

# HIV/AIDS and Drug Abuse: *The Promise of Integrated Care*

Redonna K. Chandler, Ph.D.

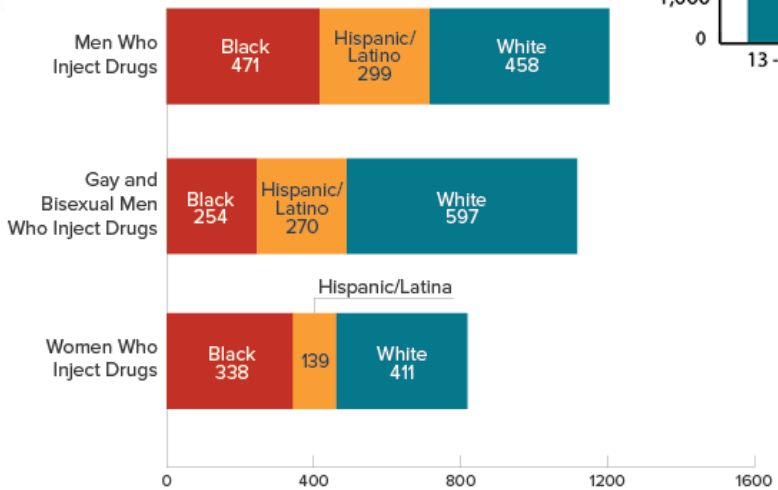
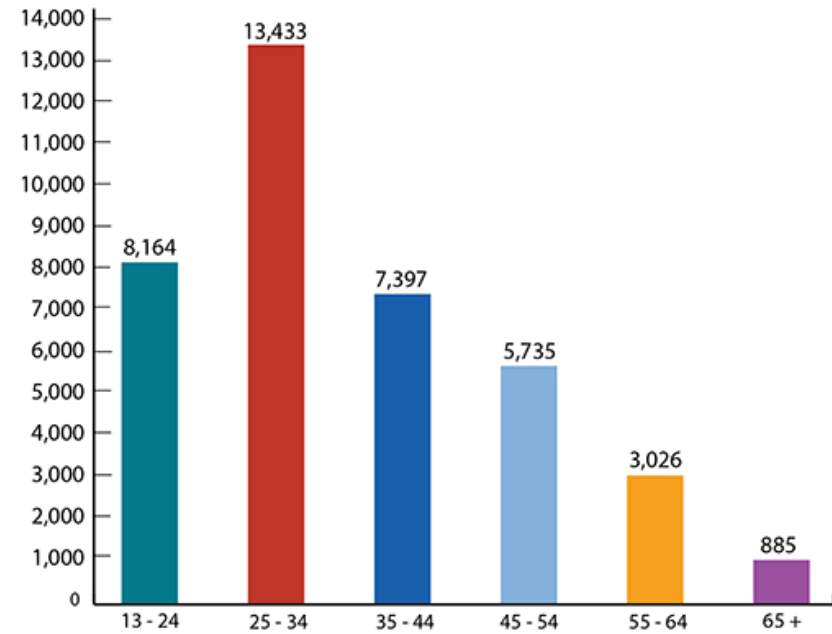
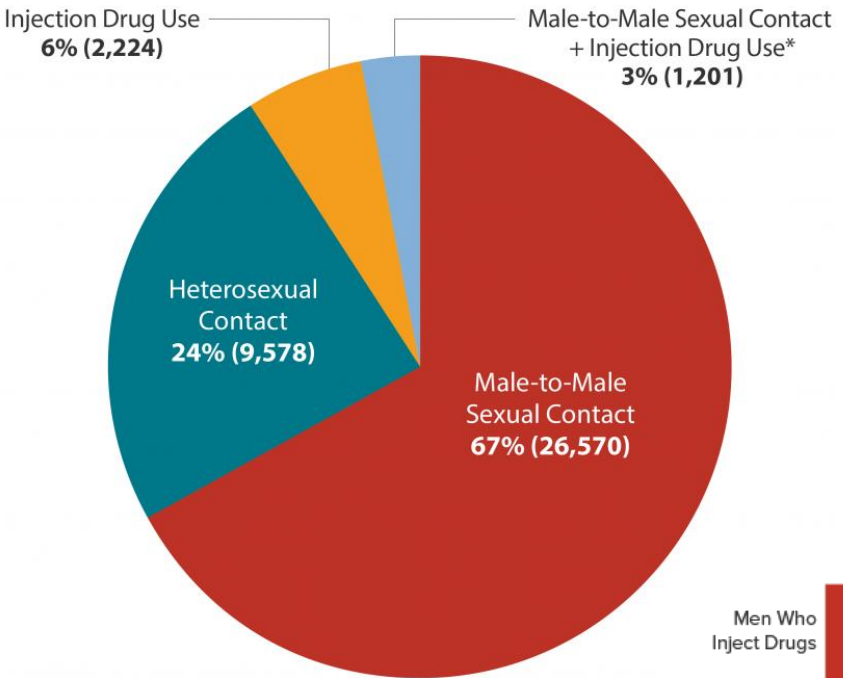
Director, AIDS Research Program & HEALing Communities Study

National Institute on Drug Abuse

June 4, 2019



# New HIV Diagnoses in the United States by Transmission Category, Race & Age, 2016-2017

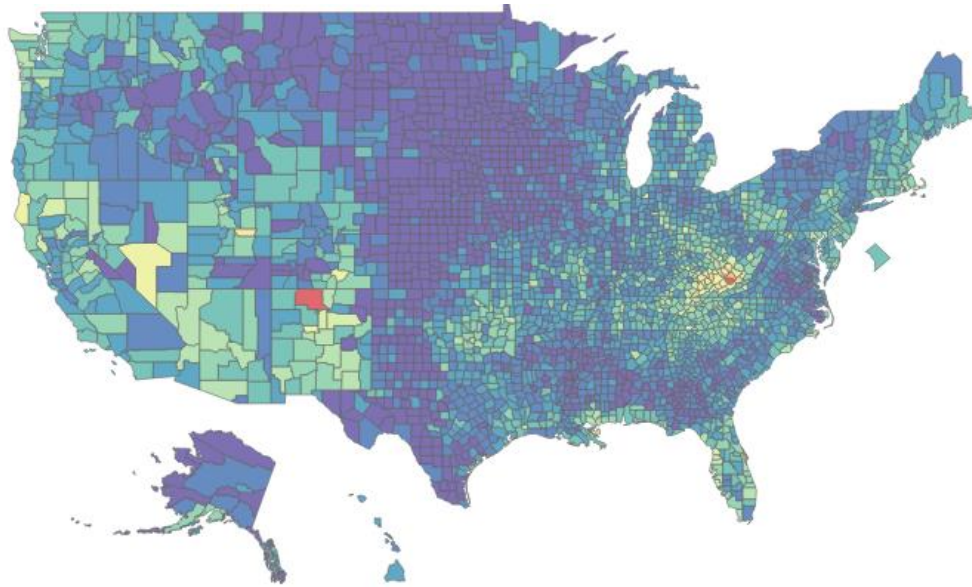


Number of diagnoses

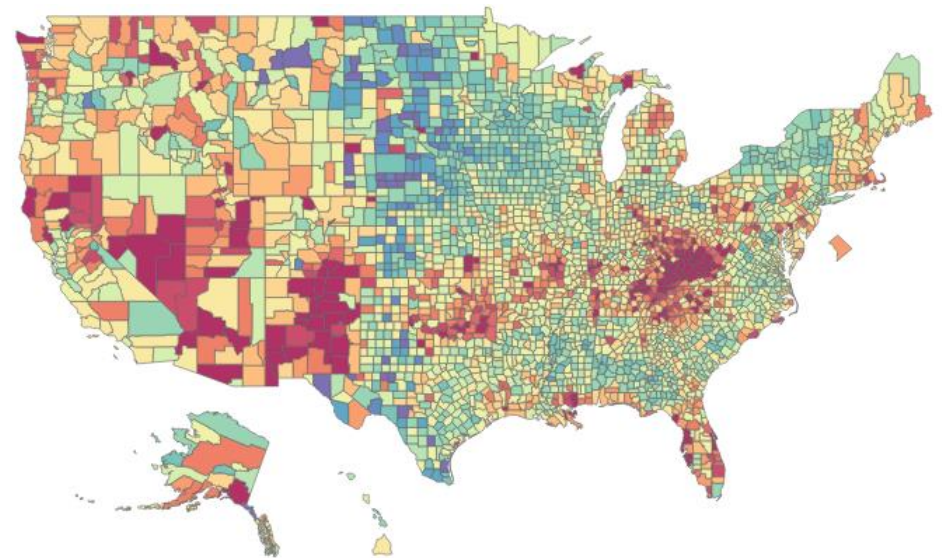
# The Crisis: National Overdose Death Rates

In **2017**, there were **70,237** overdose deaths (9.6% higher than 2016)

