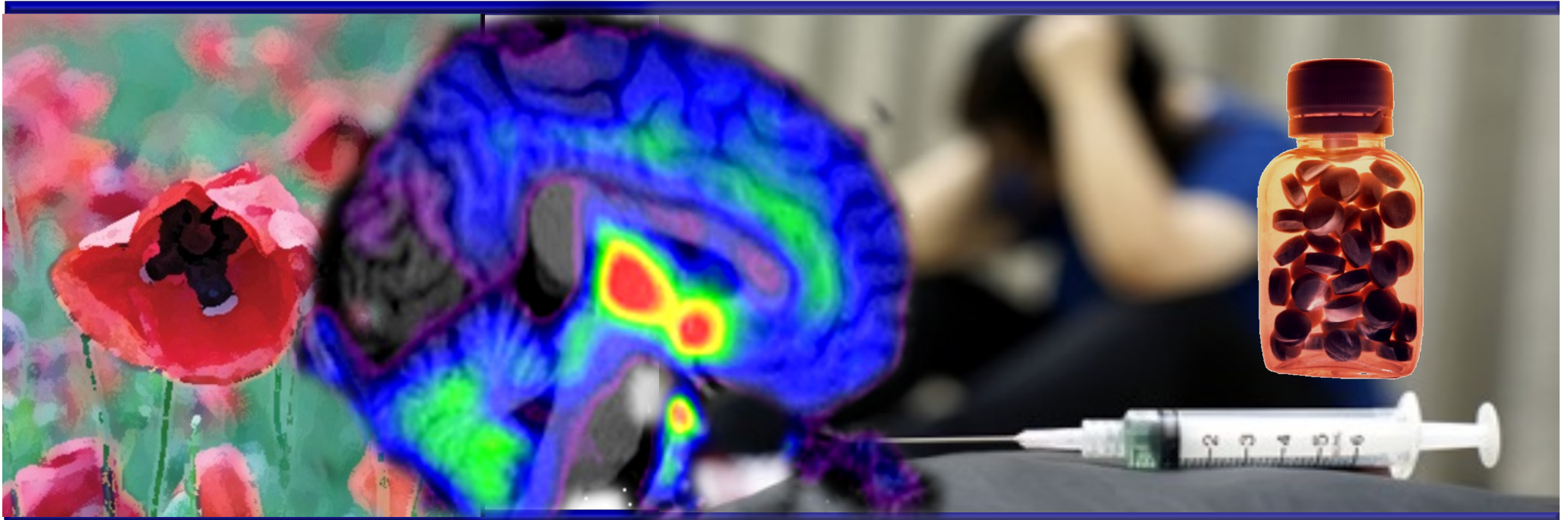


Epidemiology of Substance Use Disorders After COVID-19

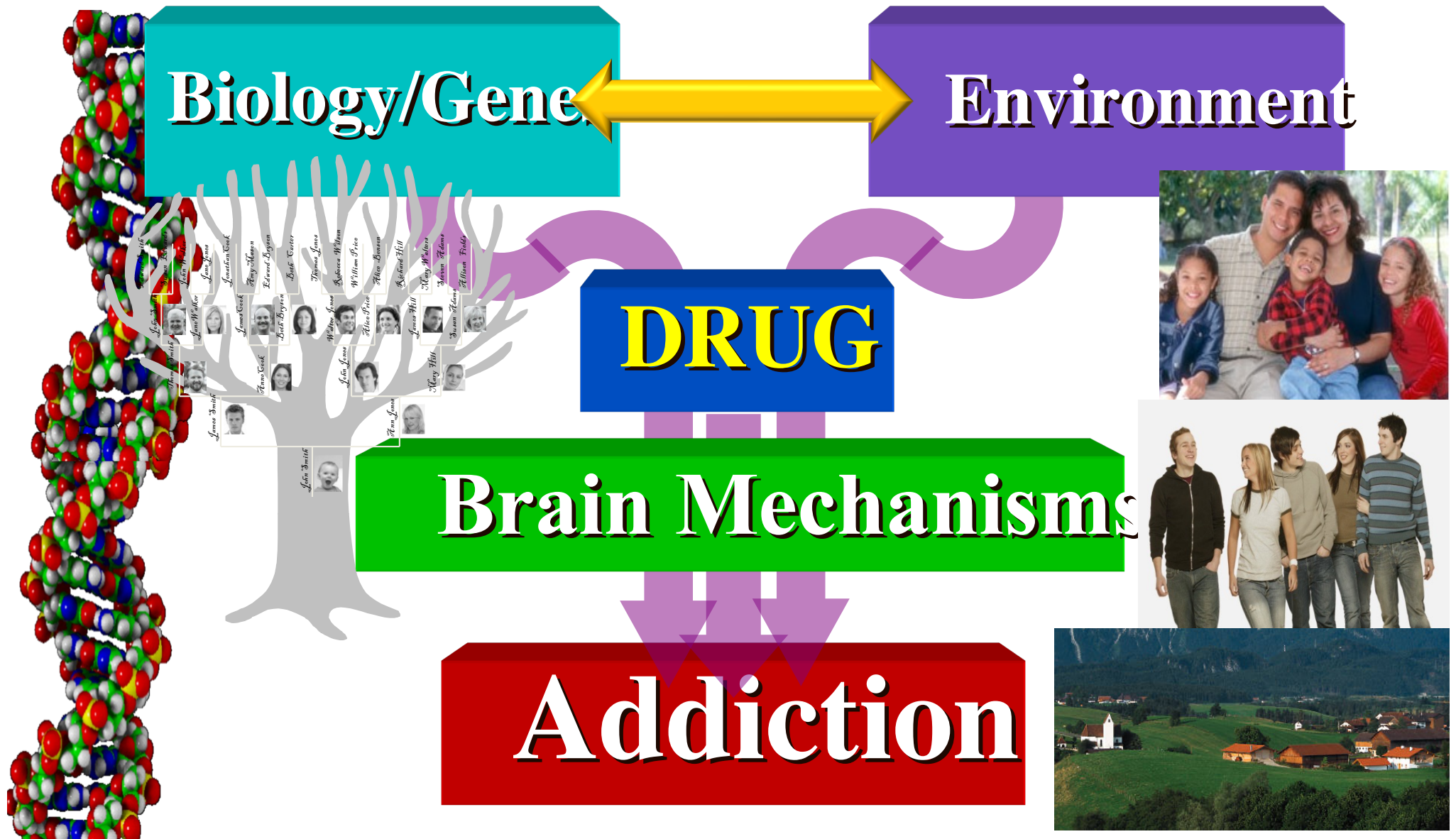


Carlos Blanco, M.D., Ph.D.
Director, Division of Epidemiology, Services and
Prevention Research
National Institute on Drug Abuse

