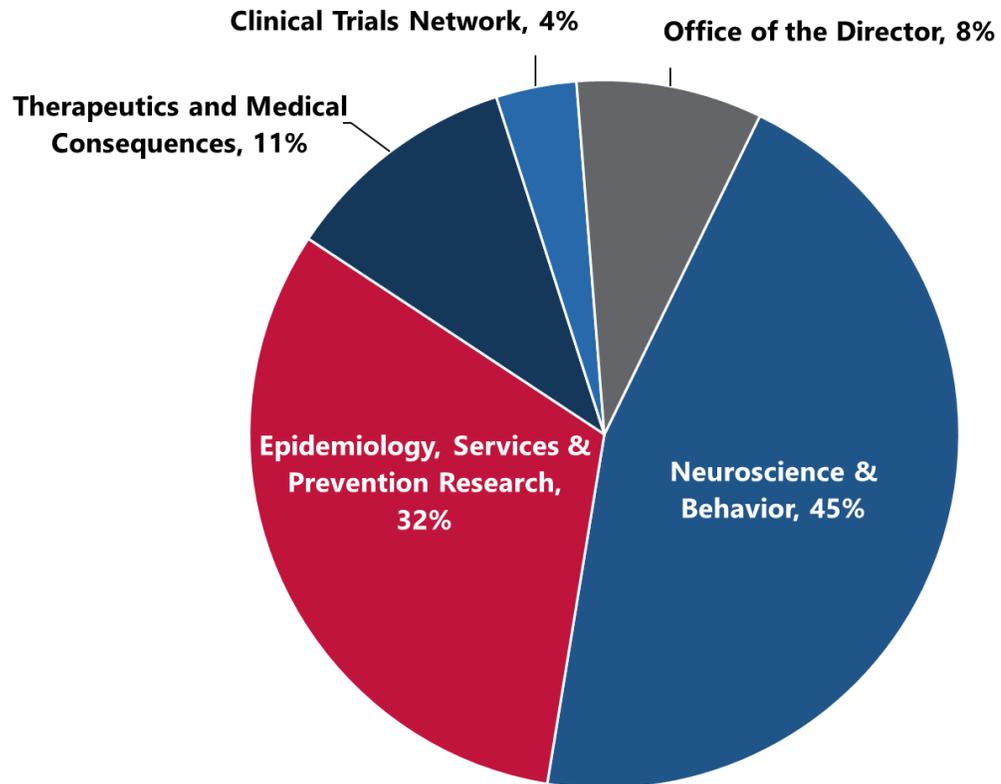
# NIDA BUDGET

	FY 2020 (\$k)	FY 2021 (\$k)	FY 2022 PB (\$k)
<b>Base</b>	<b>\$1,191,362</b>	<b>\$1,210,014</b>	<b>\$1,447,060</b>
<b>HEAL</b>	<b>\$266,321*</b>	<b>\$270,295*</b>	<b>\$405,443*</b>
<b>Total</b>	<b>\$1,457,683</b>	<b>\$1,480,309</b>	<b>\$1,852,503</b>

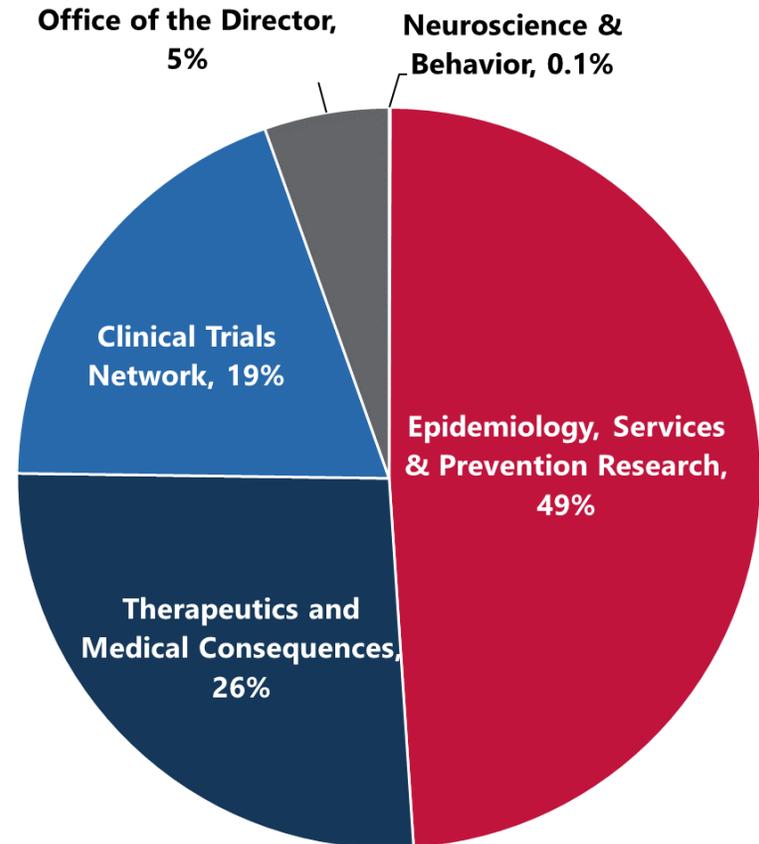
\*NIH's total HEAL funding is split evenly between NIDA and NINDS