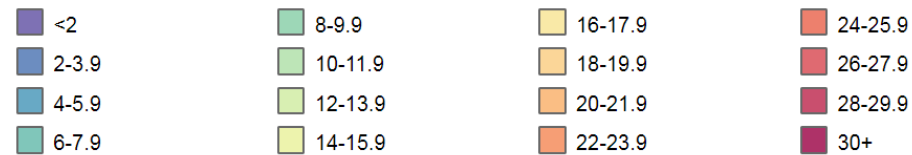
**1999**



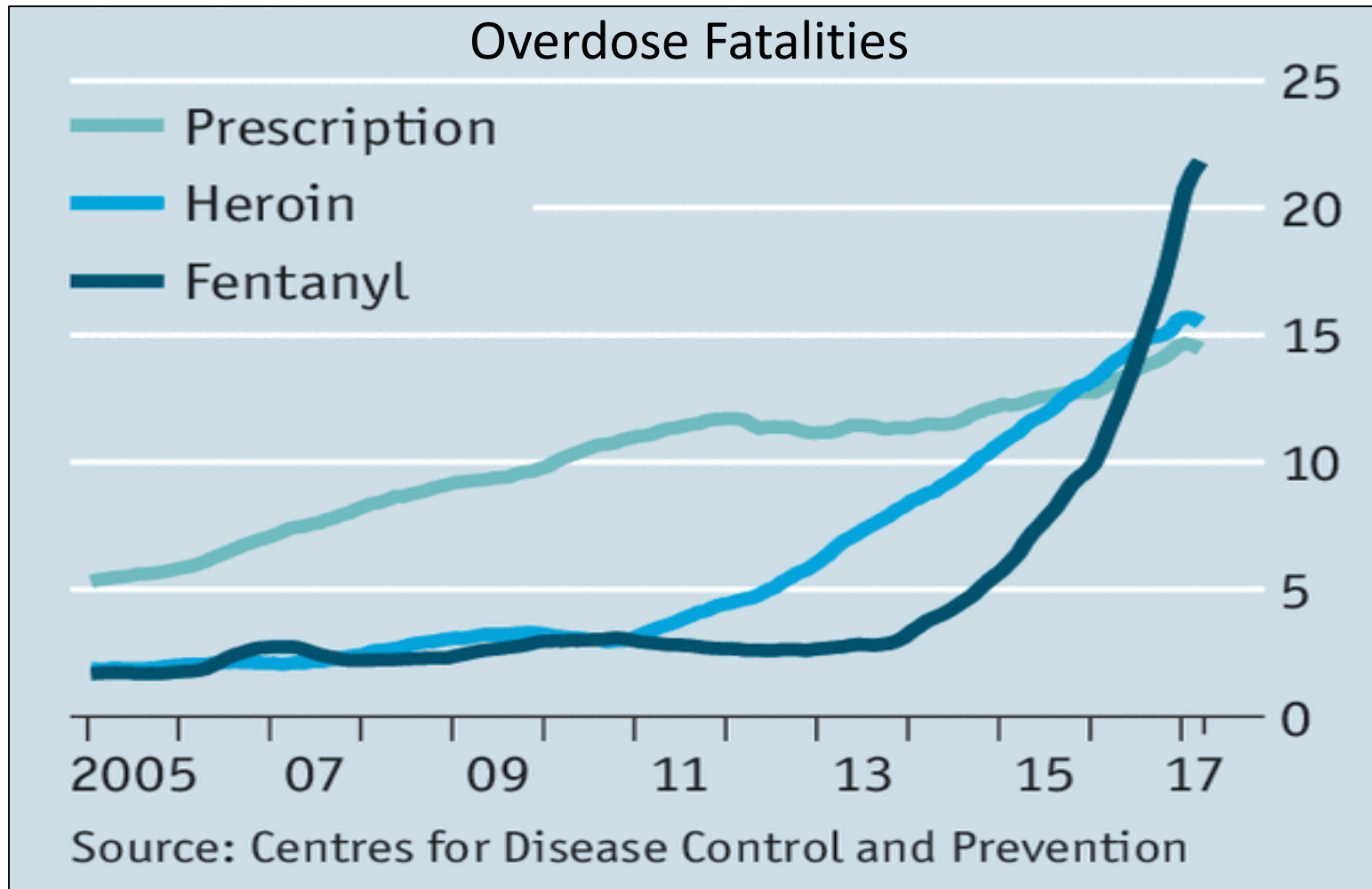
**2016**



Legend for estimated age-adjusted death rate (per 100,000 population)

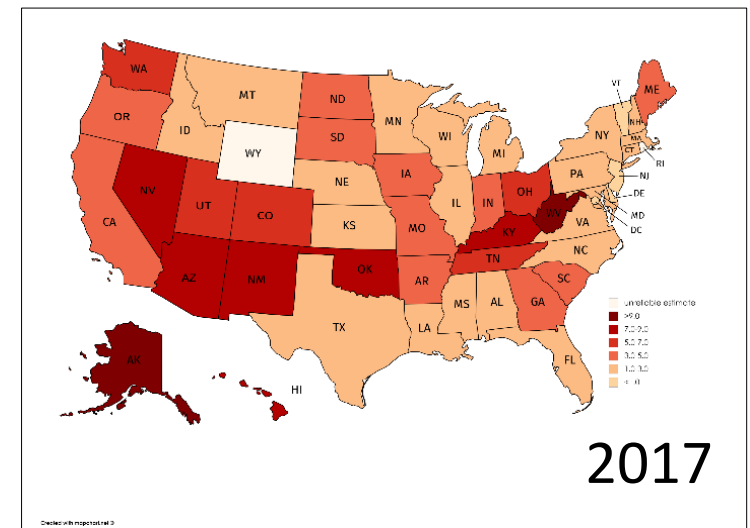
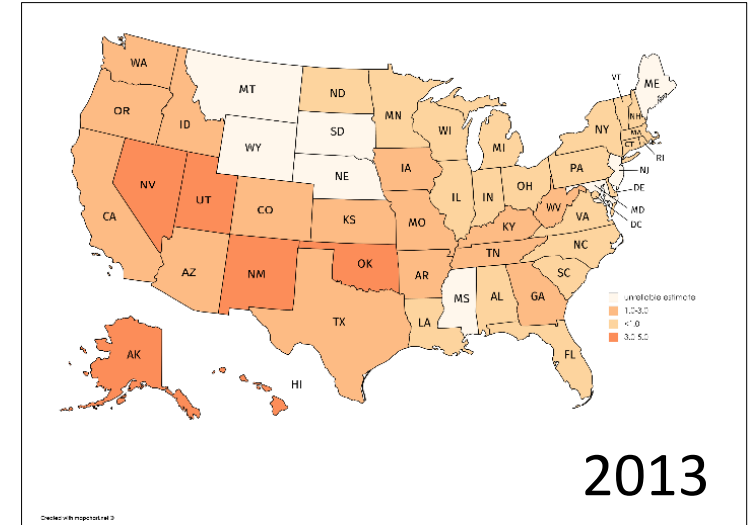
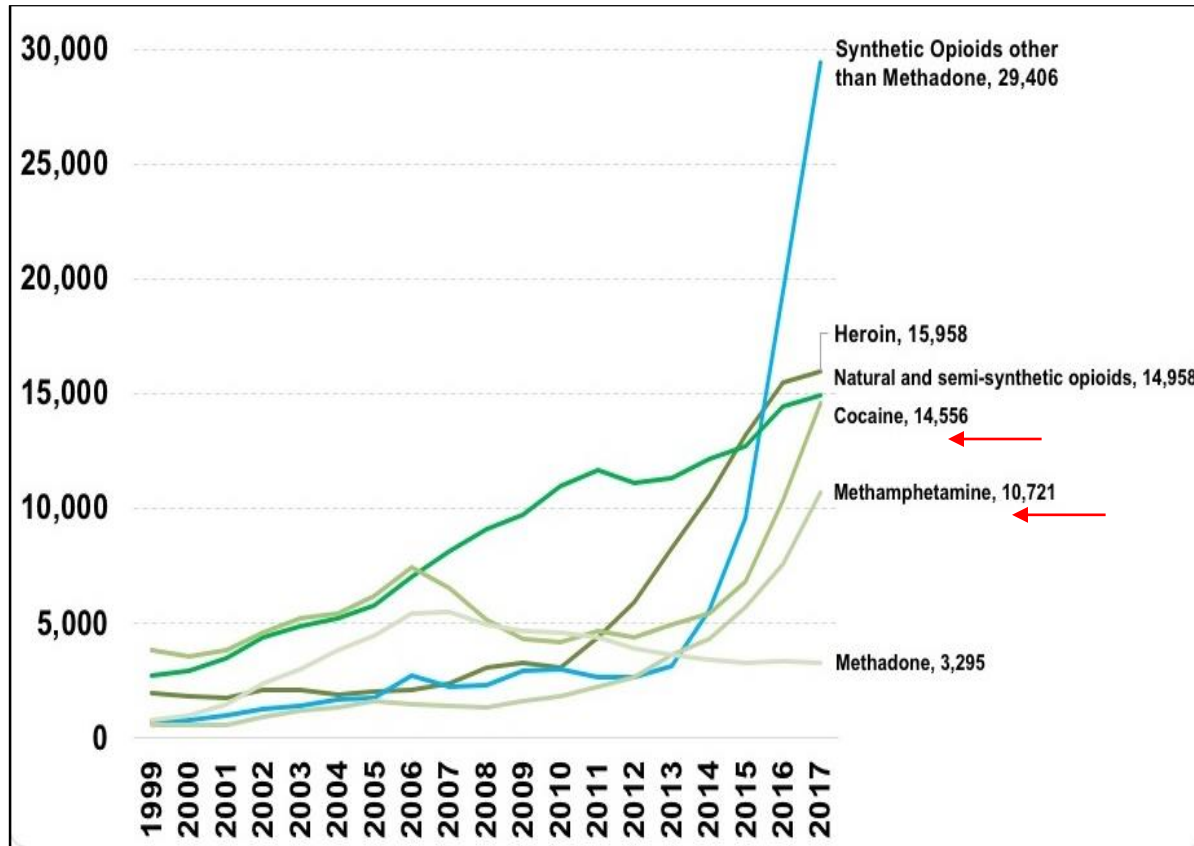


# Evolution of the Opioid Crisis



1. Over prescription of opioid medications led to misuse
2. Addiction to prescription opioids led to heroin
3. Emergence of fentanyl(s), with higher potency and greater profitability in the black market than heroin.

# Overdose Death Rates: Psychostimulants (Including Methamphetamine)

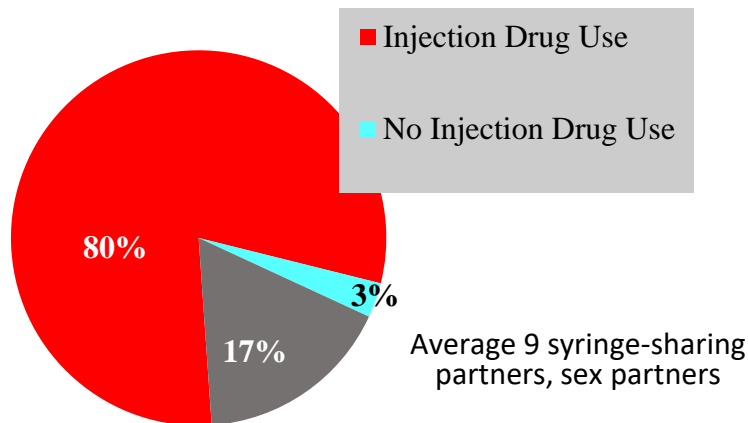


# HIV Can Disseminate Very Rapidly among IDU

USA: new HIV cases in IDUs have decreased since 1990, to 4000 year (8-10% new HIV cases)

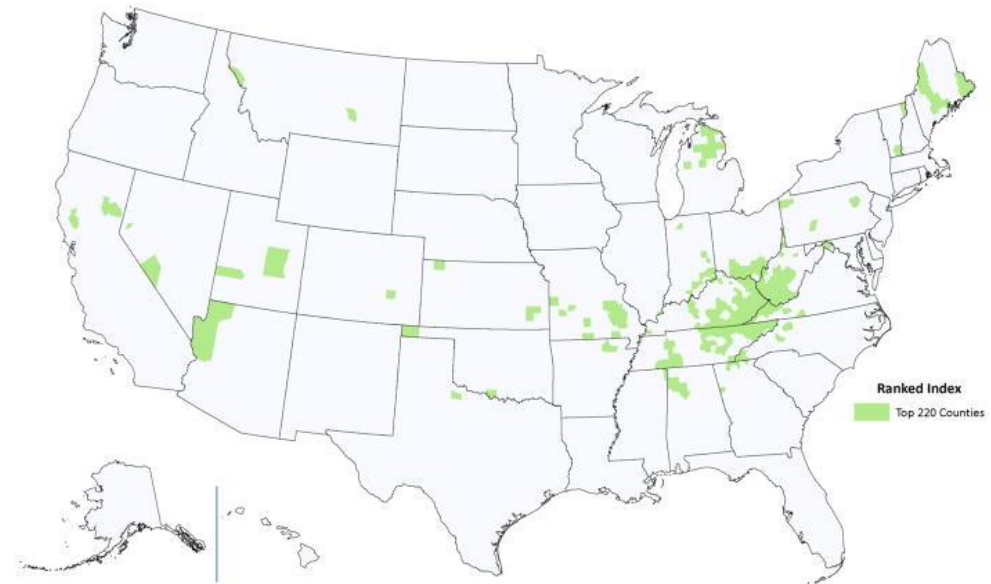
IDU 20% of those living with HIV

Outbreak of HIV Linked to IDU of Oxymorphone in Indiana, USA 2015



In Scott County, a community of 4200 people there were 215 new HIV Infections in 2014-2015 attributed to IDU