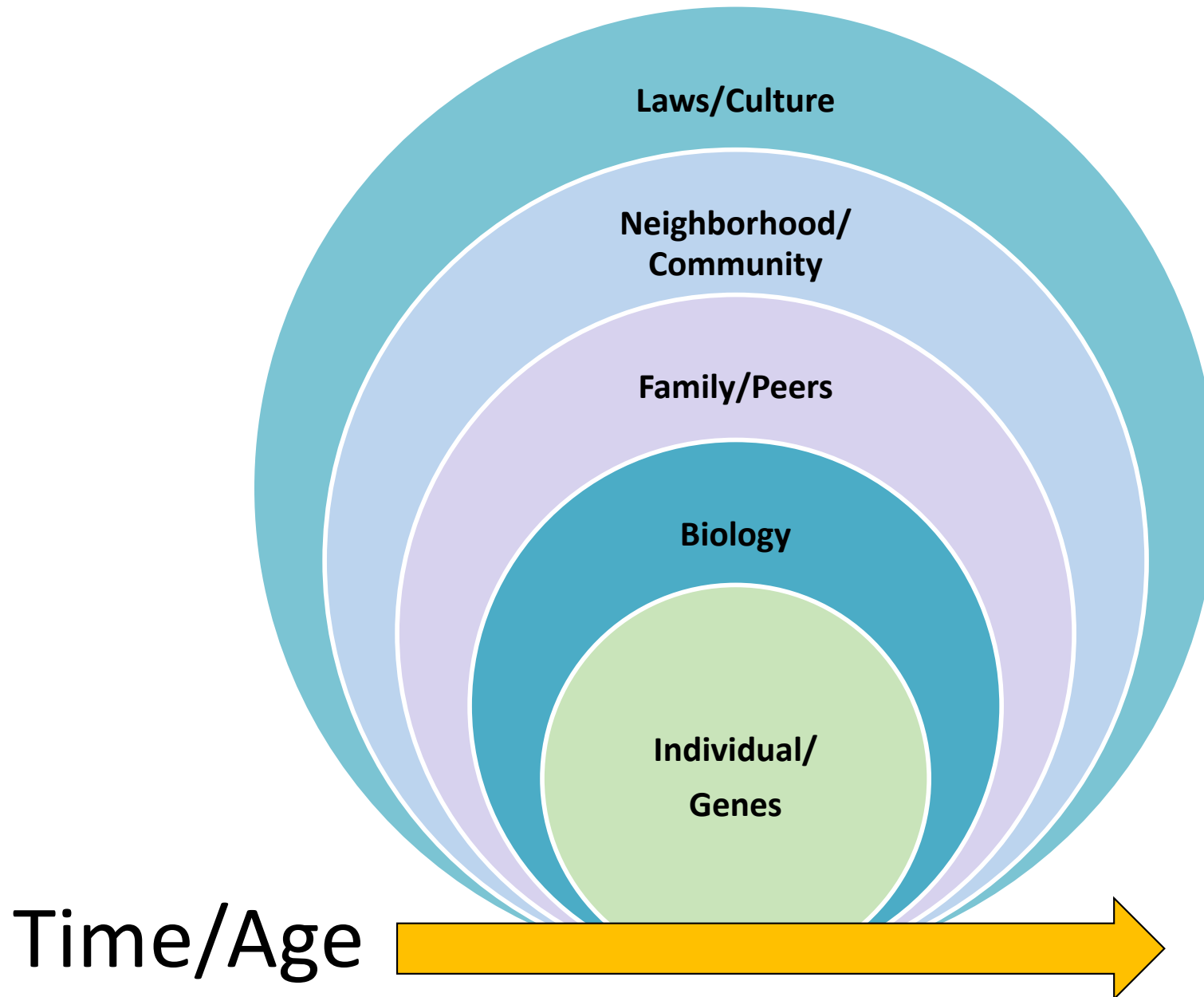


Dr. Blanco has no conflicts of interest to disclose

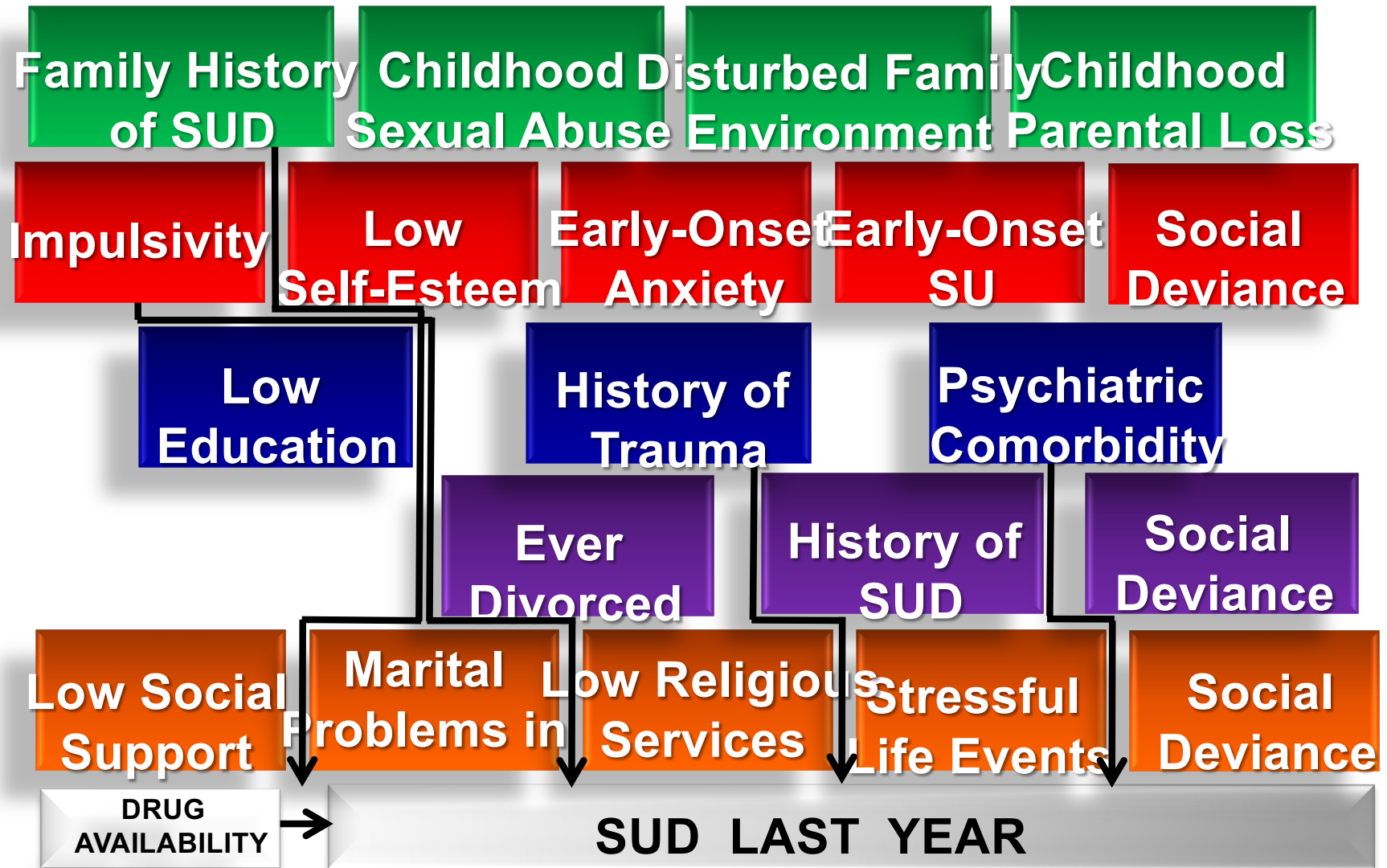
ADDICTION INVOLVES MULTIPLE FACTORS



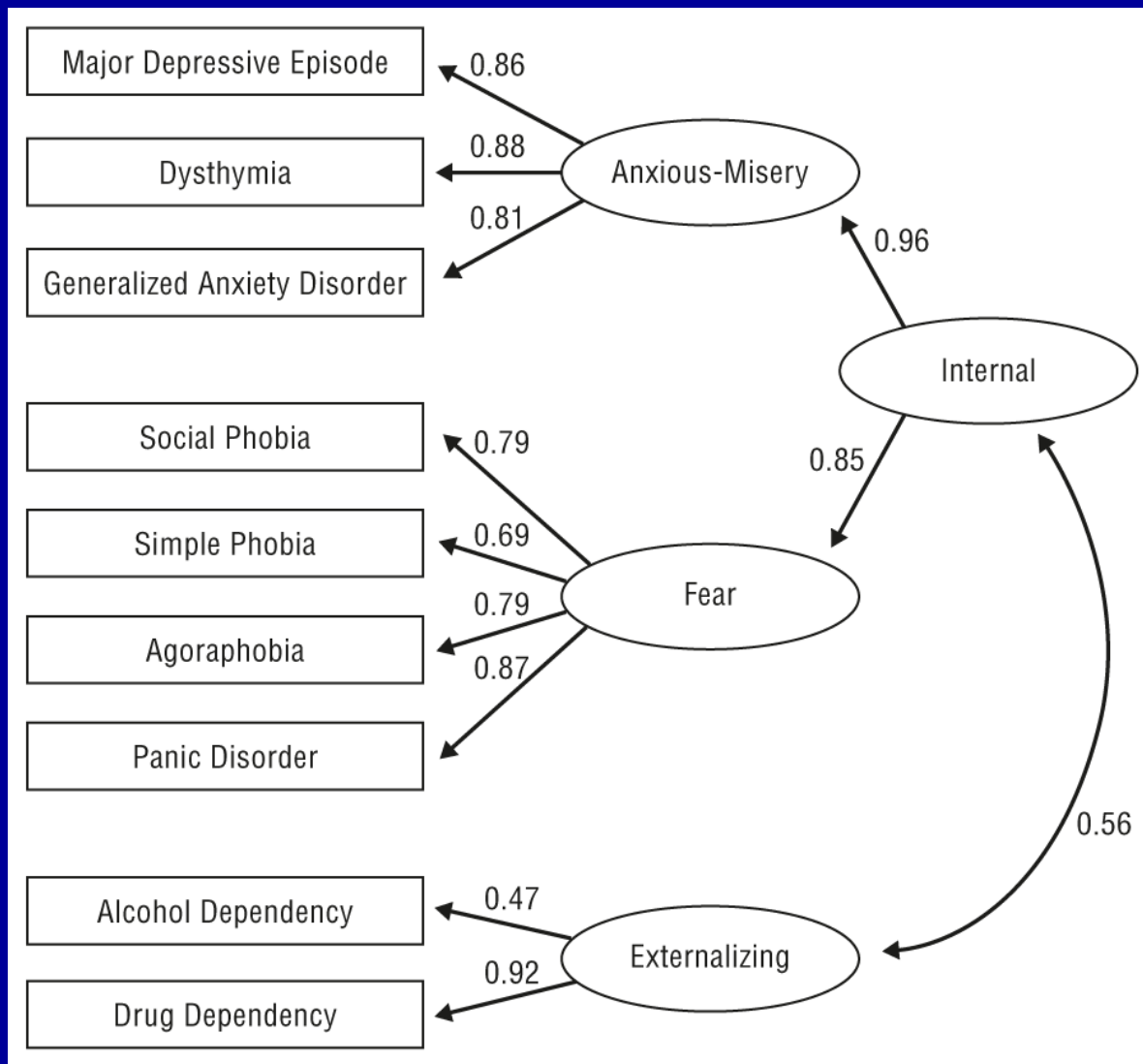
There are Multiple Risk Factors



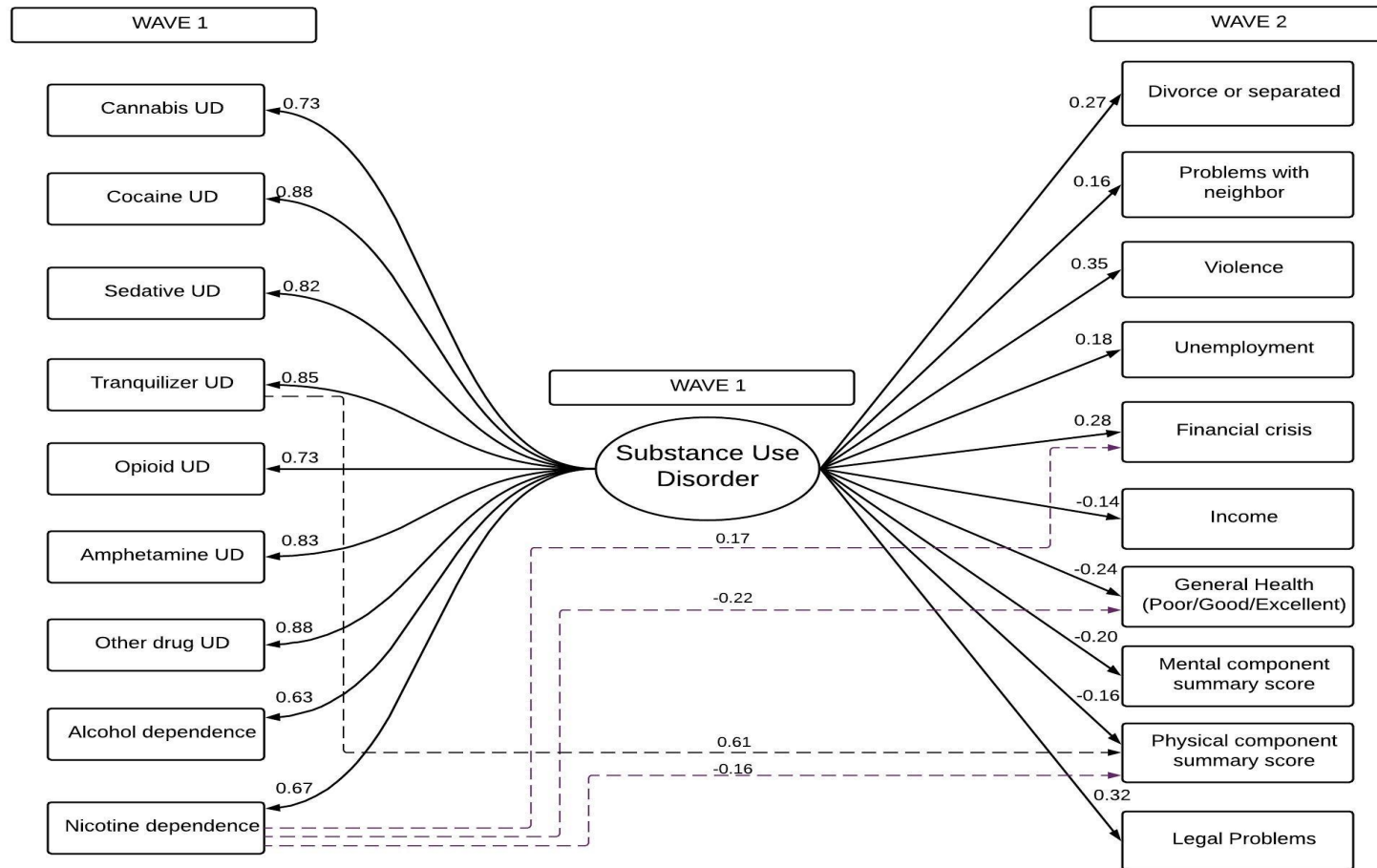
RISK FACTORS FOR SUBSTANCE USE DISORDER



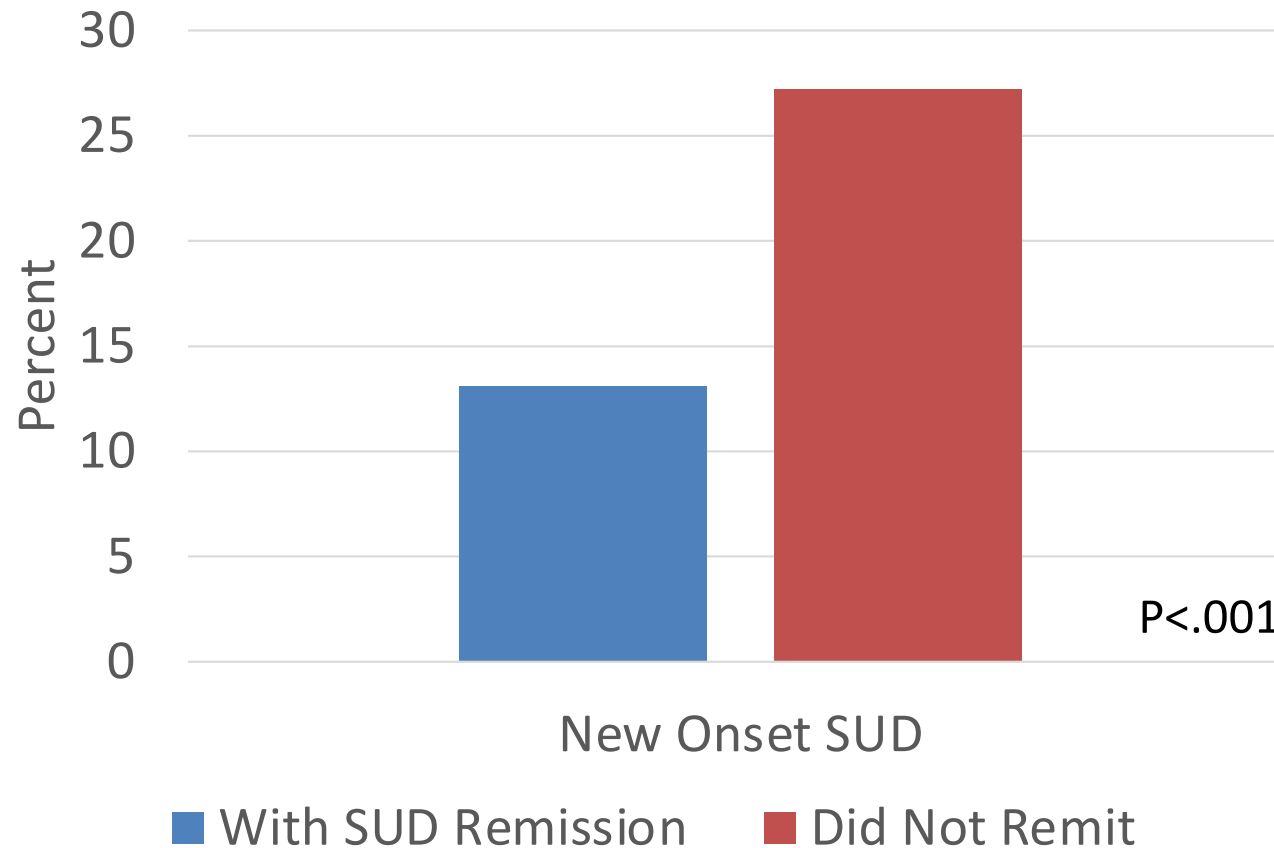