# FY 20 Funding Overview

## Non-HEAL Research

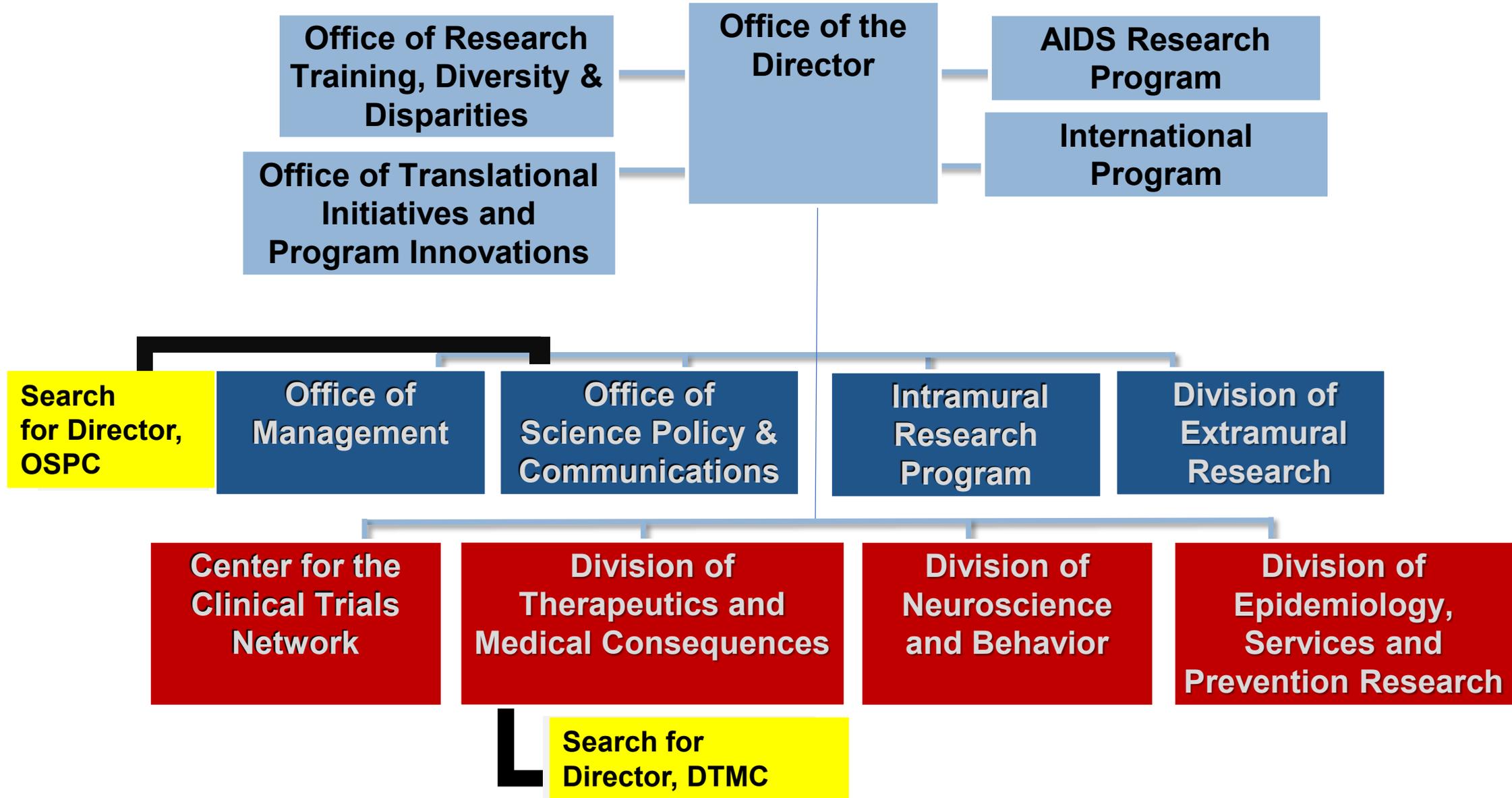


## HEAL Research\*



\*Includes all NIDA HEAL projects regardless of funding source

# NIDA



# UPDATE ON COVID-19 INITIATIVES

**NIDA is supporting over 100 studies related to COVID-19, including:**

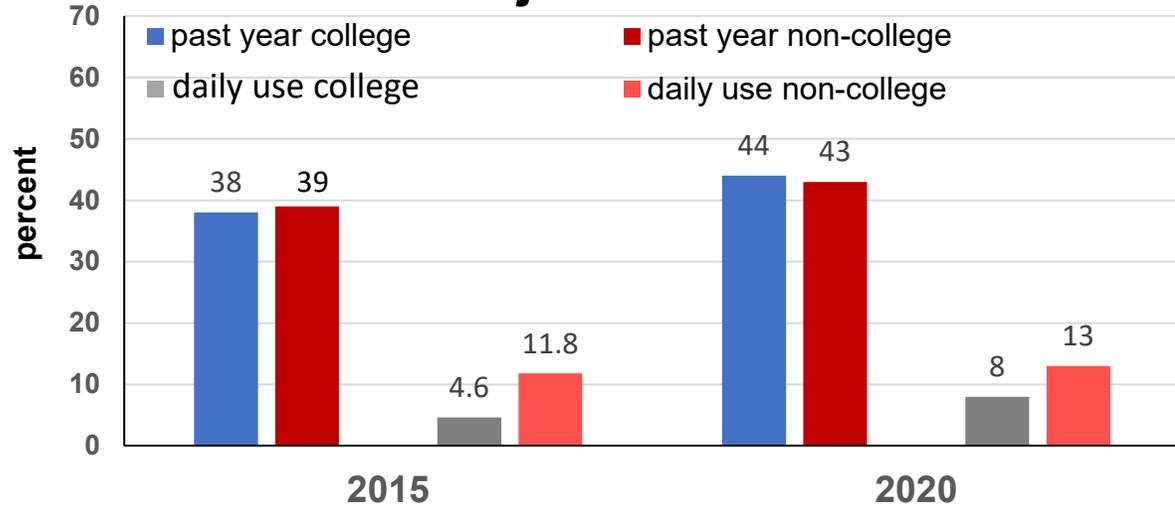
- Effects of COVID-19 on people who use drugs
- Effects of COVID-19 on brain development and behavior
- Impact of pandemic-related policy changes on access to SUD treatment
- Understanding and addressing vaccine hesitancy in SUD

## **NIDA Involvement in Trans-NIH Initiatives**

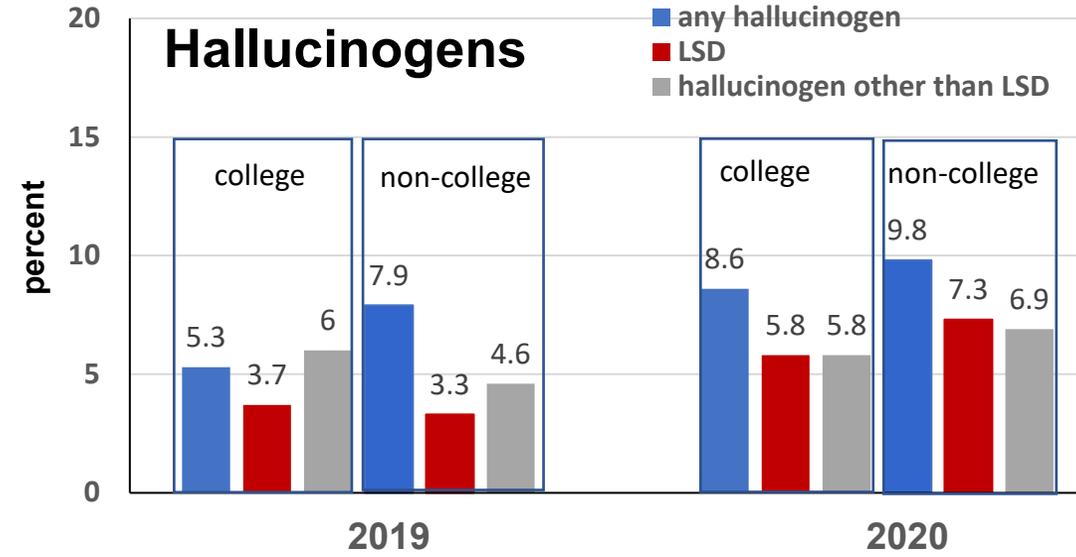
- RADx-Rad: Wastewater Detection of SARS-Cov-2
- RADx-Rad: Multimodal Surveillance Methods for High-Risk Populations
- RADx-UP: Underserved Populations, including SUD
- Social, Behavioral, and Economic Impacts of COVID-19
- Pregnant and Lactating Women and Children
- Post-Acute Sequelae of COVID-19