# U.S. Counties Vulnerable to Rapid Spread of IDU-Associated HIV



220 counties in 26 states identified as vulnerable communities

# HIV and HCV: Another Consequence of Opioid Epidemic

**CDC** Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives. Protecting People™

Search

CDC | HHS | USA

Morbidity and Mortality Weekly Report (*MMWR*)

CDC



## Outbreak of Human Immunodeficiency Virus Infection Among Heterosexual Persons Who Are Living Homeless and Inject Drugs — Seattle, Washington, 2018

Weekly / April 19, 2019 / 68(15);344–349

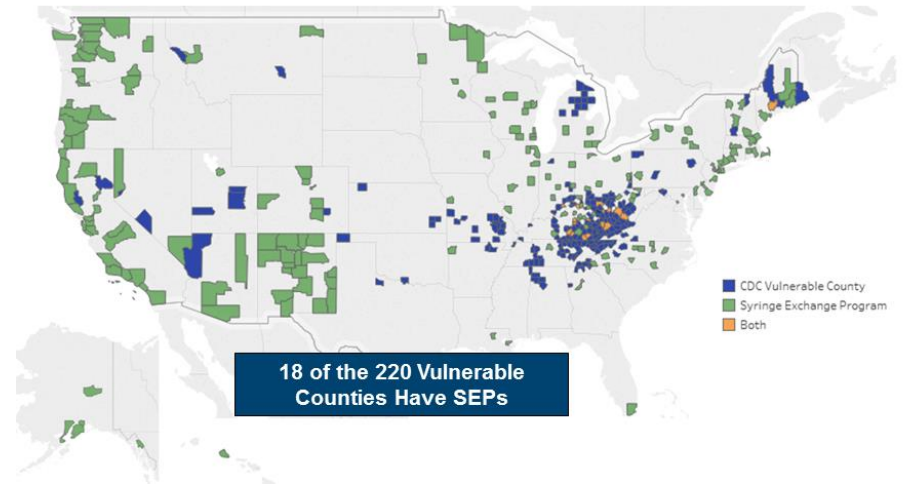
Matthew R. Golden, MD<sup>1,2</sup>; Richard Lechtenberg, MPH<sup>1</sup>; Sara N. Glick, PhD<sup>1,2</sup>; Julie Dombrowski, MD<sup>1,2</sup>; Jeff Duchin, MD<sup>1,2</sup>; Jennifer R. Reuer, MPH<sup>3</sup>; Shireesha Dhanireddy, MD<sup>2</sup>; Santiago Neme, MD<sup>2</sup>; Susan E. Buskin, PhD<sup>1</sup> ([View author affiliations](#))

TOP STORY

## HIV cluster in Cabell County, WV, totals 44 confirmed cases, mainly among IV drug users

Apr 28, 2019

220 Counties Vulnerable to an HIV or HCV Outbreak & Counties with Syringe Exchange Programs (SEPs)



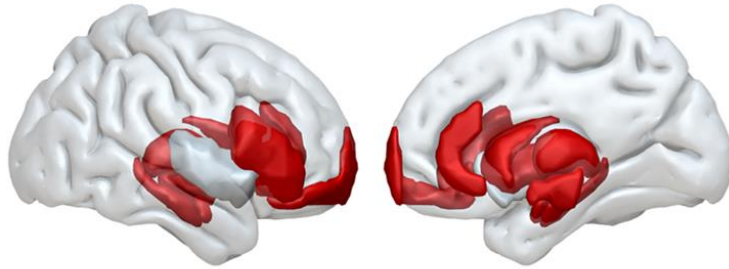
- HIV Prevention Trials Network: Approved protocol, **INTEGRA**: A Vanguard Study of Integrated Strategies for Linking Persons with OUD to Care and Prevention for Addiction, HIV, HCV, and Primary Care
- [RFA-DA-20-013: PrEP for HIV Prevention among Substance Using Populations \(R01 Clinical Trial Optional\)](#)
- Several currently NIDA-funded studies to use network analysis and modeling approaches to predict HIV incidence and to better target prevention and treatment efforts related to HIV/OUD

# ODD can be Treated and the Brain Can Recover

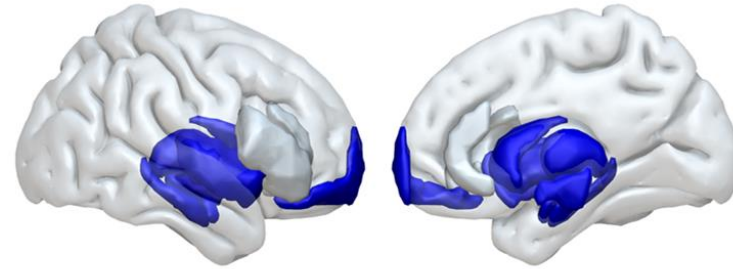
## fMRI findings from drug cue reactivity studies in ODD

● INCREASE ● DECREASE

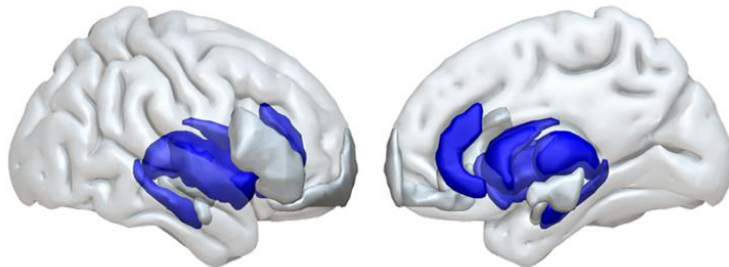
Drug-cue reactivity vs healthy control



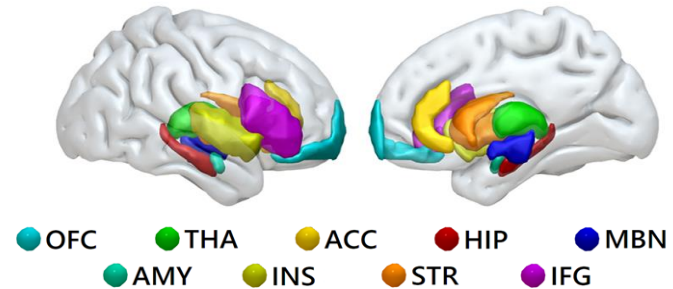
Following medication-assisted treatment



Following prolonged abstinence



Regions of interest



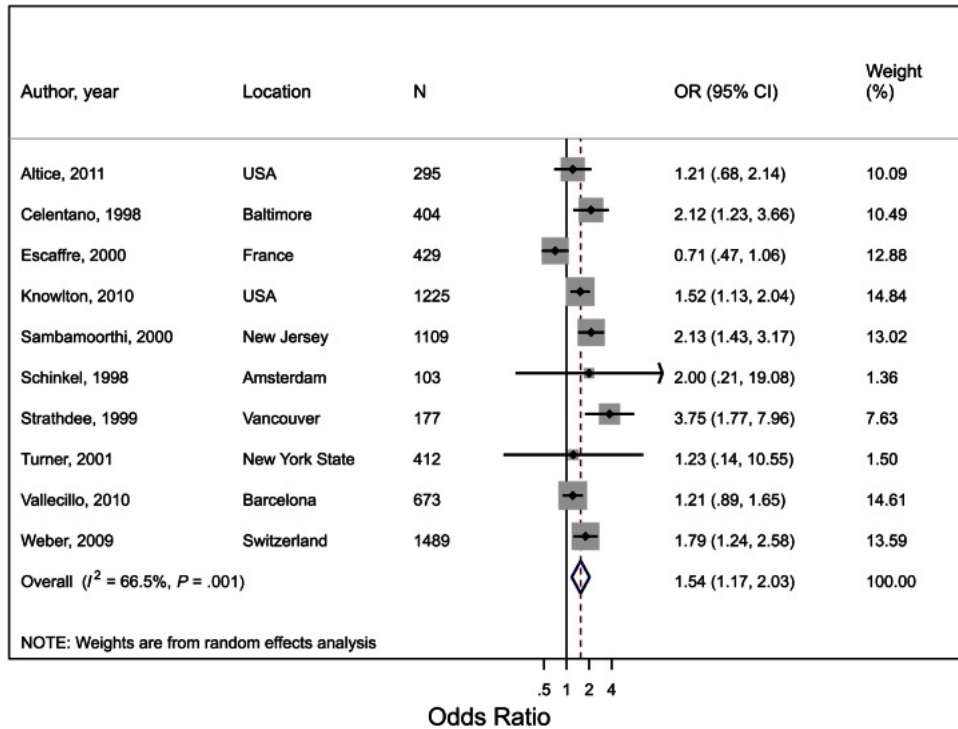
OFC, orbitofrontal cortex; THA, thalamus; ACC, anterior cingulate cortex; HIP, hippocampus; MBN, midbrain; AMY, amygdala; INS, insula; STR, striatum; IFG, inferior frontal gyrus.

Individuals with ODD show heightened brain responses to drug cues relative to controls. These are reduced with medication assisted treatments and following prolonged abstinence.