SUDs are part of a broader structure



Common and Specific Consequences of SUD



Switching Addictions?



Provisional* Drug Overdose Deaths 12-months ending in select months

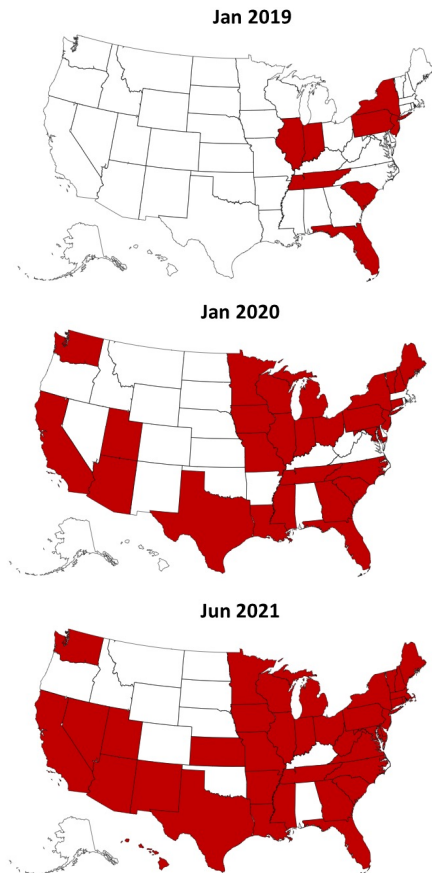
	ALL DRUGS	HEROIN	NAT & SEMI SYNTHETIC	METHADONE	SYNTHETIC OPIOIDS (mainly illicit fentanyl)	COCAINE	OTHER PSYCHO-STIMULANTS (mainly meth)
11/2021*	108,076	9,707	13,938	3,737	71,321	24,487	33,100
12/2021*	109,179	9,411	13,906	3,765	72,484	25,174	33,637
11/2022*	108,712	6,143	11,945	3,346	74,507	27,529	34,135
Percent Change 11/21-11/22	0.58%	-36.7%	-14.3%	-10.5%	4.5%	12.4%	3.1%

*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>

Why have synthetic opioids supplanted other opioids and used to contaminate other illicit drugs?

