

# Telehealth Expansion of Buprenorphine Treatment: Lessons Learned from the COVID-19 Era

Tiffany Lu, MD, MS

Director, Montefiore Buprenorphine Treatment Network

Assistant Professor of Medicine

Albert Einstein College of Medicine/Montefiore Medical Center



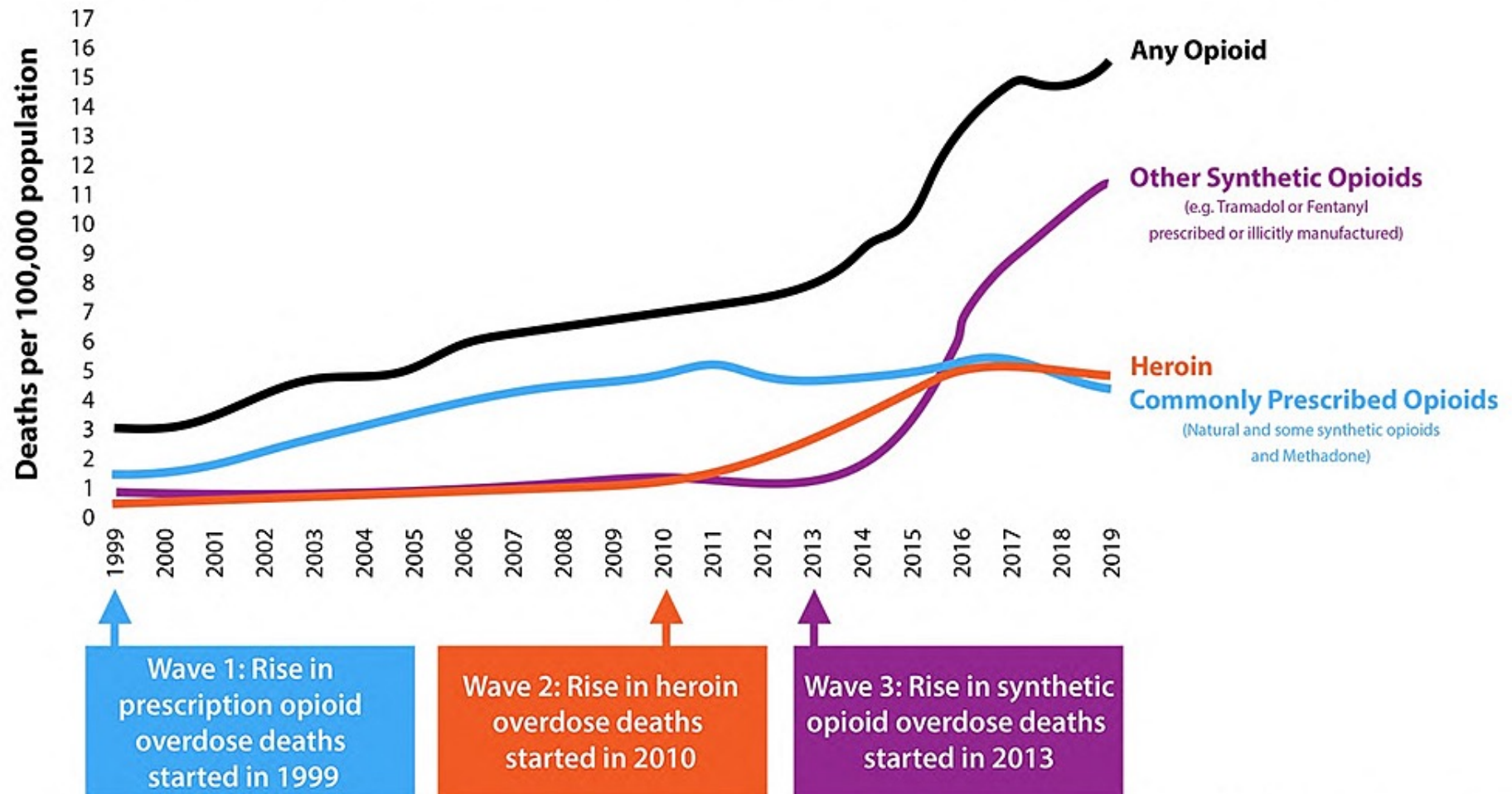
Albert Einstein College of Medicine

**Montefiore**

# Objectives

- Describe epidemiology and disparities in overdose deaths in the COVID-19 era
- Discuss telehealth delivery of buprenorphine treatment as an innovative method to address overdose disparities in community health centers
- Understand future directions for telehealth delivery of buprenorphine treatment