# Drug Use in College Age Adults in 2020 MTF

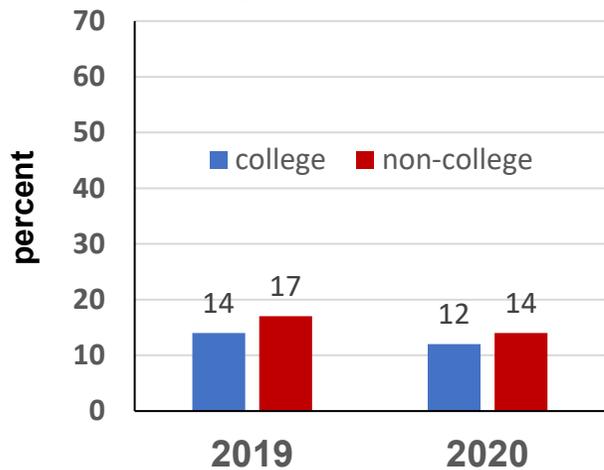
## Marijuana Use



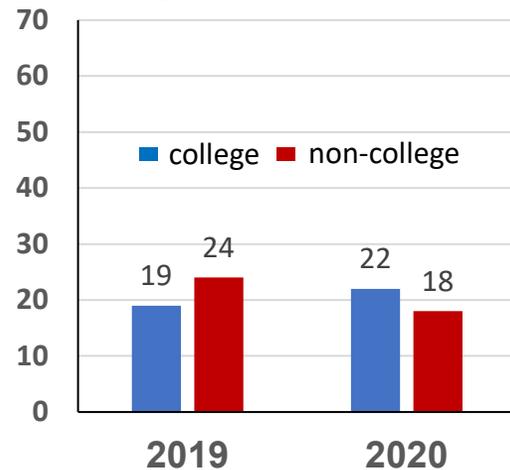
## Hallucinogens



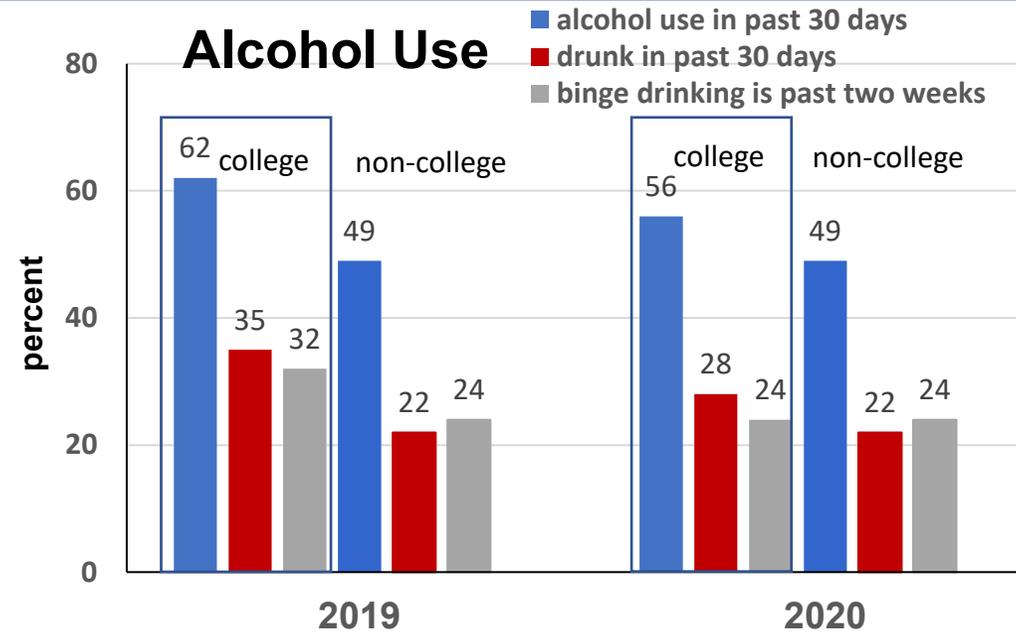
## Marijuana Vaping (past month)



## Nicotine Vaping (past month)



## Alcohol Use



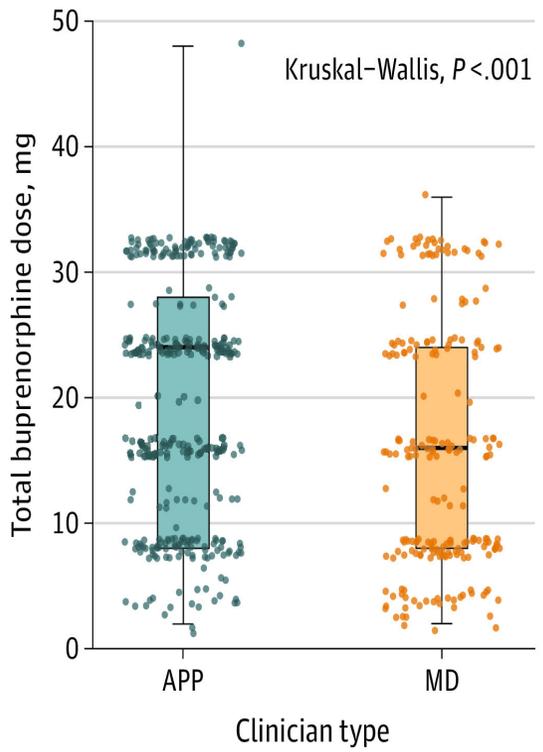
# Drug-involved Overdose Deaths\* Continue to Increase