- Easier to produce than heroin (no opium poppy cultivation) – supply chain issues largely absent
- Synthesis is not complex (3-4 steps)
- More easily transported: a 40 g Altoids tin of illicit fentanyl powder is equivalent to ~ 1 kg of heroin
- Fentanyl high potency makes it easy for drug dealers to mix with other illicit drugs (heroin, cocaine and methamphetamine), which are then diluted to increase profits
- Profits much larger than for other illicit drugs including illicitly manufactured prescription pills (Oxycontin, Vicodin, Aderall, benzodiazepines) such that **fentanyl pills are now being disguised and sold as prescription drugs**

States with at least one positive xylazine detection, 2019-2021

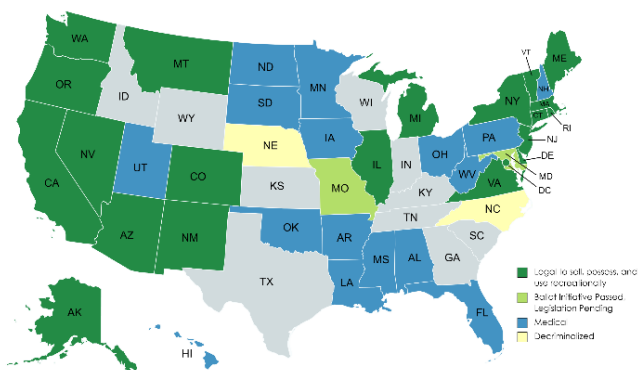


Kacinko, S et al., *J Analytical Toxicology*, 46(8), 911-917.

Xylazine

- Alpha-2 adrenergic agonist used as a veterinary sedative
- Inhibits release of norepinephrine, decreasing sympathetic activity
- By itself it induces hypoxia as severe as that from fentanyl but longer lasting
- When combined with Fentanyl it blocks the compensatory hyperoxemia observed with fentanyl (also with heroin)
- When combined with Fentanyl and Heroin it appears to extend the duration of their pharmacological effects (analgesia, respiratory depression, reward)
- Toxic doses in humans range from 40 to 2400 mg (0.6-34.3 mg/70 kg)
- Not reversed by naloxone
- Associated with severe tissue injury

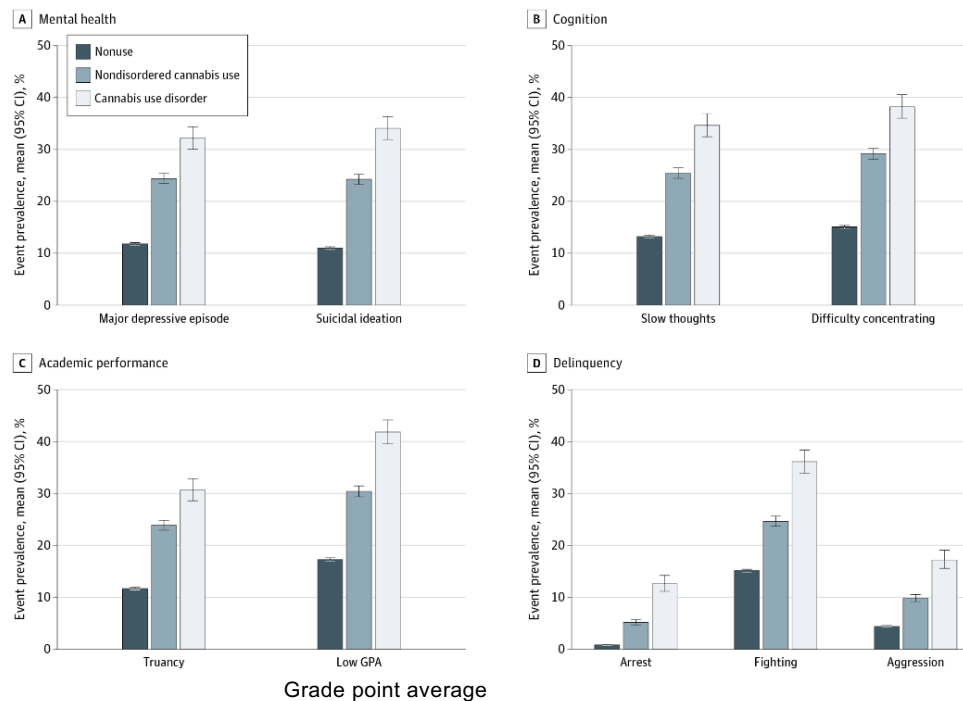
US State Cannabis Laws



38 States & DC with MML
 22 States & DC with Adult Use Laws

Adverse Adolescent Psychosocial Events Among Nonuse, Non-disordered Cannabis Use, and Cannabis Use Disorder

NSDUH Data 2015-2019



NDCU and CUD were significantly associated with adverse psychosocial events in a stepwise gradient manner

4/2023, The NORML Foundation, The Drug Policy Alliance, Mapchart

Sultan et al., JAMA Netw Open. 2023;6(5):e2311294.

Emerging Research Issues on E-cigarettes

- Potential benefits and harm at the individual and public health level
- E-cigarette use as cigarette-smoking cessation
- E-cigarette as a gateway to combustible cigarette use (especially among youth)
- E-cigarette use leading to re-normalization of cigarette smoking (especially among youth)
- Exposure of nicotine to the developing brain and how changes in e-cigarette devices may impact this exposure
- Concurrent use of e-cigarettes with marijuana and/or other substances

Viewpoint

June 10, 2020

User-Centered Psychiatric Epidemiology

Carlos Blanco, MD, PhD¹; Marsha F. Lopez, PhD, MHS²; Amy B. Goldstein, PhD³

» [Author Affiliations](#) | [Article Information](#)

JAMA Psychiatry. 2020;77(10):992-993. doi:10.1001/jamapsychiatry.2020.1361

Despite its solid theoretical foundations, sophisticated conceptual models, and ability to generate findings generalizable to community populations, epidemiology's potential for influencing advances in our understanding and treatment of substance use and other psychiatric disorders remains underused. Research on the etiology of psychiatric disorders tends to be guided by biologically based approaches, such as neuroimaging, animal models, and human organoids, rather than by population-based science; workforce distribution and availability of services seldom match estimates of need; preventive interventions are often based on theoretical models from prevention science, rather than from epidemiologic findings; and policy development rarely includes a process of systematic incorporation of epidemiologic evidence.