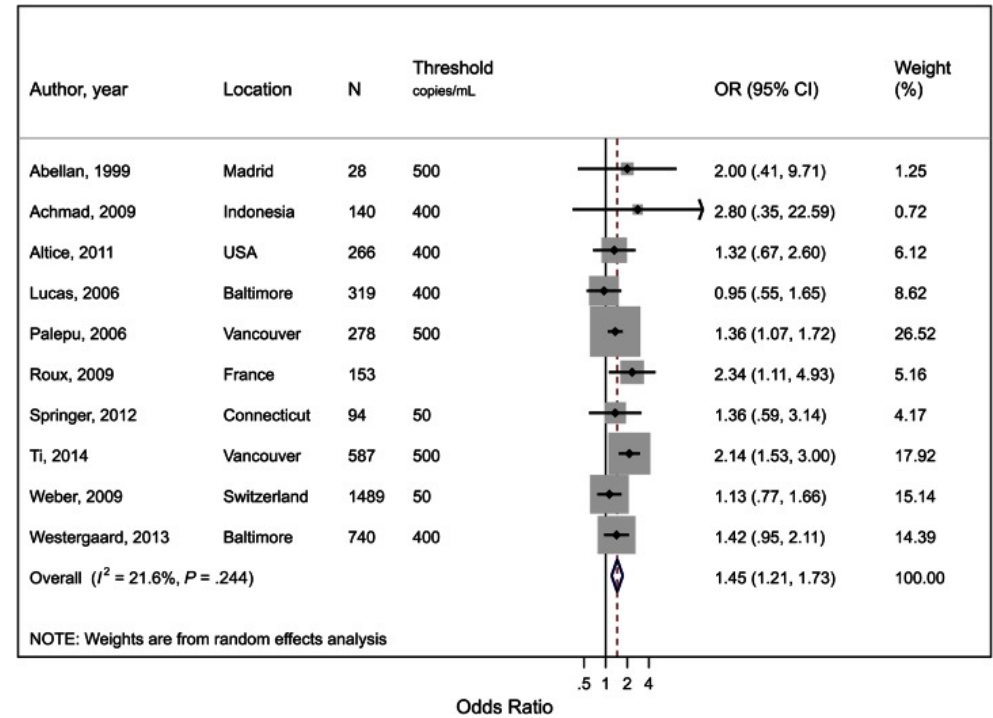


# Effects of OUD Medications Effects Among HIV+ IDU

## ART coverage of among IDUs

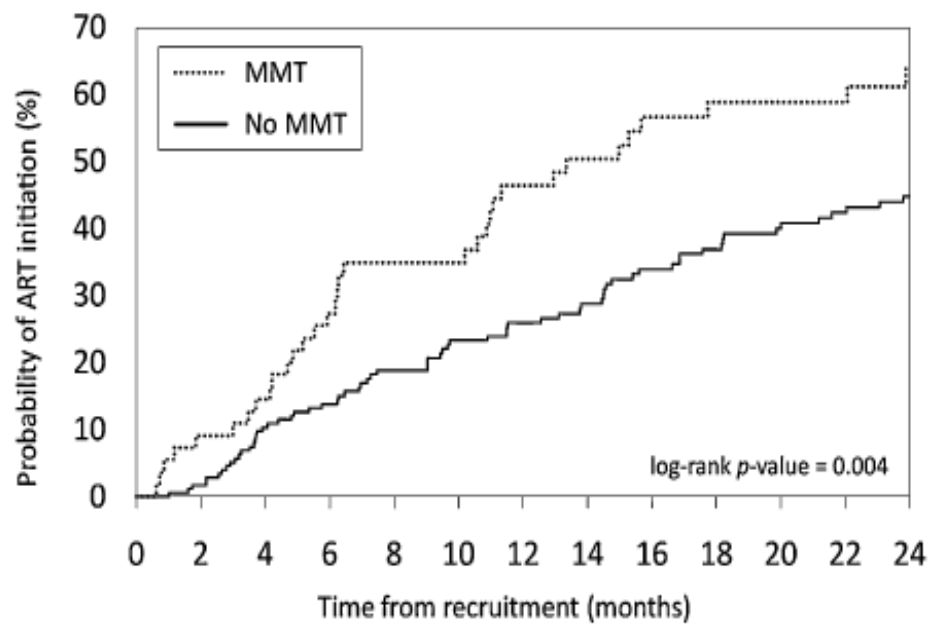


## On plasma viral suppression

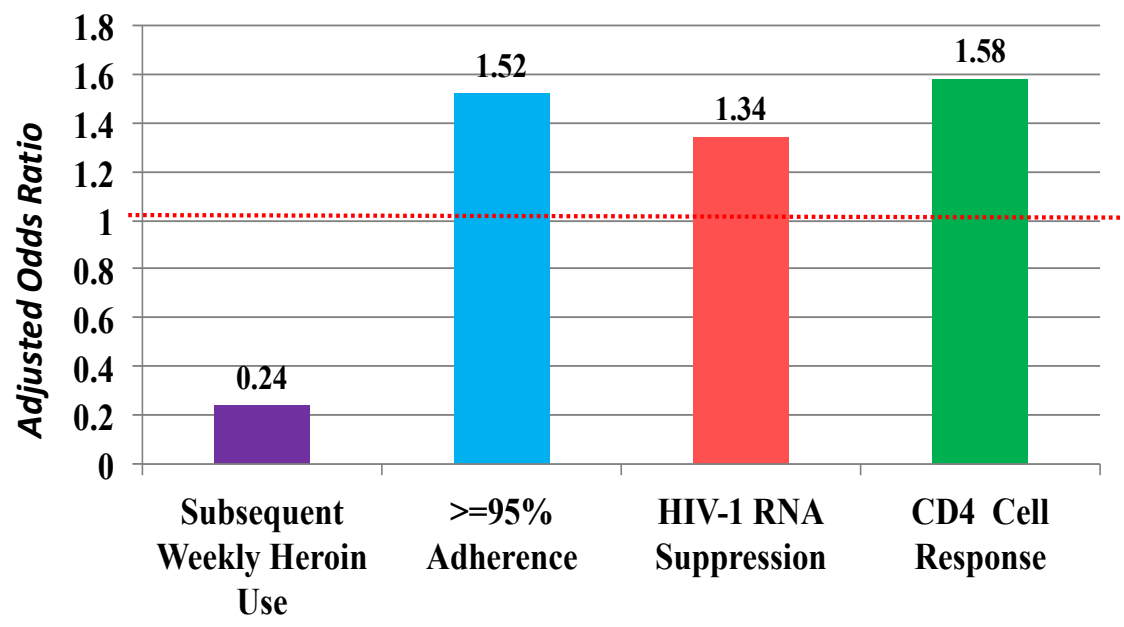


# Among IDUs Medication Assisted Treatment Improves HIV Outcomes

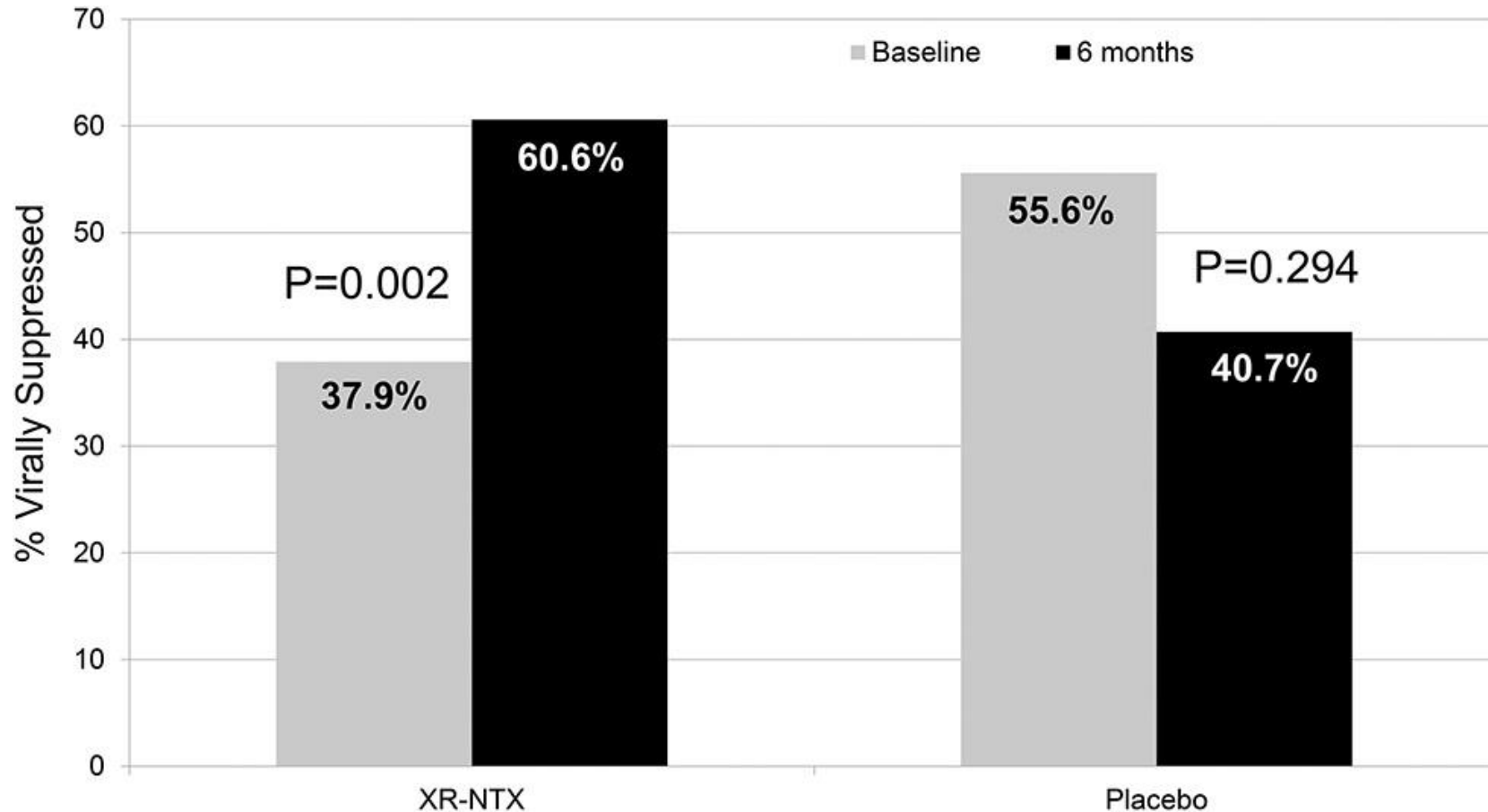
## Methadone Maintenance Therapy Promotes Initiation Of Antiretroviral Therapy in IDU



## Methadone Maintenance Therapy Increases Antiretroviral Adherence and HIV Treatment Outcomes in IDU



# Extended-Release Naltrexone Improves Viral Suppression Among Incarcerated PLWH & OUD



# Improving Treatments for Addiction: Implementing Medication-Assisted Treatment

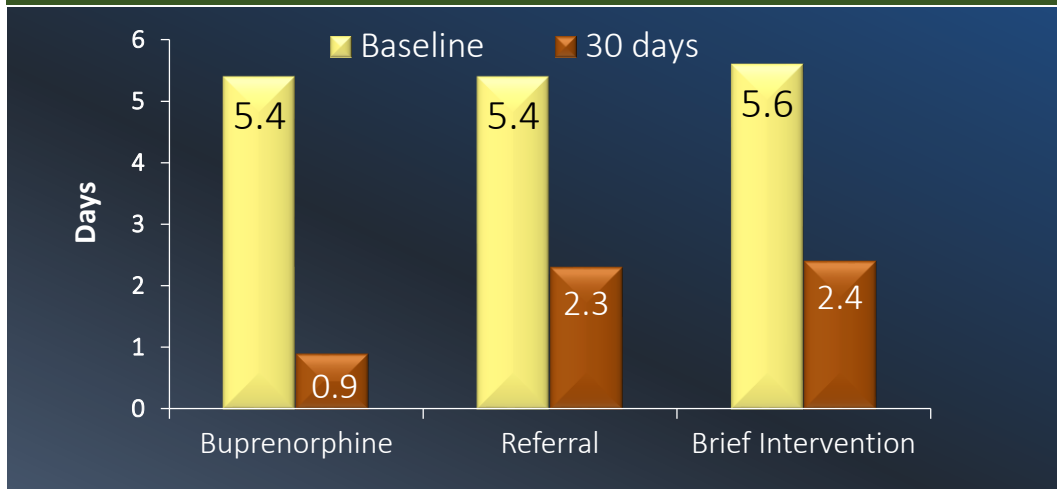


- Emergency department-initiated buprenorphine
  - Reduced self-reported, illicit opioid use
  - Increased engagement in addiction treatment; decreased use of inpatient addiction treatment services

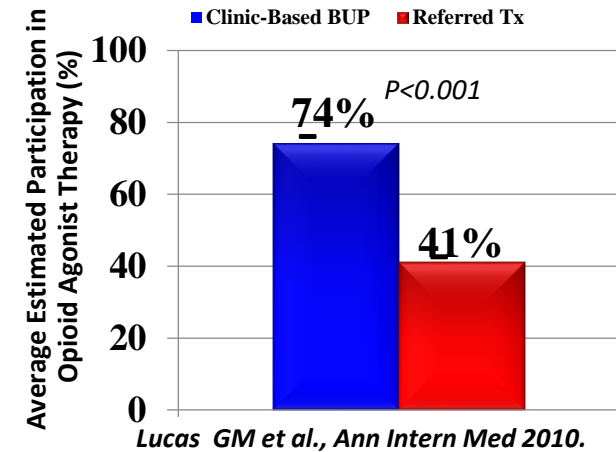


Infectious Clinic's-Based Buprenorphine of Opioid-Dependent HIV+ Patients vs Tx Referral

## Self-Reported Illicit Opioid Use in the Past 7 Days



Source: D'Onofrio G et al., JAMA April 28, 2015.