	ALL DRUGS	HEROIN	NAT & SEMI – SYNTHETIC	METHADONE	SYNTHETIC OPIOIDS	COCAINE	OTHER PSYCHO-STIMULANTS (mainly meth)
1/2020*	72,757	14,183	12,118	2,793	38,071	16,537	16,888
7/2020*	86,502	14,640	13,274	3,329	50,703	19,757	21,279
1/2021*	95,230	13,182	13,699	3,677	59,420	20,076	25,300
Percent Change 1/20-1/21	<b>30.9%</b>	<b>-7.1%</b>	<b>13.0%</b>	<b>31.7%</b>	<b>56.1%</b>	<b>21.4%</b>	<b>49.8%</b>

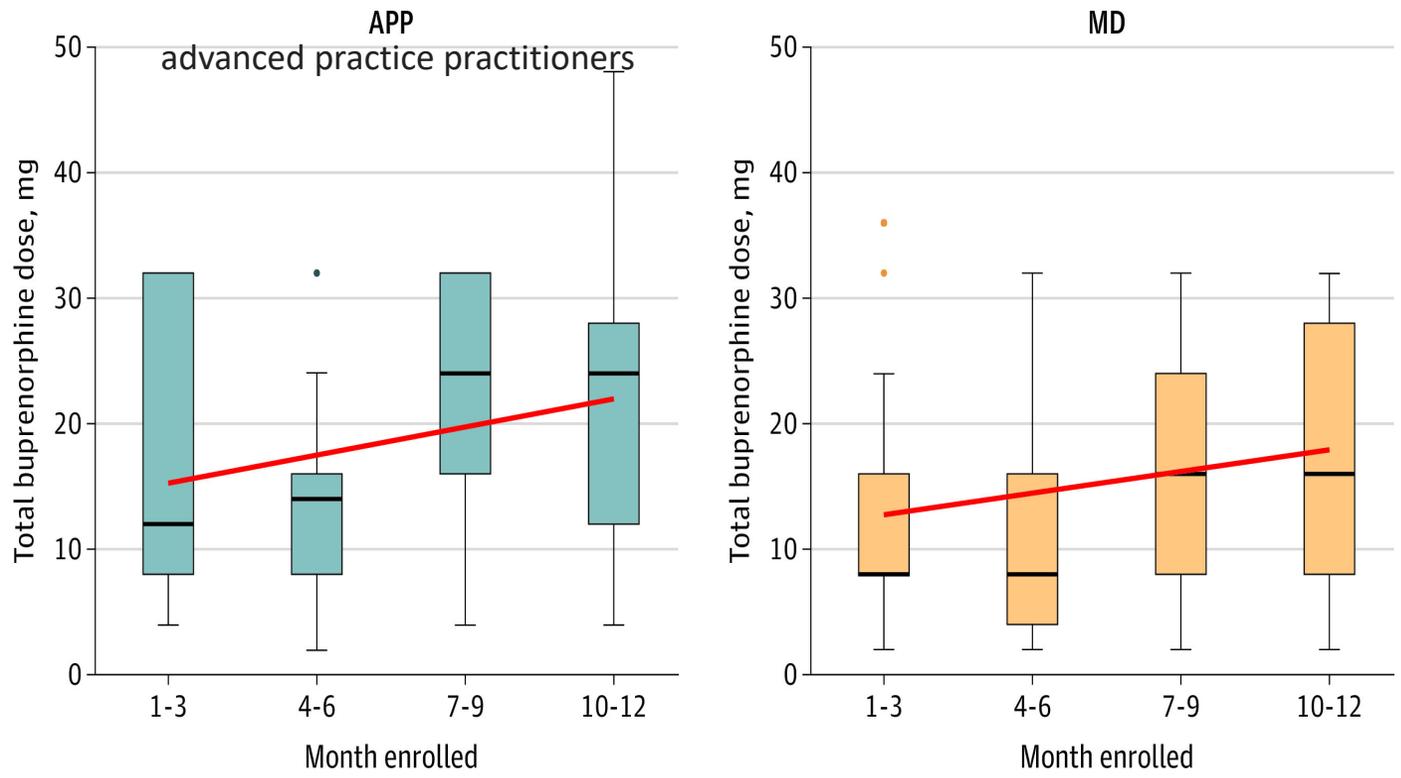
\*NCHS Provisional drug-involved overdose death counts are PREDICTED VALUES, 12 months ending in select months.  
<https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>

# CTN: ED-administered, High-dose Buprenorphine (>12 mg) May Enhance OUD Treatment Outcomes

**A** Total buprenorphine doses administered



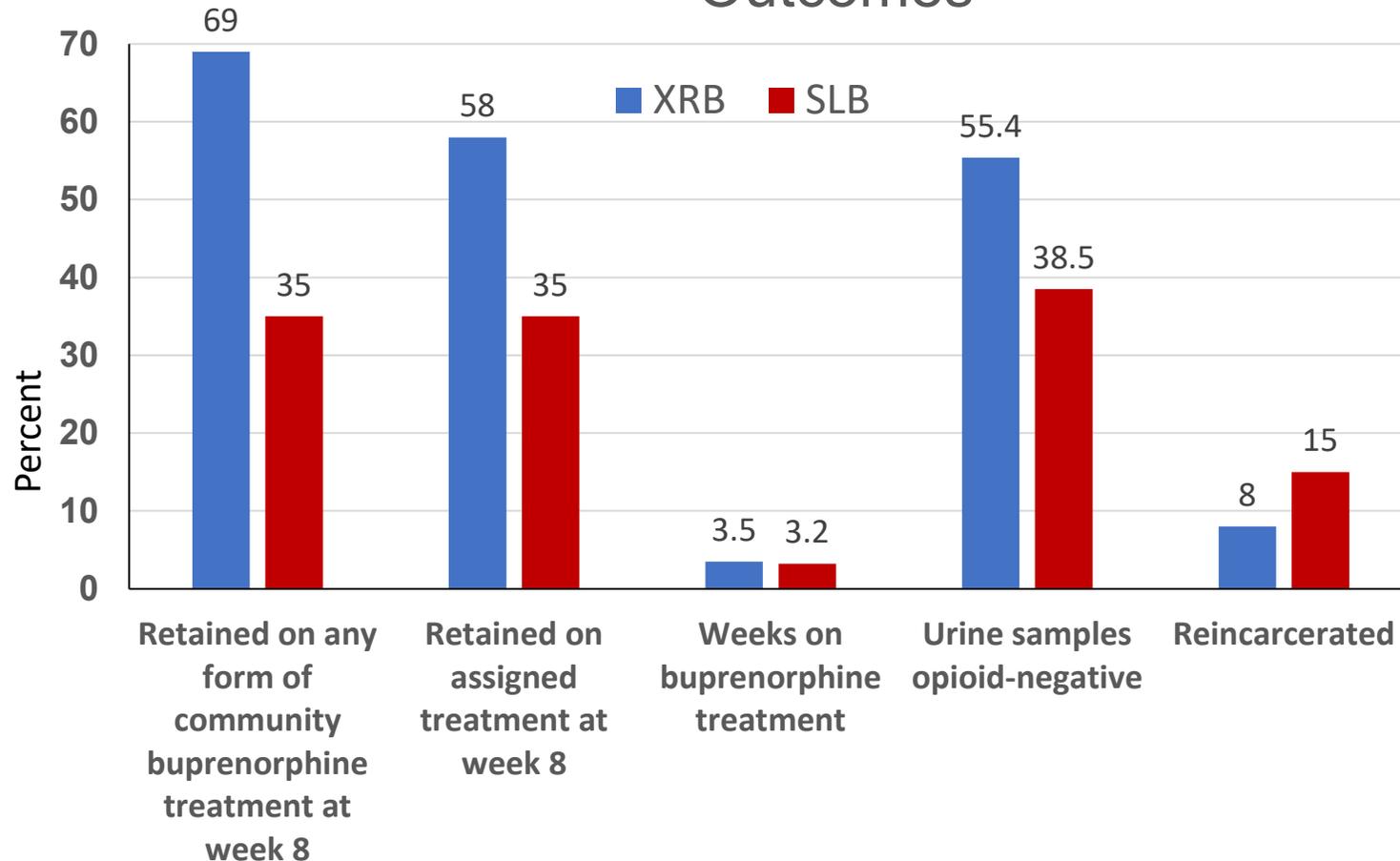
**B** Total buprenorphine dose administered per encounter by calendar time