Population Assessment of Tobacco and Health (PATH) Study

PATH Study Overview

- A nationally representative longitudinal study of tobacco use, its determinants, and its impacts
- Funded by the FDA Center for Tobacco Products
- Administered by the National Institute on Drug Abuse, NIH
- Developed by FDA and NIH with assistance from:
Westat and the Westat Scientific Partners

Principal Investigator Andrew Hyland, Roswell Park Cancer Institute

Geisel School of Medicine at Dartmouth
Medical University of South Carolina
New York University
Roswell Park Cancer Institute

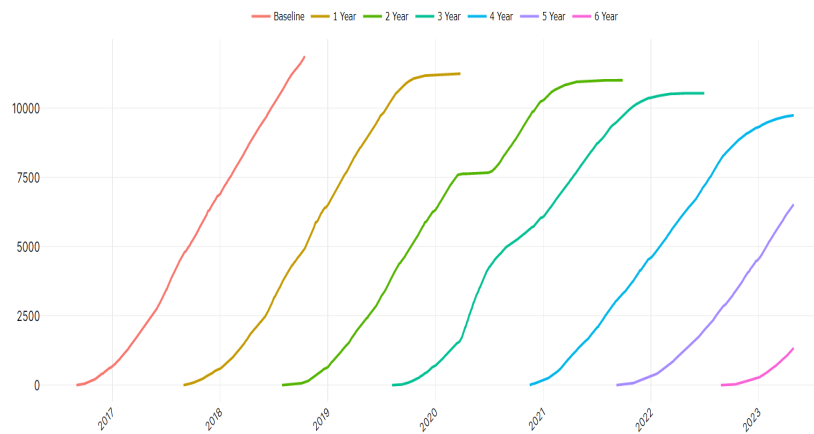
Rutgers University
Truth Initiative
University of California San Diego
University of Minnesota
University of Waterloo

Longitudinal Study Design To Assess:

- Tobacco product use and changes **over time**
- Tobacco product use **initiation, cessation, and relapse**
- Poly-tobacco **use and switching** between tobacco products
- Emergence of **addiction and dependence**
- **Health conditions** potentially related to tobacco use
- **Exposures** from tobacco product use and related biomarkers
- **Changes** in awareness, knowledge, attitudes, and beliefs about tobacco products
- The **evolving** tobacco product market, regulatory activities, and tobacco product use
- **Measures** of tobacco use, health, regulatory domains, and mediators/moderators
- **Tracking of changes** wave-to- wave, overall and by subgroup

Adolescent Brain Cognitive Development Study

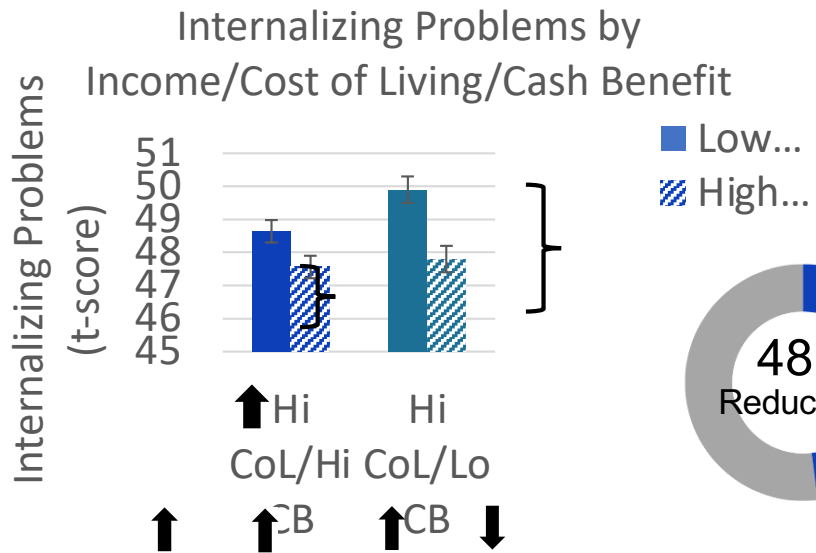
97.1% Percent Retained



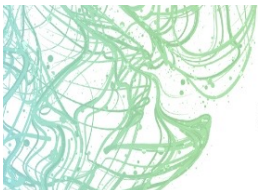
PUBLICATIONS
N=562



Antipoverty Programs Associated with Reduced Disparities in Brain Development and Mental Health

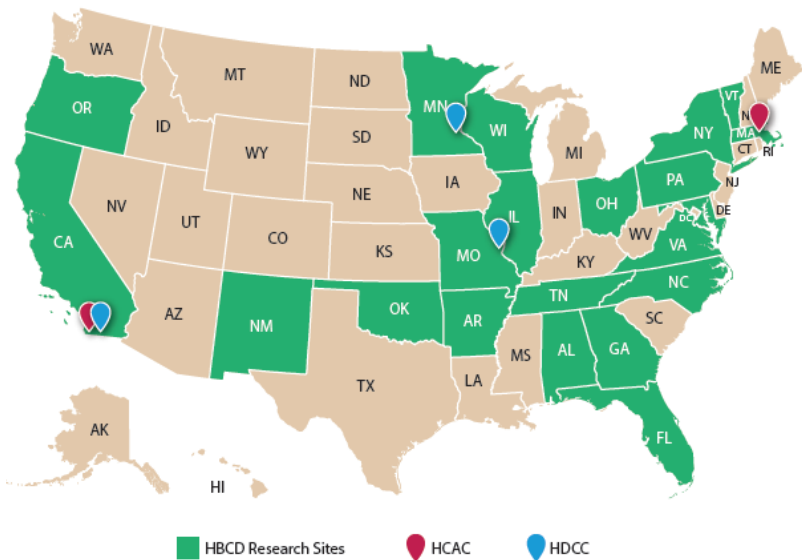


CoL: Cost of Living
CB: Cash Benefit



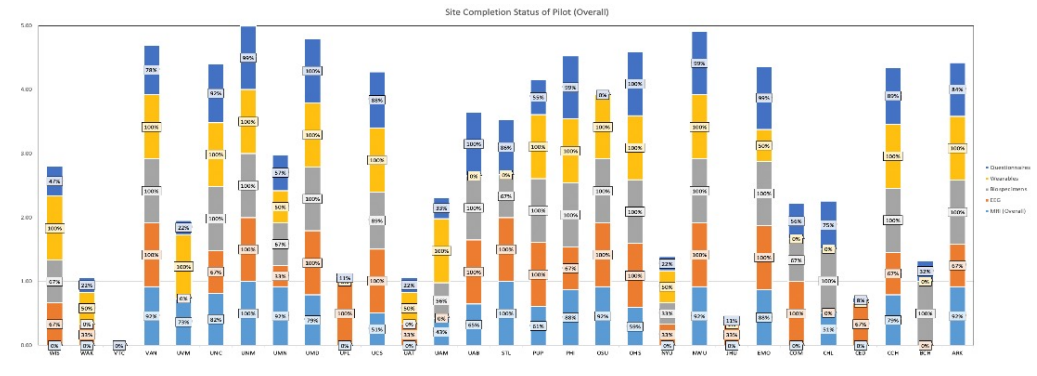
HEALTHy Brain and Child Development Study

- Funded through partnership of NIH Institutes, Centers, and Offices including HEAL
- Longitudinal study of normative neurodevelopment **from birth to 9-10 years** that will assess impact of *in utero* exposures to drugs and harmful environments
- Will enroll approximately **7,500 families** across the country



Pilot Study initiated in all sites

- 330 parents, 240 children
- 3 timepoints tested



- Enrollment of study cohort expected in May
- Child Welfare & Research workshop in development

Viewpoint

October 19, 2022

Implications of Telepsychiatry for Cost, Quality, and Equity of Mental Health Care

Carlos Blanco, MD, PhD¹; [Melanie M. Wall, PhD²](#); Mark Olfson, MD, MPH²

[» Author Affiliations](#) | [Article Information](#)

JAMA Psychiatry. 2022;79(12):1147-1148. doi:10.1001/jamapsychiatry.2022.3330

The COVID-19 pandemic has triggered a rapid expansion of telepsychiatry. A 2022 study of 126 million patients across all 50 states found that 39% of mental health visits were virtual.¹ It is expected that telepsychiatry will continue to expand after the COVID-19 pandemic subsides.² Advantages of telepsychiatry include greater access, flexibility, convenience of routine care, and potential for increased privacy. However, in contrast to the decades of accumulated knowledge concerning cost, quality, and equity of in-person care, our understanding of telepsychiatry is still a nascent science.³ We outline some of the choices that will have to be made as telepsychiatry continues to expand and will have far-reaching implications for multiple stakeholders including, among others, regulators, payers, clinicians, health care systems, and patients.