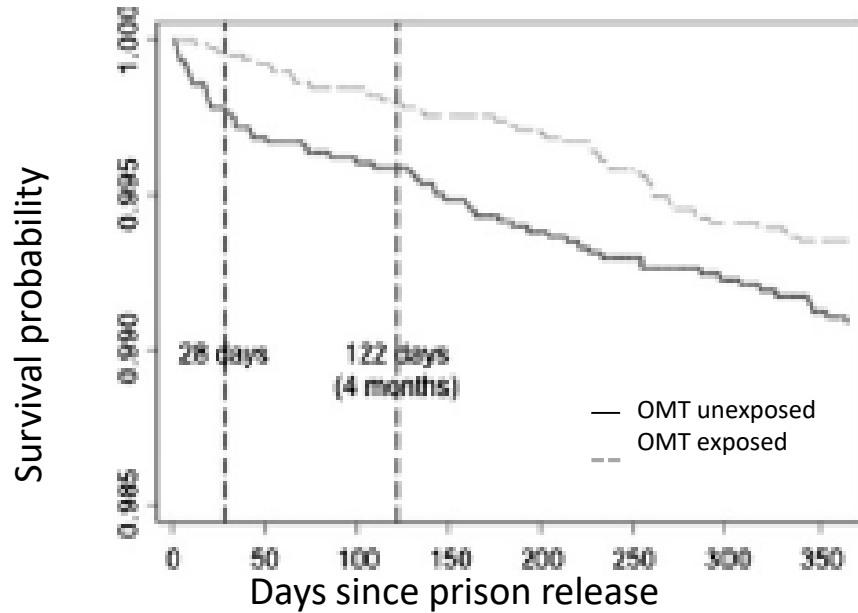




# Opioid Medication Therapy In Prison

## Mortality Post Release

Survival Curve During the Year Following Release (Drug-Poisoning Mortality)

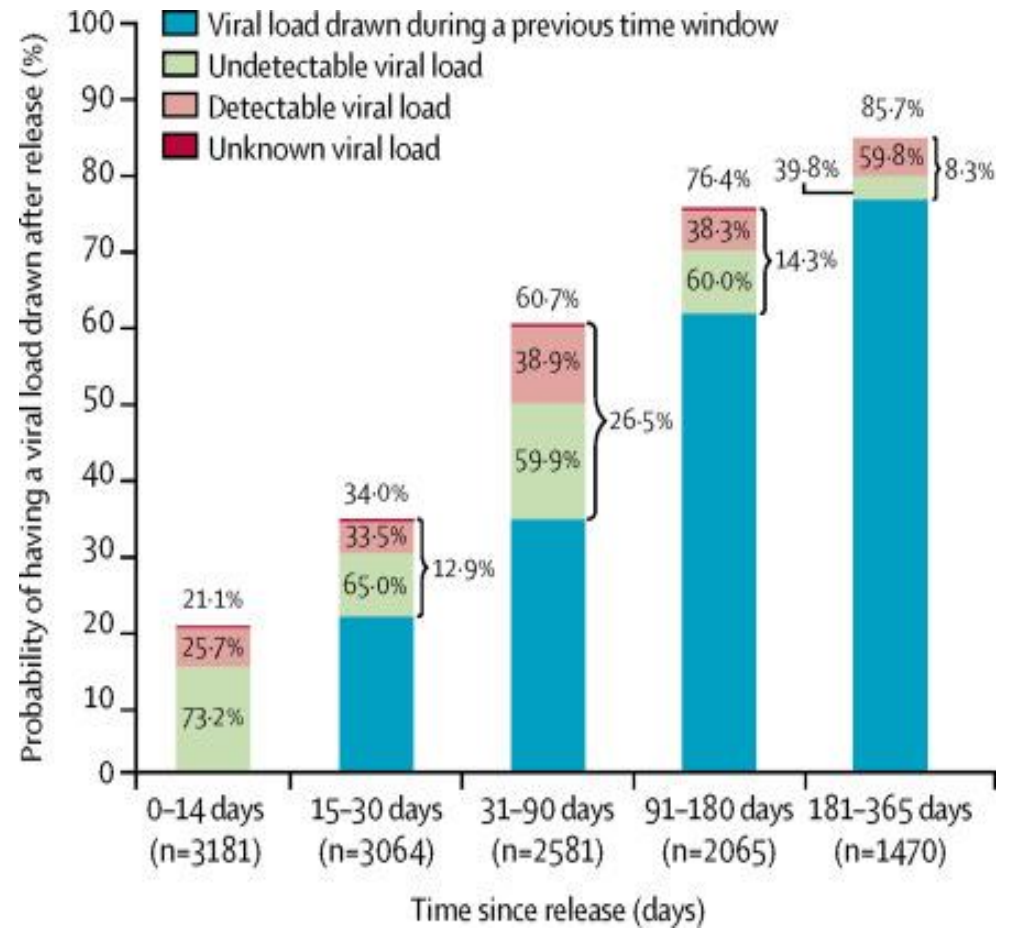


OMT resulted in a 75% reduction in mortality (85% reduction in overdoses) in the first month post release

Source: Marsden J et al., Addiction 2017; 112:1408-1418.

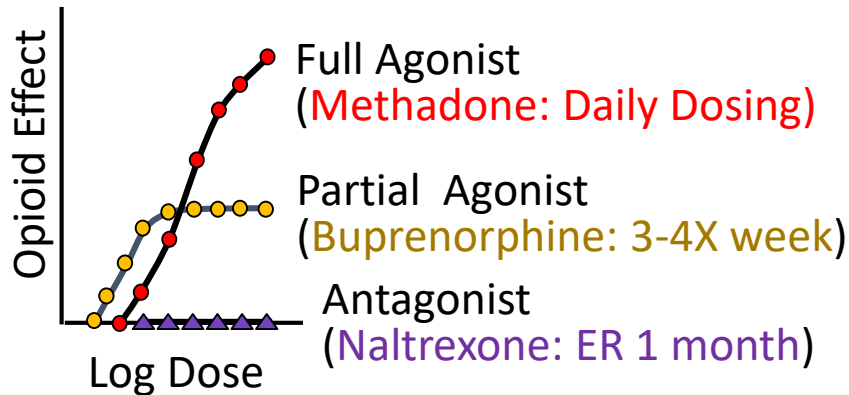
# Viral Load Increases Over Time After Release From Jails/Prisons

Linkage time to care as measured by first HIV RNA viral load drawn after release from prison/jail



Loeliger KB et al., Lancet HIV. 2018 Feb;5(2):e96-e106.

# Medication Assisted Treatment (MAT)



## DECREASES:

- Opioid use
- Opioid-related overdose deaths
- Criminal activity
- Infectious disease transmission

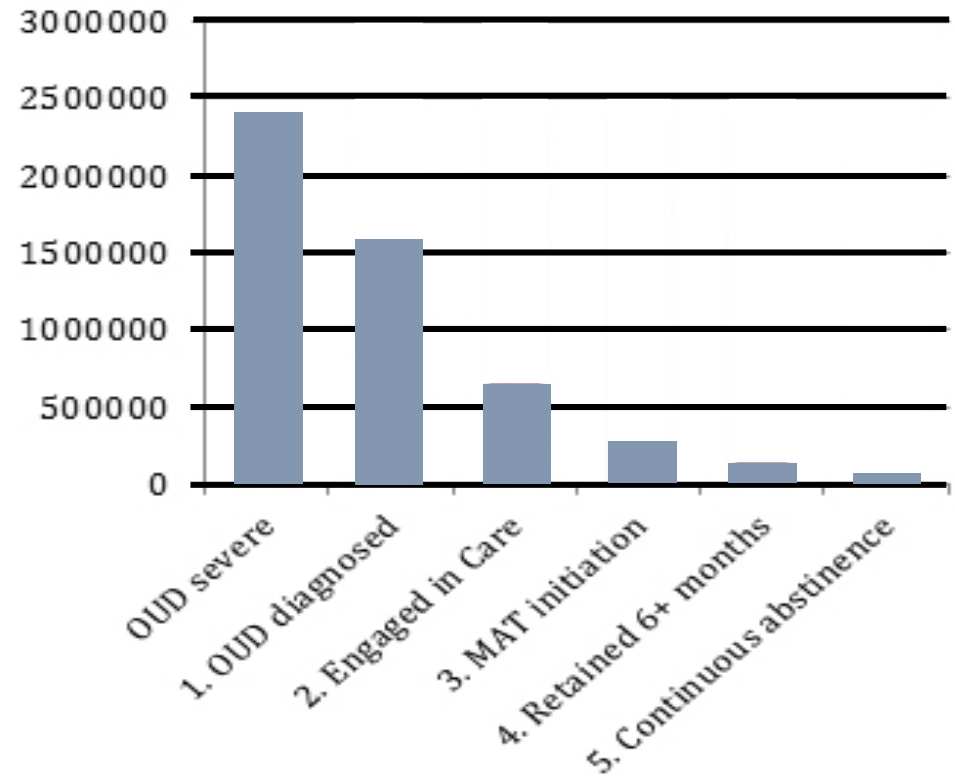
## INCREASES:

- Social functioning
- Retention in treatment

**MAT is highly underutilized!**

**Relapse rates are very high (50% in 6 months)**

# OUD Cascade of Care in USA



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

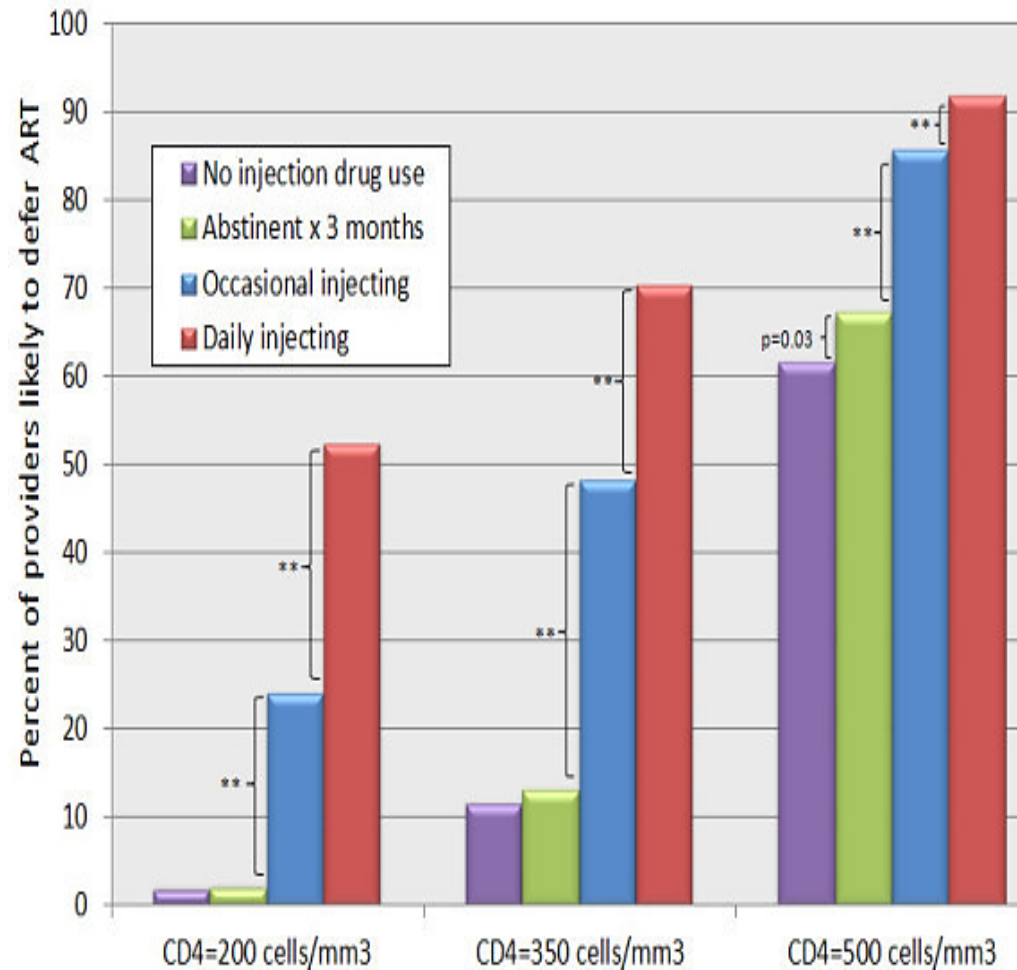
## HIV CARE CONTINUUM:

THE SERIES OF STEPS A PERSON WITH HIV TAKES FROM INITIAL DIAGNOSIS THROUGH THEIR SUCCESSFUL TREATMENT WITH HIV MEDICATION

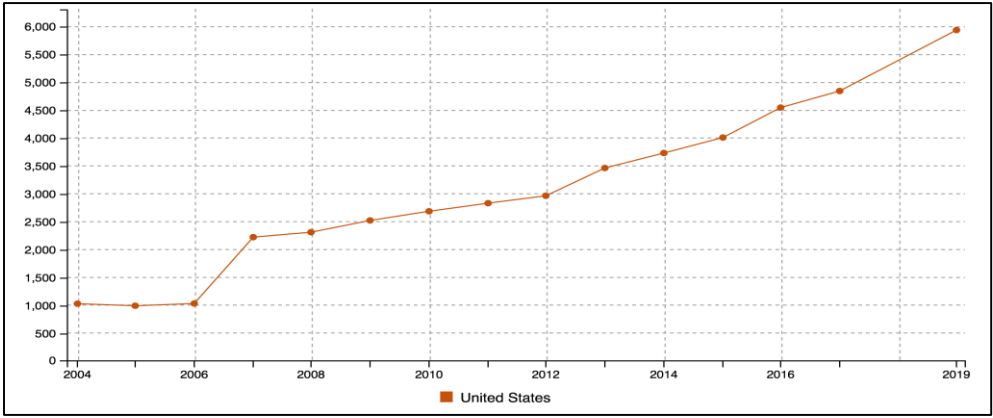
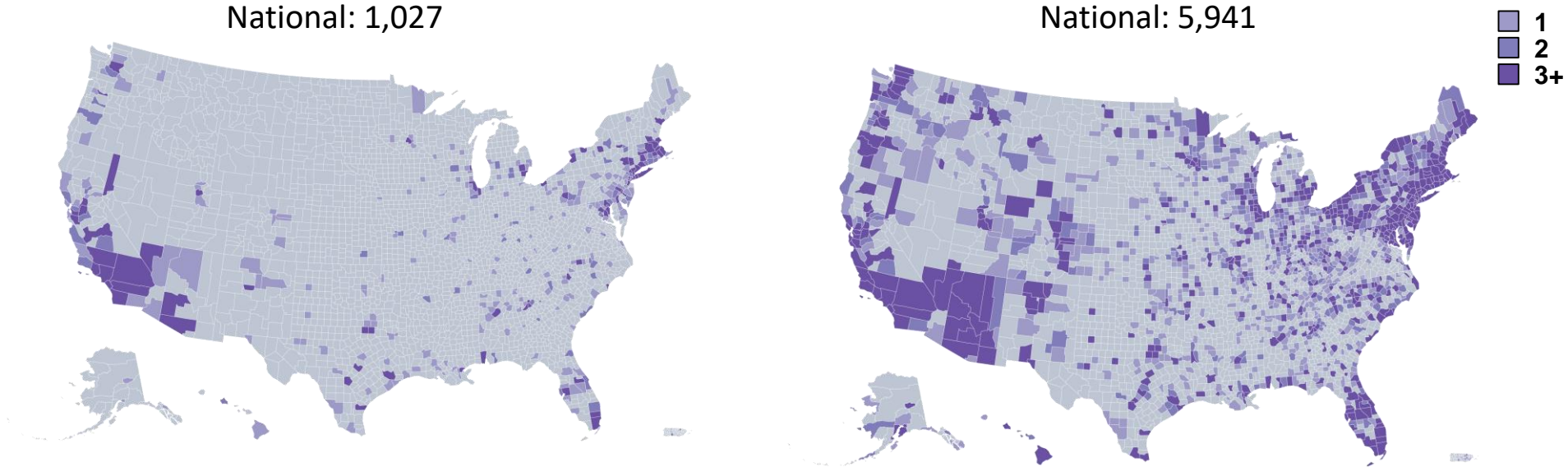


# HIV+ IDUs Are Much Less Likely to Receive HAART

% Providers Who Would Defer ART  
By CD4+ Count and IDU status



# Number Of Substance Abuse Treatment Facilities Offering Any MAT



Historical Trends (2004 - 2019)



# Treating People Living With HIV, Who Have OUD

1. Linking PLWH who use opioids to Medication Assisted Therapies
2. Engaging and Retaining PLWH with OUD in HIV Care

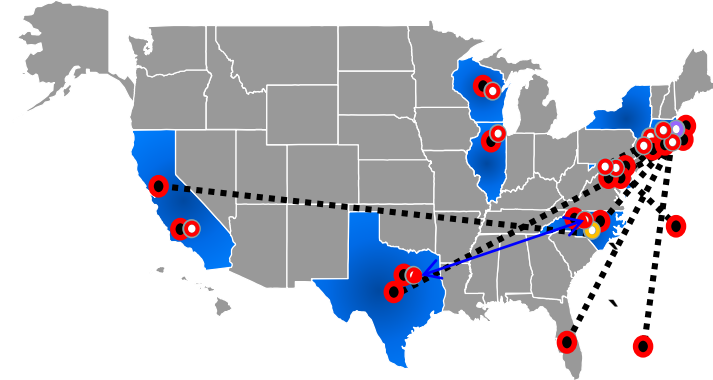


# What is *NIDA* doing?

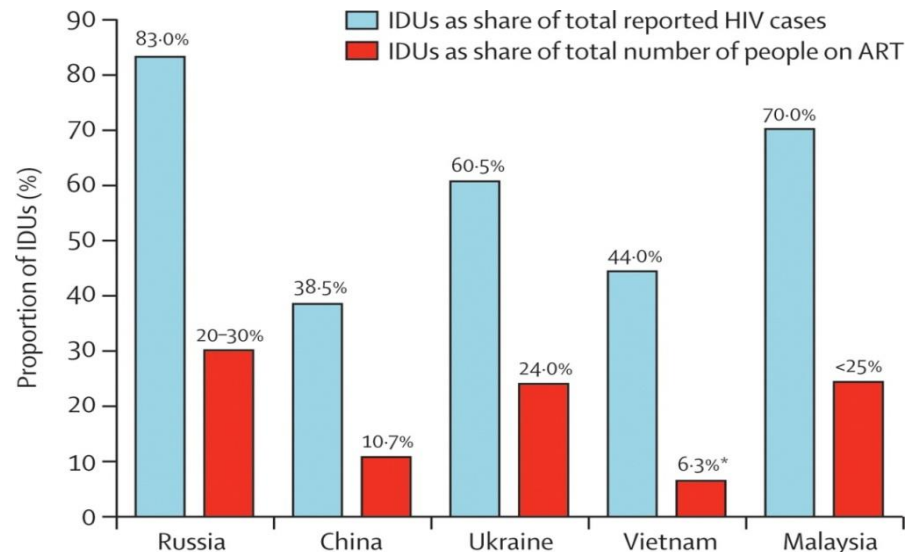


## Implementation and services research

- Integrated and new models of care
- Health Care (i.e., STD clinics)
- Criminal Justice System
- Rural communities
- Countries where IDU is driver of HIV epidemic