High-dose Buprenorphine induction was safe and well tolerated in untreated OUD patients (n=391). No cases of respiratory depression or sedation. 5 cases of precipitated withdrawal were not associated with dose

# Extended-Release vs Daily Buprenorphine in Adults (n=52) with OUD at Time of Release From Jail

## Acceptability, Feasibility & Postrelease Outcomes



- XR-Bup was acceptable and had fewer in-jail clinic visits and increased treatment retention when compared with daily Bup treatment.
- These results support wider use and further study of XR-Bup in correctional and reentry OUD treatment.

# Medications Development for OUD and OOD

## UG3 Transitions

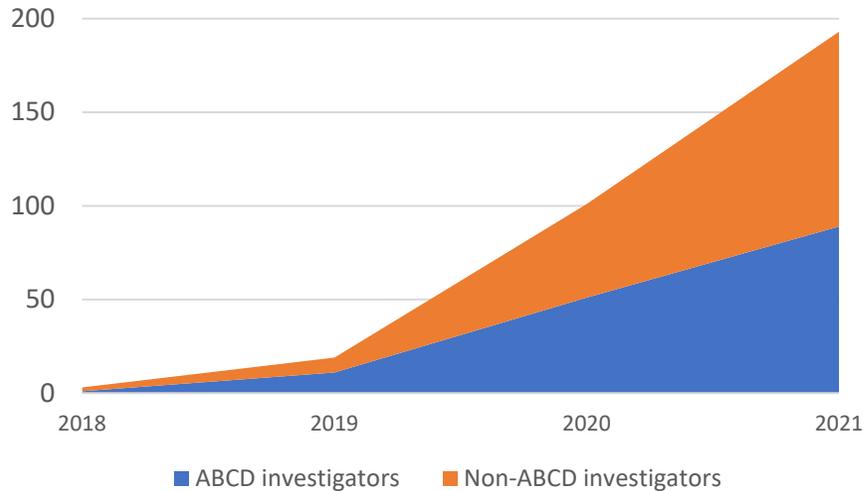
Project	Accomplishment
Gpr 151 agonist to treat opioid use disorder	Gpr151 characterized, lead identified
Evaluation of Kratom and its derivatives for the treatment of OUD	Kratom characterized. IND studies ongoing
OLANI: 6-month naltrexone implant for relapse prevention of OUD	IND obtained. Human studies ongoing
Suvorexant for Sleep Disturbance in medication treated OUD	IND exempt. Significant sleep improvement
LYN-014: A once-weekly oral methadone for OUD therapy	IND obtained. FDA fast-track designation
SBS-1000: arylepoxamides: New class of potent, safer analgesics	IND to be submitted 10/2021
BICX104: 3-month implantable depot pellet of Naltrexone for OUD	IND filed. Human studies ongoing

- *Biologics*: First study in humans of an opioid vaccine
- *Devices*: One IDE to study Deep Brain Stimulation for OUD

# Adolescent Brain Cognitive Development<sup>SM</sup> Study

## Unanticipated Focus Areas

### Publications



### Racism and Discrimination

Research Letter

May 17, 2021



**Prevalence of Perceived Racism and Discrimination Among US Children Aged 10 and 11 Years**  
The Adolescent Brain Cognitive Development (ABCD) Study



Journal of the American Academy of Child & Adolescent Psychiatry

Volume 60, Issue 8, August 2021, Pages 998-1009



New research

Racial Disparities in Elementary School Disciplinary Actions: Findings From the ABCD Study

New Research

Association Between Discrimination Stress and Suicidality in Preadolescent Children

### COVID-19



Journal of Adolescent Health  
Volume 69, Issue 3, September 2021, Pages 390-397



Original article

Early Adolescent Substance Use Before and During the COVID-19 Pandemic: A Longitudinal Survey in the ABCD Study Cohort

### Sleep



**Polygenic Risk for Insomnia in Adolescents of Diverse Ancestry**

nature communications

Article | Open Access | Published: 13 April 2021

**Associations between frontal lobe structure, parent-reported obstructive sleep disordered breathing and childhood behavior in the ABCD dataset**



Pain

**Neurobiological antecedents of multisite pain in children**

### Imaging

Paediatric Neuroradiology | Published: 11 July 2021

Imaging and health metrics in incidental cerebellar tonsillar ectopia: findings from the Adolescent Brain Cognitive Development Study (ABCD)

# Enhancing Prevention Research Related to Substance Use and Addiction: Identifying Gaps and Opportunities with ABCD Data

Virtual Meeting on Sep 28, 2021 from 12:00PM to 4:00PM EST

*Planning: Carlos Blanco, MD, PhD, Bethany Deeds, PhD, MA, Amy Goldstein, PhD. DESPR*

*Gaya Dowling, PhD, Elizabeth Hoffman, PhD. ABCD Study, Office Trans-NIH Initiatives*

Goal of meeting is to stimulate data analyses that lead to the development of targeted prevention intervention research. First meeting will focus on trauma and self-regulation and their roles in substance use initiation.