PERSPECTIVE

Data needs and models for the opioid epidemic

Carlos Blanco ¹✉, Melanie M. Wall² and Mark Olfson²

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The evolving nature of the opioid epidemic and continued increases in overdose deaths highlight a need for fundamental change in the collection and use of surveillance data to link them to implementation of effective service, treatment, and prevention approaches. Yet at present, the quality and timeliness of US surveillance data often limits data-driven approaches. We review current information needs, summarize limitations of existing data, propose complementary surveillance resources, and provide examples of promising approaches designed to meet the needs of data end-users. We conclude that there is a need for an approach that focuses on the needs of data end-users, such as public health systems leaders, policy makers, public, nonprofit and prepaid healthcare systems, and other systems, such as the justice system. Such an approach, which may require investments in new infrastructure, should prioritize improvements in data timeliness, sample representativeness, database linkage, and increased flexibility to adapt to shifts in the environment, while preserving the privacy of survey participants. Use of simulations, distributed research and data networks, alternative data sources, such as wastewater or digital data collection and use of blockchain technology, are some of promising avenues toward an improved and more user-centered surveillance system.

Molecular Psychiatry (2022) 27:787–792; <https://doi.org/10.1038/s41380-021-01356-y>

Major Initiatives in NIDA's Services Research Branch



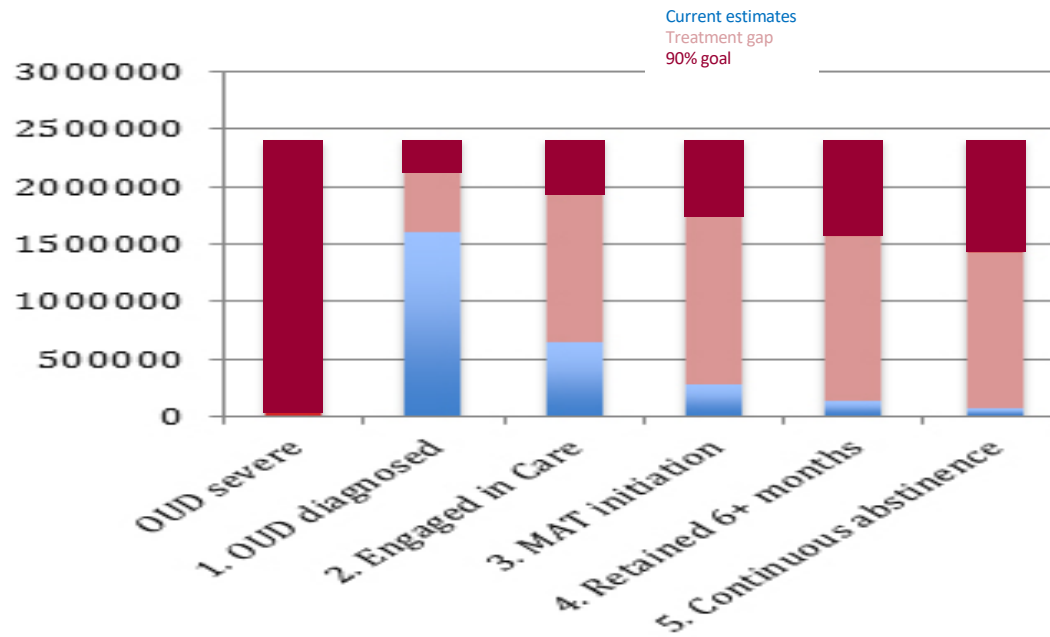
Fentanyl OUD (fOUD) and OUD Clinical Research Priorities

Research Gaps	Goal
Optimal strategies to treat individuals with fOUD	Determine comparative effectiveness of methadone, sublingual buprenorphine, XR-buprenorphine and NXT-XR
Induction protocols for treatment of fOUD and comparisons of doses	Determine doses needed to initiate and retain in treatment individuals with fOUD
Improve entry into and retention in MOUD treatment	Expand the number of individuals suffering from OUD that receive MOUD treatment and increase treatment retention
Treatment of mild or subthreshold OUD	Determine the role of NXT-XR or buprenorphine in overdoses in high-risk opioid misusers
Treatment of adolescents with OUD	Determine the efficacy of the various MOUD and best strategies to increase retention and recovery
Patient-specific optimal medication, doses and length of treatment	Personalize interventions to increase retention and recovery
Treatment of patients with OUD and co-morbid psychiatric disorders or with co-morbid pain	Improve outcomes on patients with dual diagnoses

Volkow and Blanco AJP in press

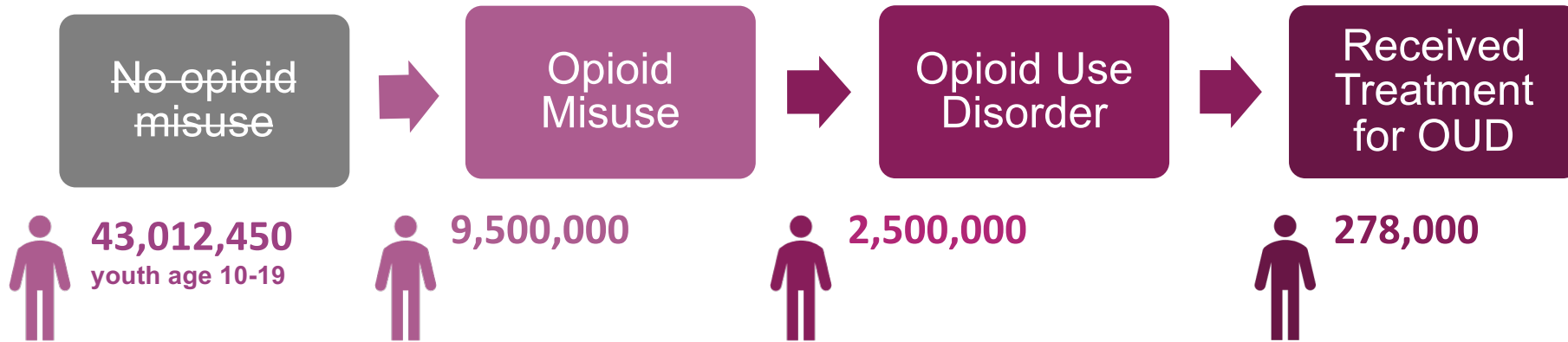
Treatment is not nearly enough

OUD Cascade of Care in USA



Williams AR, Nunes E, Olfson M. Health Affairs Blog, 2017

SUD/ODU Prevention Cascade in US



Data Source: National Survey on Drug Use and Health

- **Social determinants of health**
- Interventions informed by scientific and technological advances
- Implementation, scale-up and sustainment of prevention services