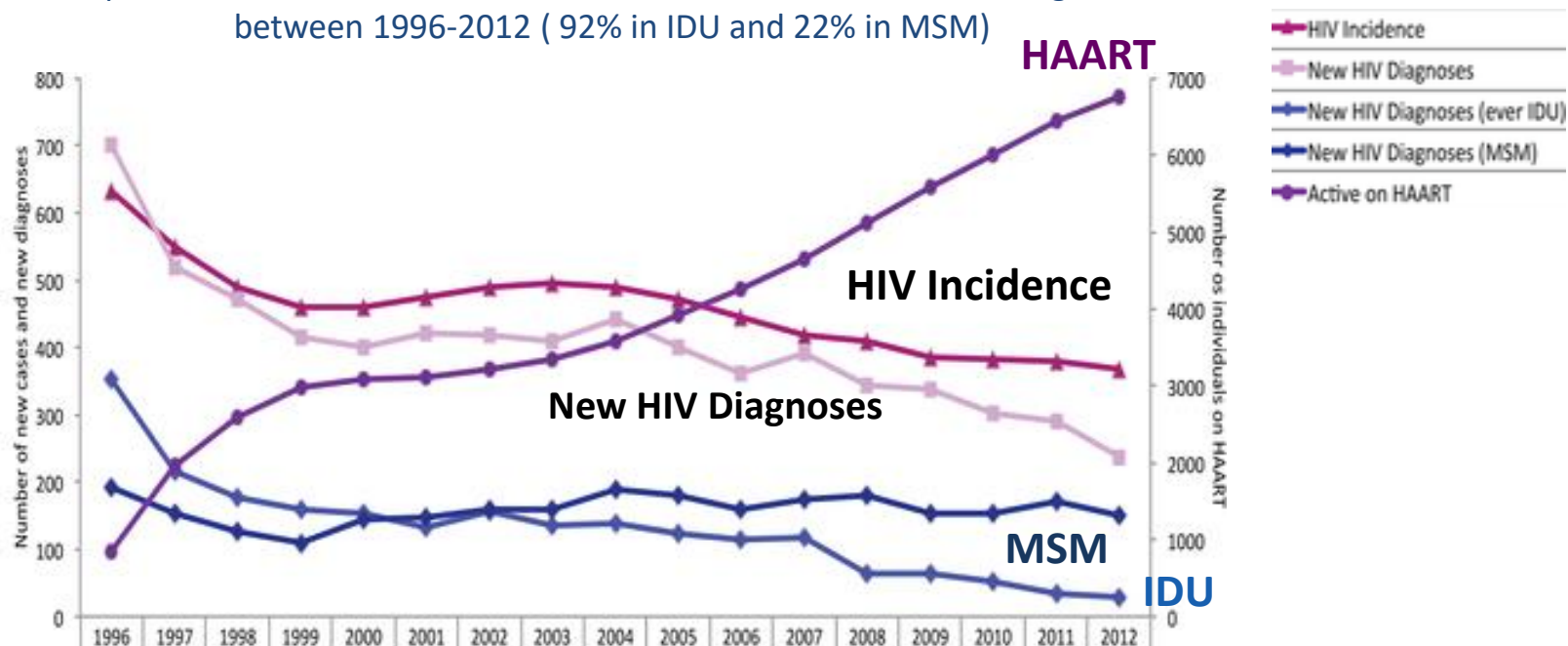
## IDUs as Share of Total HIV Cases & of Patients Receiving ART, 2008



# HAART as HIV Prevention: Including IDU

## HIV epidemic indicators for BC

Expansion of HAART was associated with decreases in new HIV diagnoses between 1996-2012 ( 92% in IDU and 22% in MSM)

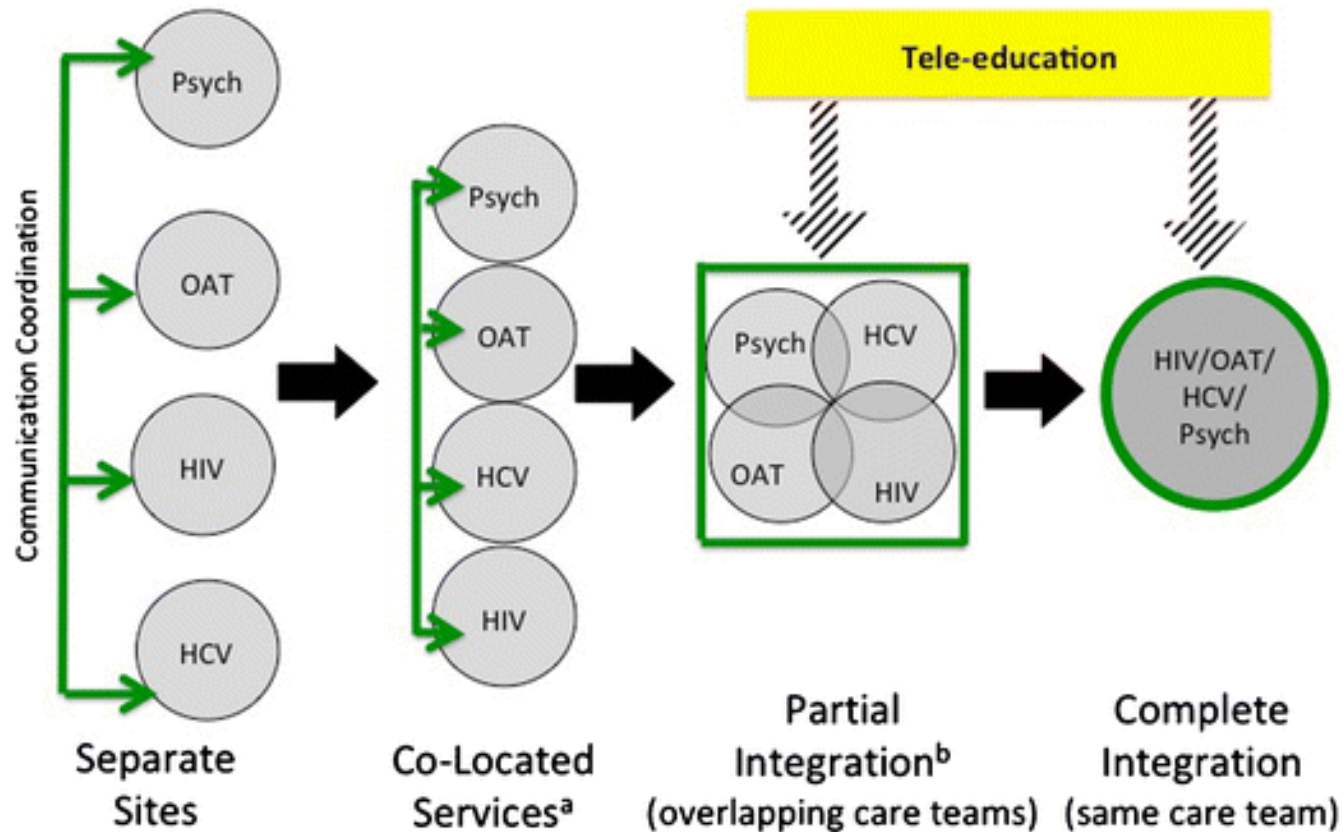


### Facilitate expansion and adherence to HAART among IDU

- Enhanced HIV screening
- Low threshold HAART treatment facilities
- Wide availability of needle and syringe programs,
- Extensive MAT

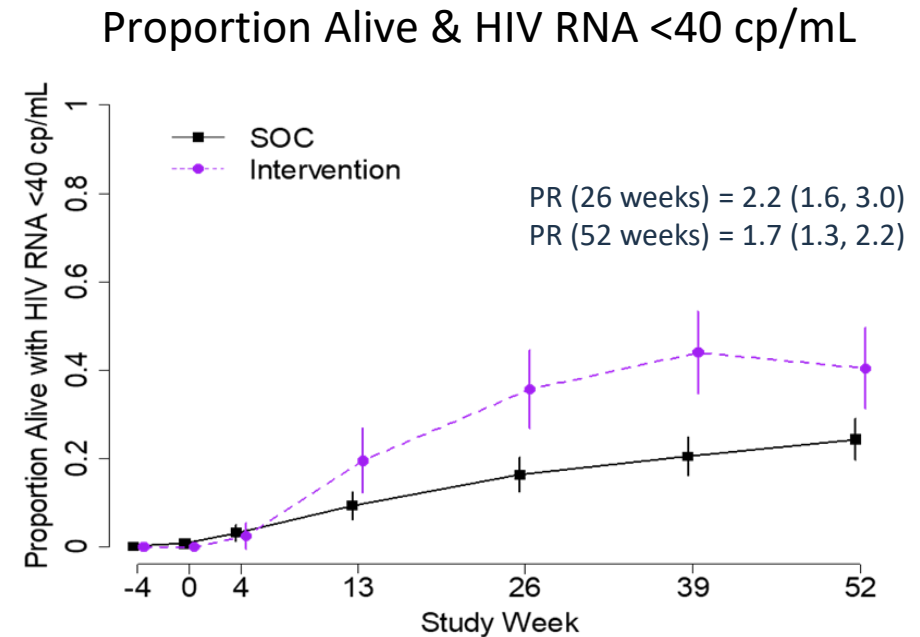
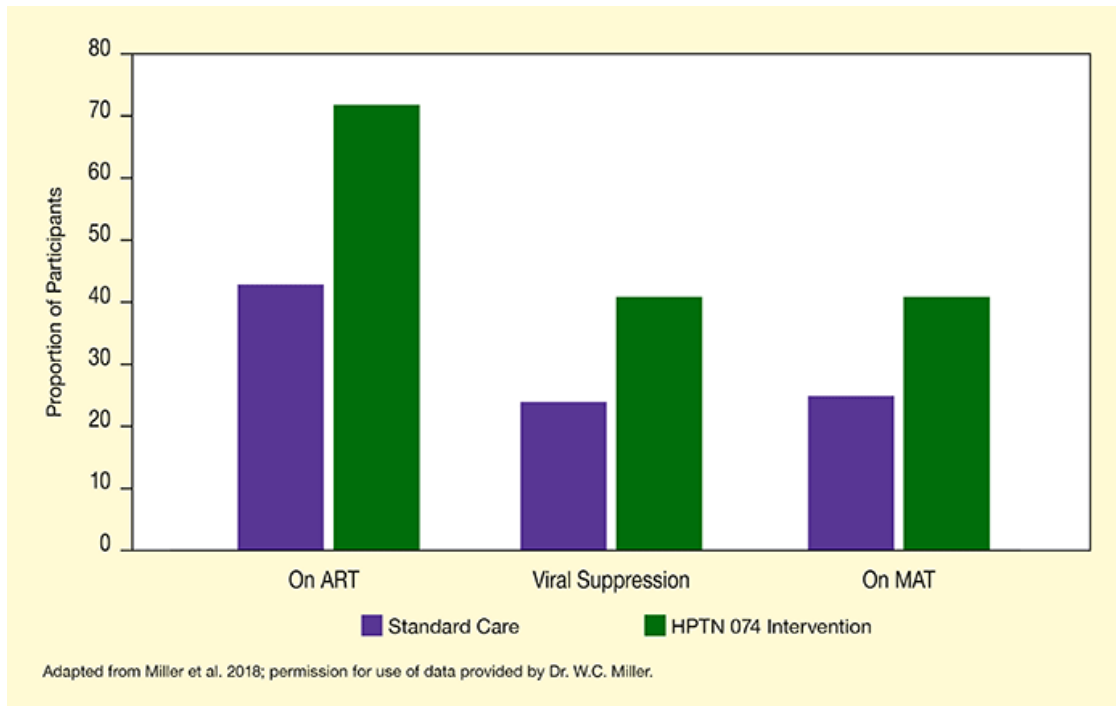
# Integrated Models of Care for Individuals with Opioid Use Disorder with HIV and/or HCV