Adolescent Brain Cognitive Development®  
*Teen Brains. Today's Science. Brighter Future.*



[https://seiservices.zoom.us/webinar/register/WN\\_wZqT7vgTQ5-yNxIGBjtauA](https://seiservices.zoom.us/webinar/register/WN_wZqT7vgTQ5-yNxIGBjtauA)

# Prenatal Exposures Exacerbate Risks For Neurodevelopmental Disorders

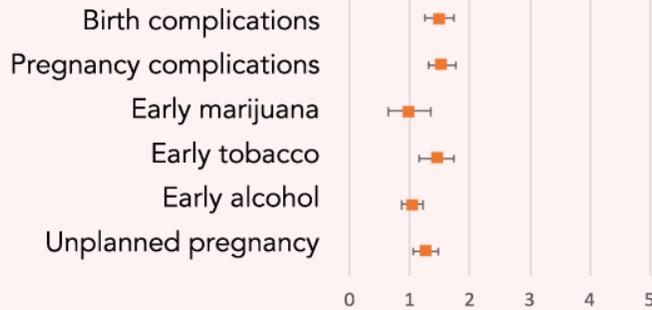
## RISK-CONFERRING PRENATAL EXPOSURES

### Selected infectious / inflammatory

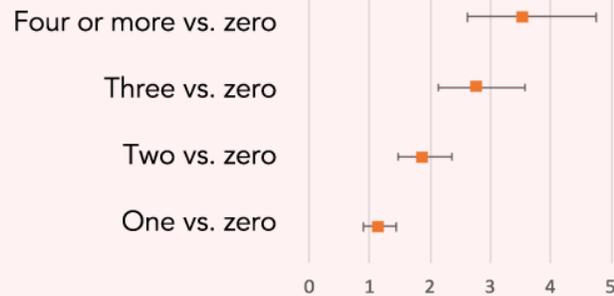
- Urinary tract infections
- Influenza • IL-6
- ? SARS-CoV-2

### Selected non-infectious

#### Individual exposures



#### Cumulative exposures



Odds of clinically significant total psychopathology symptoms (CBCL Total  $\geq 60$ ) at age 9-10 in the ABCD cohort, n=7,898

From Roffman et al., PLOS ONE, 2021

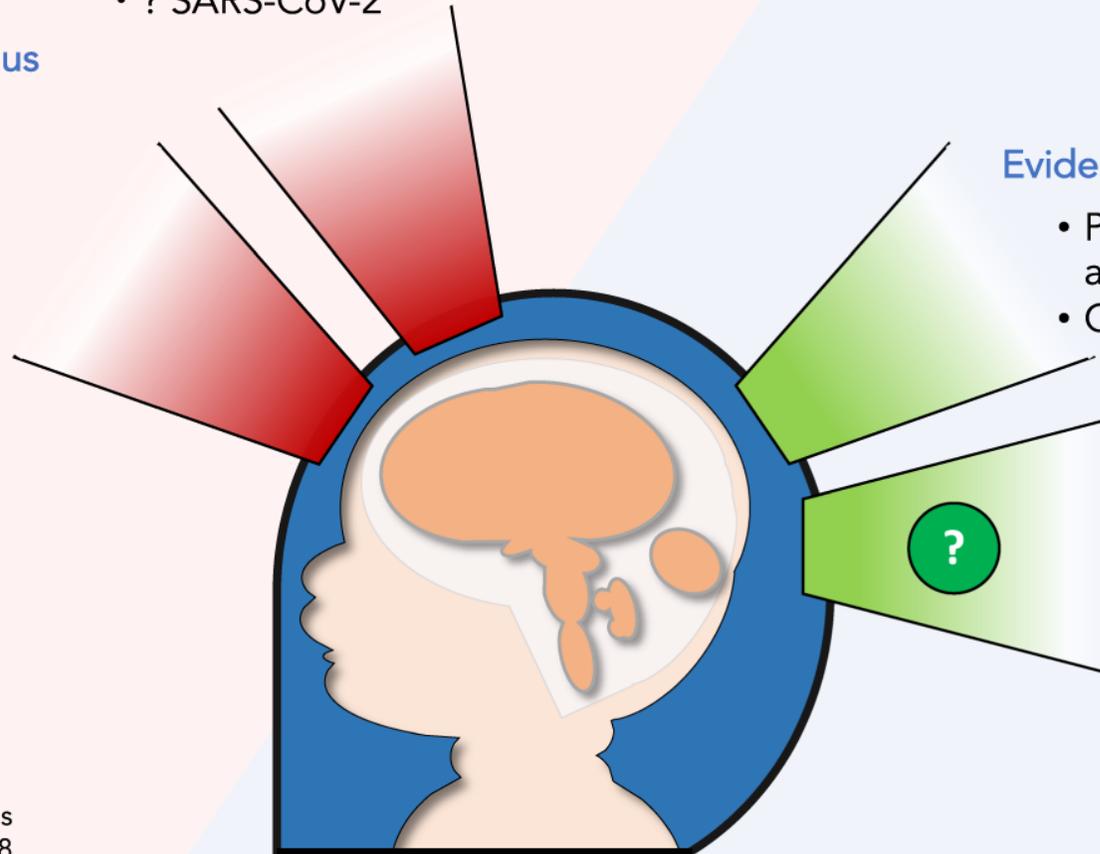
## PROTECTIVE PRENATAL EXPOSURES

### Evidence-supported

- Periconceptual folic acid
- Choline

### Exploratory / exposome

- Diet / nutrient intake
- Exercise
- Mental well-being
- Optimal prenatal care



# HBCD Study

Longitudinal study (n=7500) of individual brain developmental and behavioral trajectories from birth through childhood (ages 9-10) including *in utero* substance exposure and effects of adverse social environments

- OPEN ACCESS so data is accessible and can be analyzed in a timely manner
- Identify actionable items as results emerge pertinent to prevention, public policies and innovative products
- Opportunities for parallel projects to validate more accessible imaging tools such as EEG, NIRs
- COLLABORATIVE to increase comparativeness with results from other cohorts