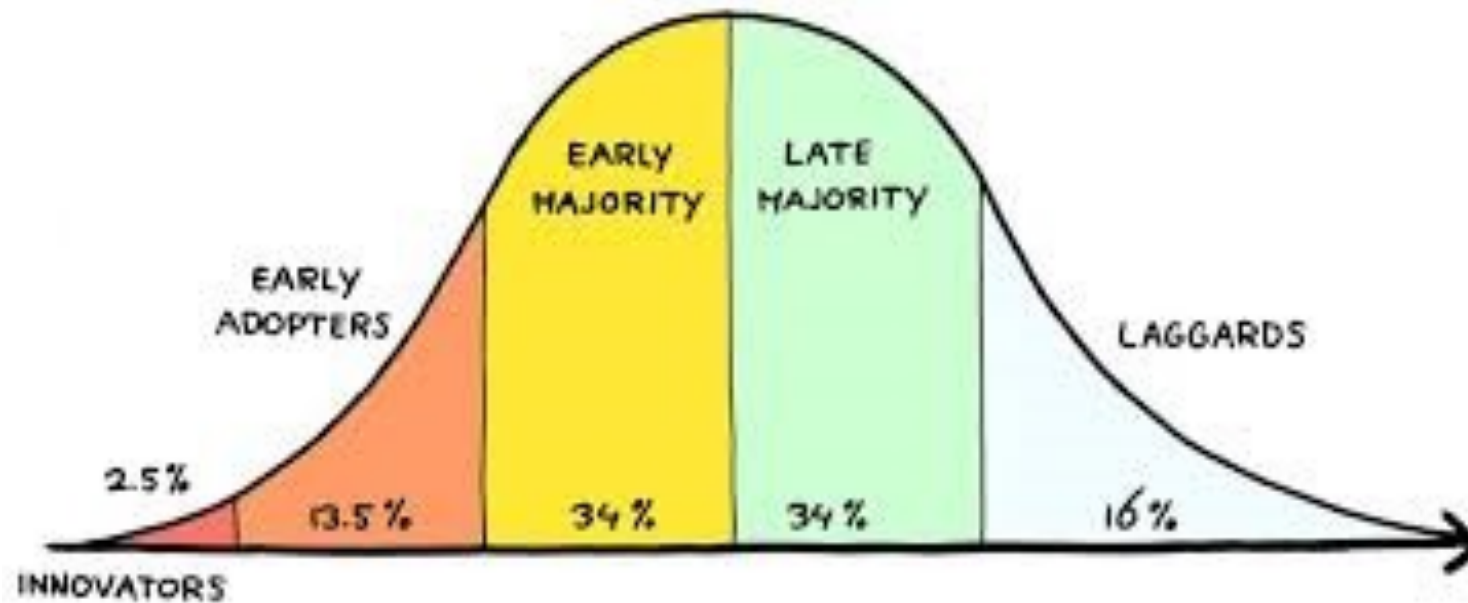
**INFRASTRUCTURE NEEDED TO DEPLOY
AND SUSTAIN PREVENTION**

Develop a Learning Health Care System

- Using *Public Health Needs* to *Generate Meaningful Research Questions*
- Ensuring that *Research Findings are Applied to Practice*

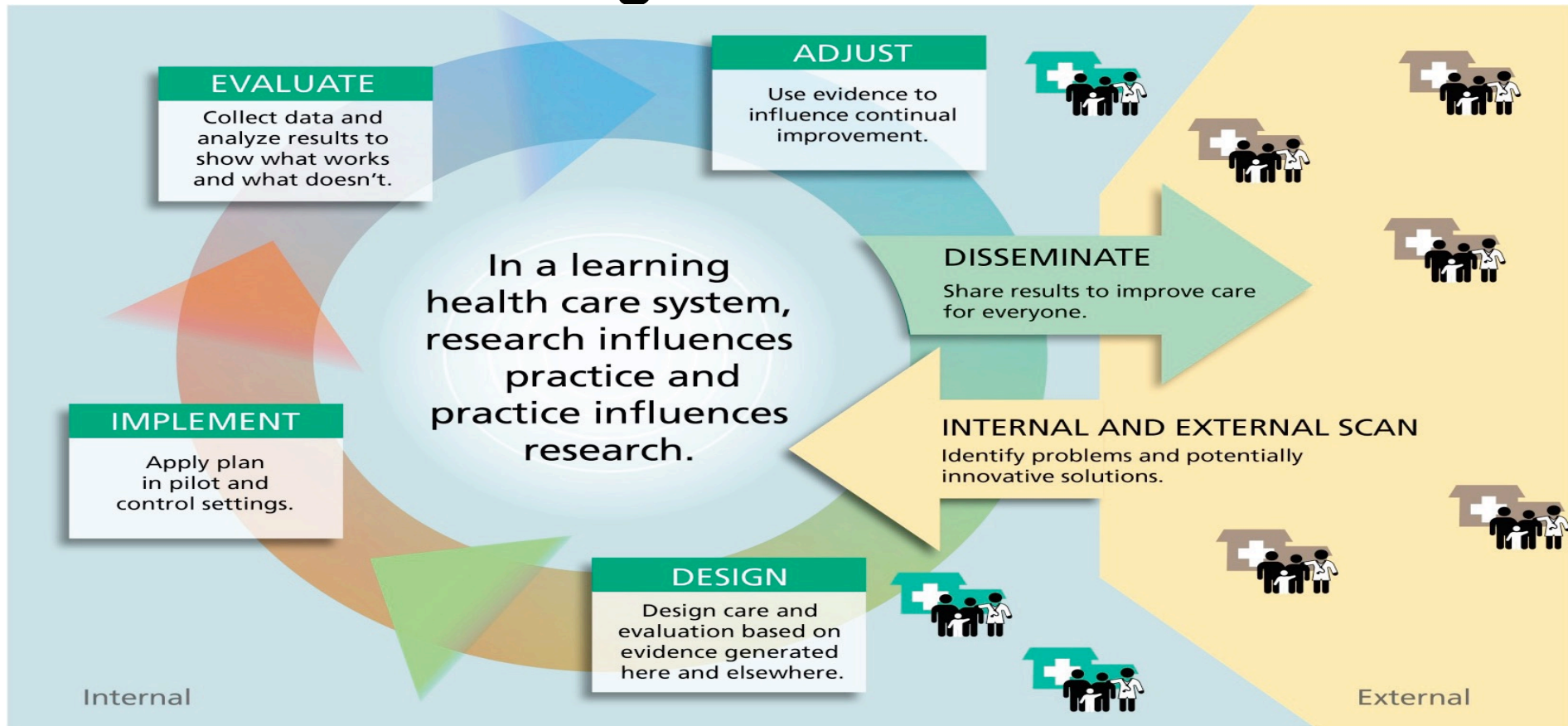


Traditional View of Innovation: Top Down



Rogers, 1962

LHS : Dialogue and Iteration



Greene et al., Ann Int Med, 2012