## Steps Toward Care Integration



# Scalable, Integrated Intervention To Engage IDU In HIV Care and MOUD (HPTN 074)

Systems navigators facilitate engagement, retention, adherence in HIV care and MAT  
Psychosocial counseling, at least 2 sessions ART at any CD4 count

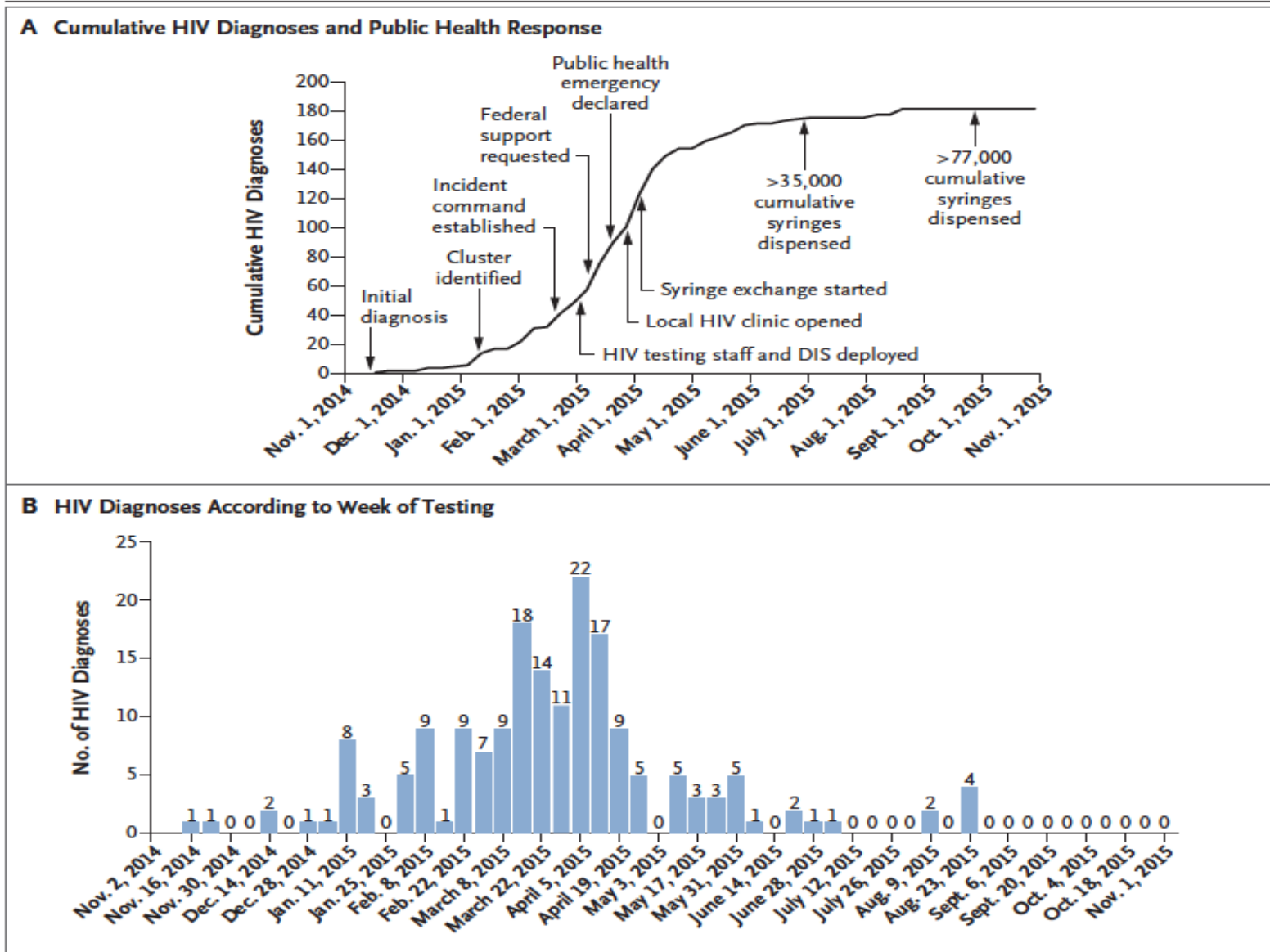


**All incident HIV infections among partners occurred in the SOC arm:**

Intervention: (0 cases/215.6 p-y) IR: 0.0/100 p-y (CI 0.00, 1.7) SOC: (7 cases/683.6 p-y)  
IR: 1.0/100 p-y (CI 0.41, 2.1)

# Needle and Syringe Programs Prevent HIV and HCV

## Timeline of Indiana HIV Outbreak among IDUs

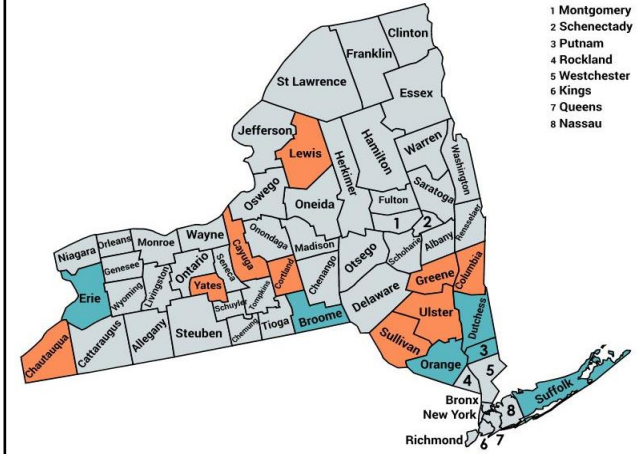


# The HEALing Communities Study (HCS): Research Sites

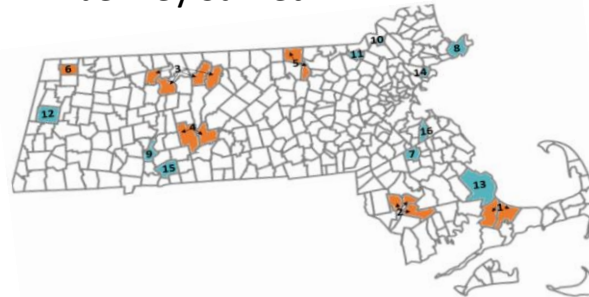
Ohio State University  
PI: Rebecca Jackson



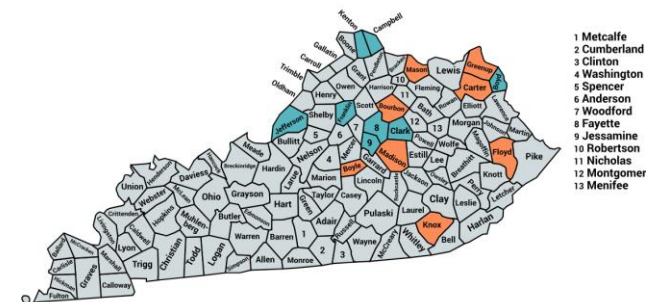
Columbia University  
PI: Nabila El-Bassel



Boston Medical Center  
PI: Jeffrey Samet



University of Kentucky  
PI: Sharon Walsh



Rural Communities



Urban Communities



Data Coordination Center:  
RTI International

# NEW THERAPEUTICS for OUD

- Long lasting medications to improve compliance
- Non-Opioid Medications
- Vaccines and other immunotherapies
- New treatment regimens: Integrated LA ARV and OUD treatment, or combined injectable formulations LA ARV and OUD



## SUBLOCADE™

(LA Buprenorphine ER),  
Once-Month Injectable  
FDA Approval 11.30.2017

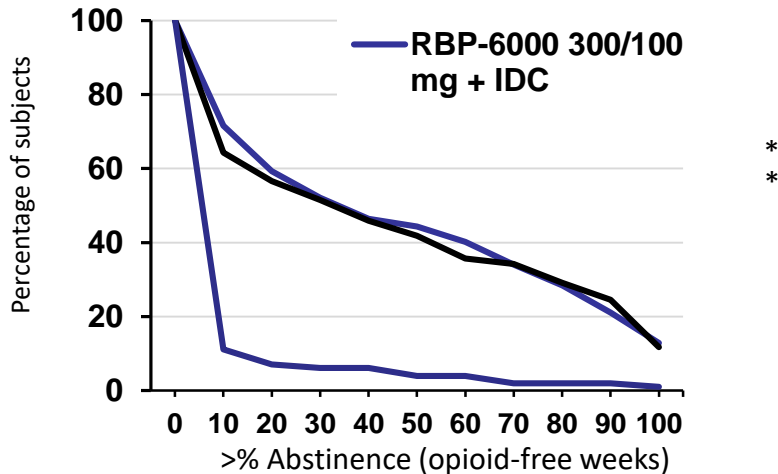


## CAM2038: Subcutaneous ER Buprenorphine

Weekly or monthly injection

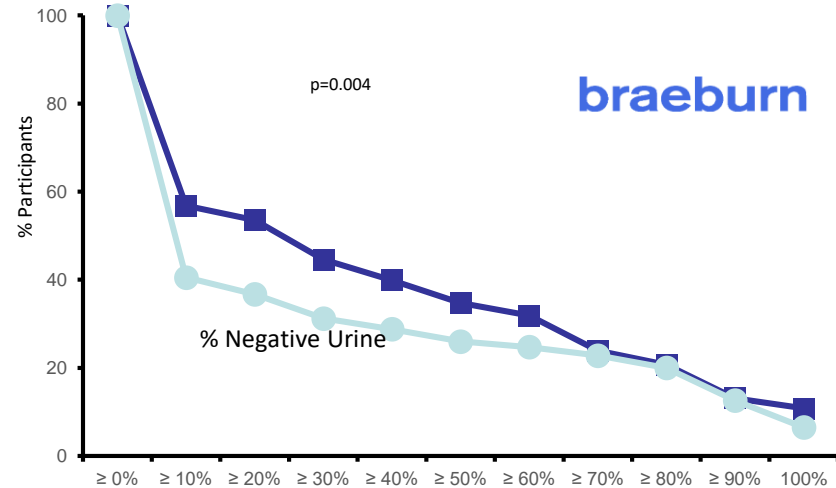


% negative opioid urines (Weeks 5 to 24)



Heidbreder et al., CPDD 2017

Comparison CAM2038 versus Daily SL BPN





# What can we do together?

- Implementation science to develop scalable integrated models of care for SUDs and HIV in communities of highest need
- Research on acceptability, use, provision, dosing of PrEP for drug users and those with SUDs
- Most effective combination of medications and psychosocial interventions to address SUDs, HIV risk, and HIV

# www.drugabuse.gov

## Now NIDA resources are with you wherever you go!

We're connecting communities with a new mobile Web site that gives you drug-related information by topic, audience, and format—when you need it, where you need it.

The new mobile site (m.drugabuse.gov) provides:

- ✓ Easy access to NIDA's resources through iPhone, Android, iPad, and other smartphones and tablets.
- ✓ A convenient way to find, view, request, and share publications—right in the palm of your hand.
- ✓ E-books of all publications to allow offline reading on all major e-readers, including Kindle and NOOK.
- ✓ New Spanish-language content on drugs of abuse and related topics.



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