EEG EVP, ERP



Pregnancy History



Biospecimen



Risk and protective factors



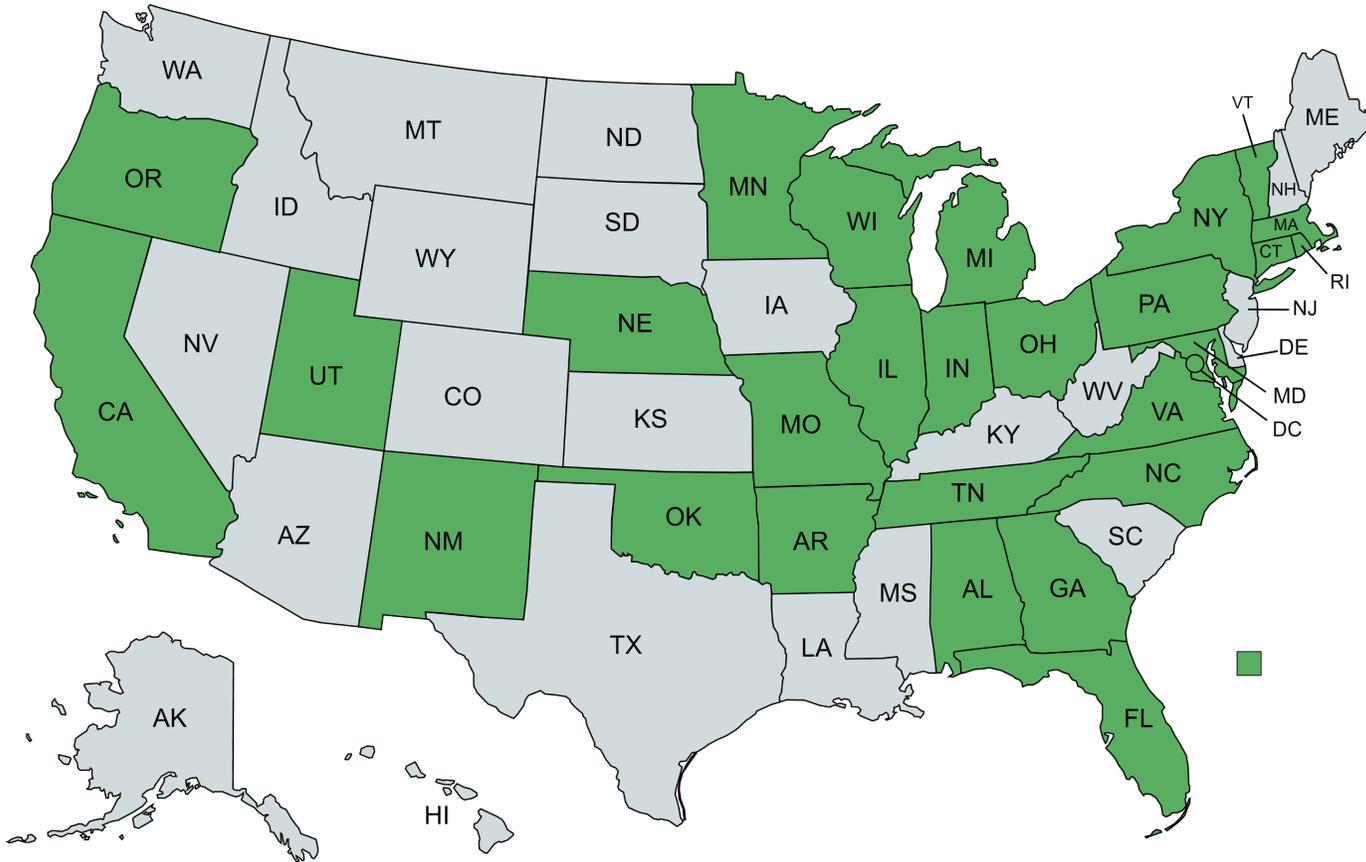
MRI



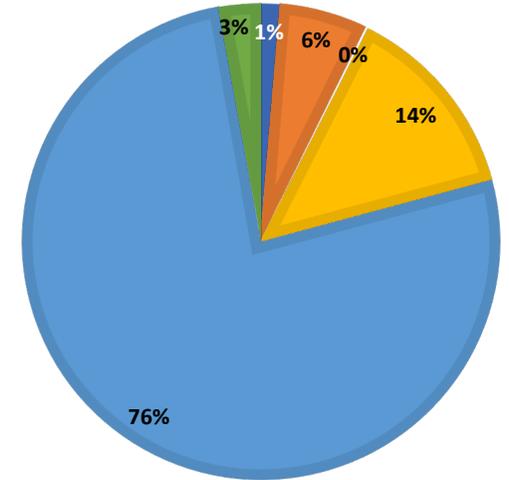
Behavioral, neurocognitive assessments



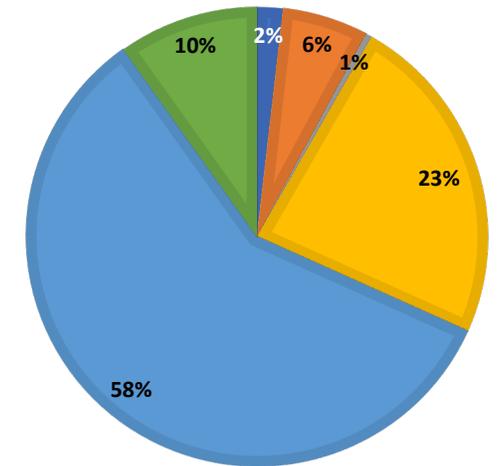
# Distribution of Applications Received



US Census



Recommended Sites



■ AI/AN ■ Asian ■ NH/PI ■ Black ■ White ■ More than 1 race

# 2021 HIV/AIDS Research Avenir Award Winners



**Matthew Akiyama, M.D., M.Sc.**

*Albert Einstein College of Medicine and Montefiore Medical Center*

**Leveraging HCV Phylogenetic Networks to Prevent HIV and Other Blood Borne Infections Among People Who Inject Drugs.** Engaging PWID is essential to ending HIV epidemic and eliminating viral hepatitis. Needle and syringe programs and MOUD have been challenging to implement in low- and middle-income countries. Dr. Akiyama's will characterize HCV phylogenetic networks to identify PWID who are highly central in injection networks and model the impact of targeted approaches to prevent HIV and other blood borne infections in Kenya, East Africa.



**Hansel Tookes, M.D., M.P.H.**

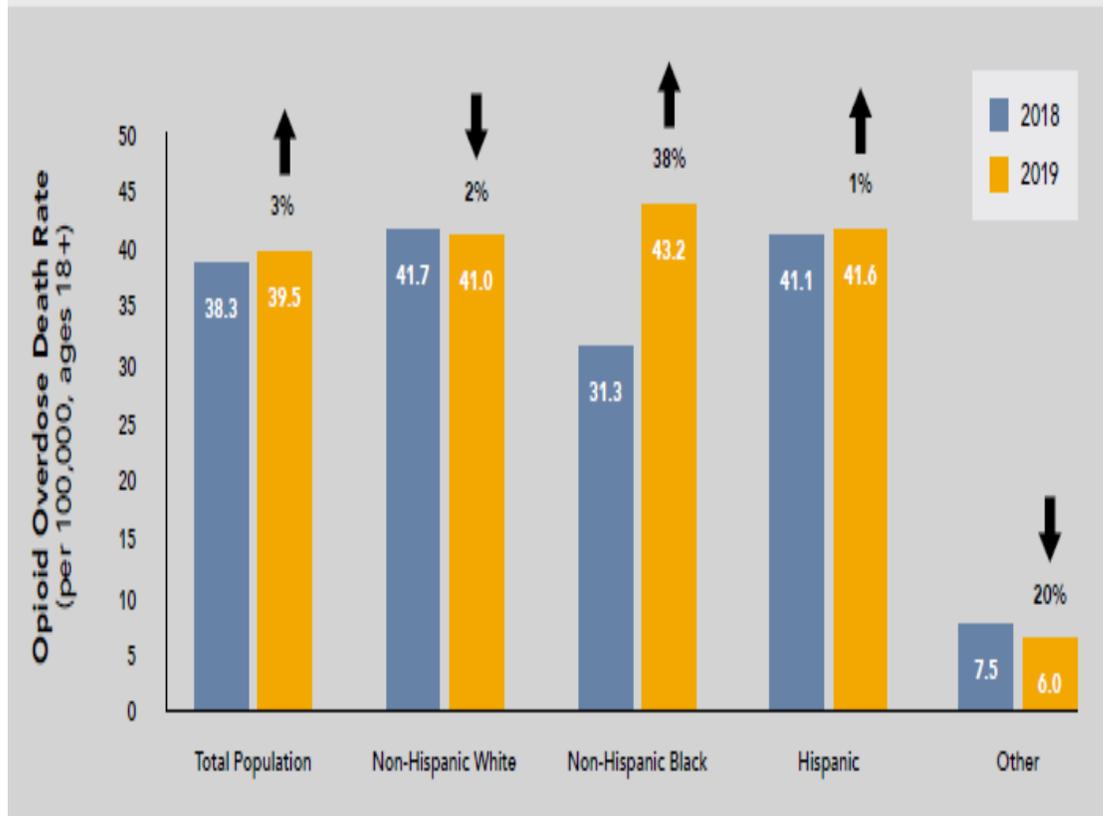
*University of Miami Miller School of Medicine*

**Tele-Harm Reduction for Rapid Initiation of Antiretrovirals in PWID: RCTI.** Tele-Harm Reduction seeks to engage PWID into HIV care by bringing healthcare out of the traditional healthcare system and leveraging syringe services programs as venues to enhance access to ARV, MOUD, and HCV cure.

# Mortality from Overdoses

## Healing Community Study

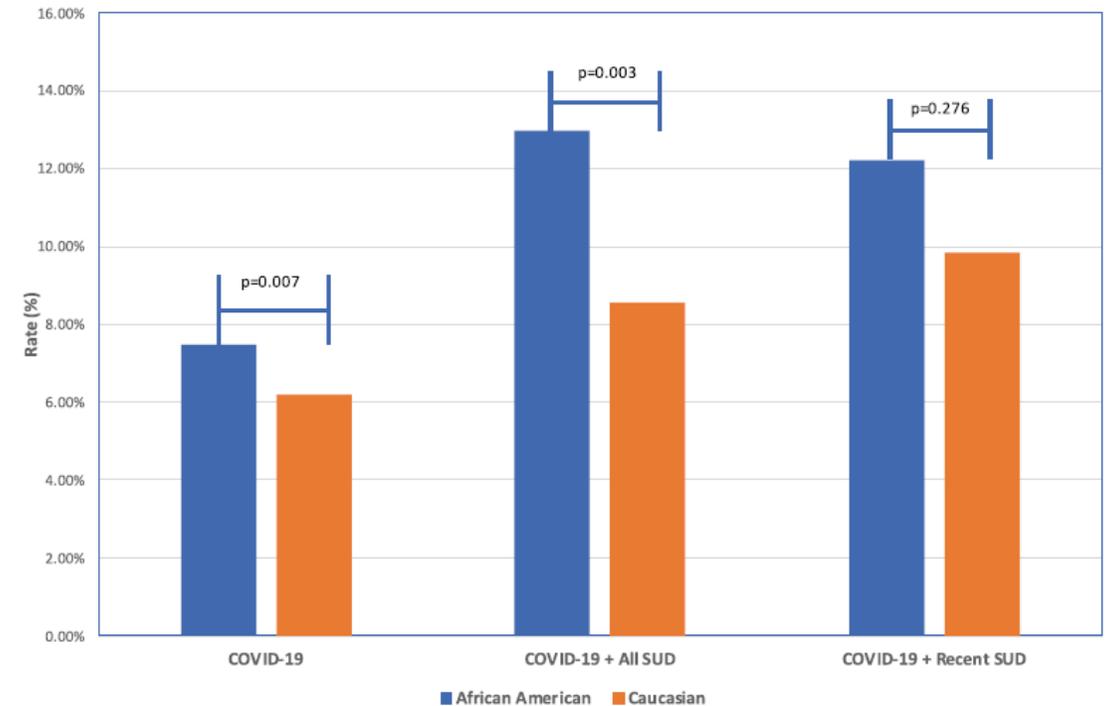
OPIOID OVERDOSE DEATH RATE TRENDS 67 HCS Communities By Race/Ethnicity, 2018-2019



# Mortality from COVID

## Electronic Health Records

A Death rates among COVID-19 patients with SUD



Mortality from COVID is higher in Individuals with SUD but these disparities are markedly exacerbated among African Americans

# UPDATE ON NIDA Racial Equity Initiative

- REI workgroups for the workplace, workforce, and research gaps finalizing NIDA REI Action Plan
- An RFI on the Proposed REI Action Plan will be published in early October
- Racial Equity Initiative Research funded in FY21:
  - 18 supplements in response to the NOSIs *Administrative Supplements to Support Research on Health Equity in NIDA-funded Grant Awards* and *Administrative Supplements to support engagement of functionally diverse teams to advance ongoing NIDA-funded research*
  - 3 supplements to support addiction science and related neuroscience pilots at NIMHD-funded Research Centers at Minority Institutions
  - 14 projects that characterize the impact of racism on drug use outcomes, research to ameliorate disparities in SUD care, and studies on culturally-tailored interventions, along with projects from underrepresented minority scientists

**THANK YOU!**