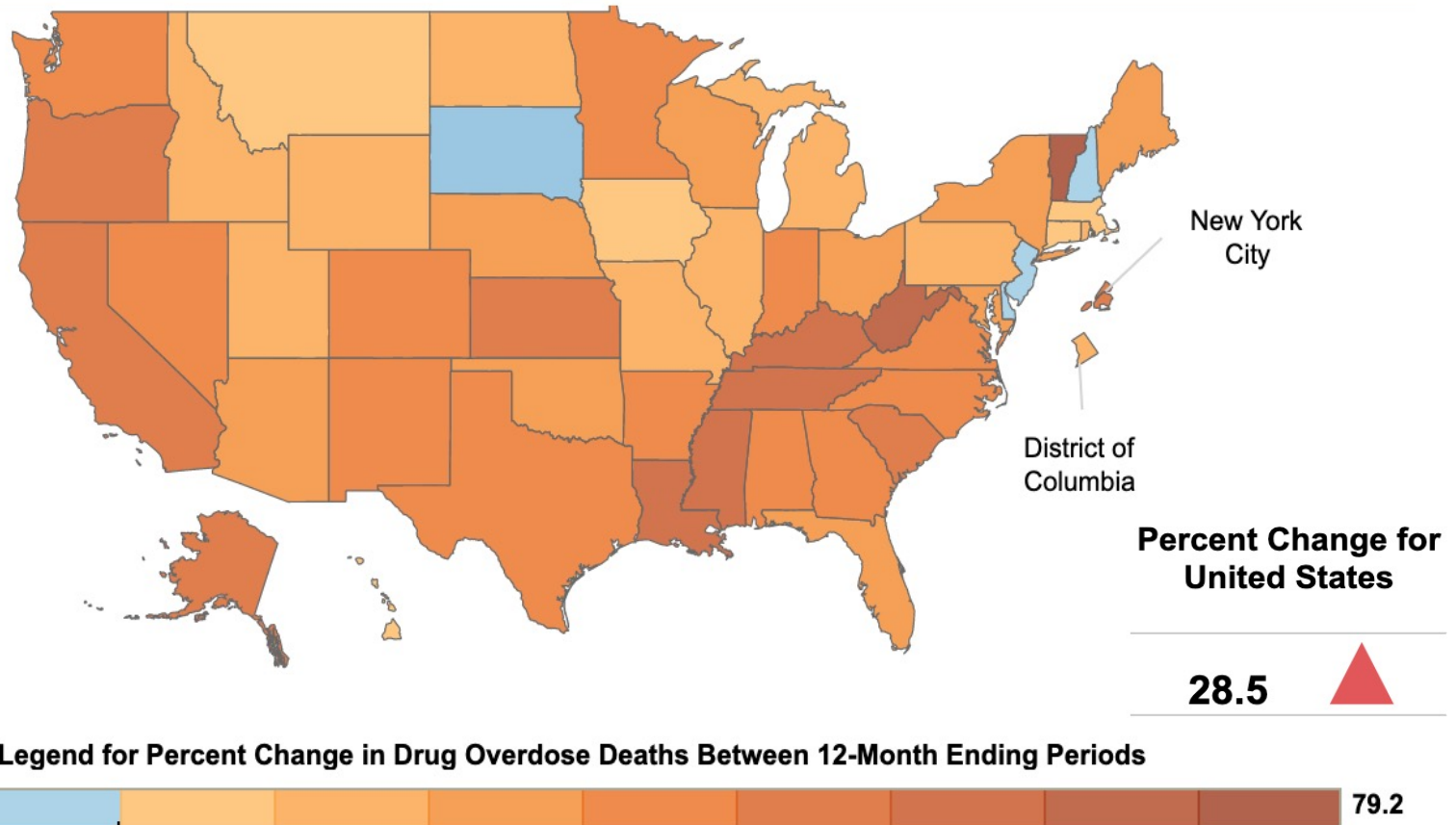
# Opioid-related overdose crisis in the US: three distinct waves



SOURCE: National Vital Statistics System Mortality File

# Overdose deaths reached record numbers during the COVID-19 pandemic

**Figure 1b. Percent Change in Predicted 12 Month-ending Count of Drug Overdose Deaths, by Jurisdiction: April 2020 to April 2021**

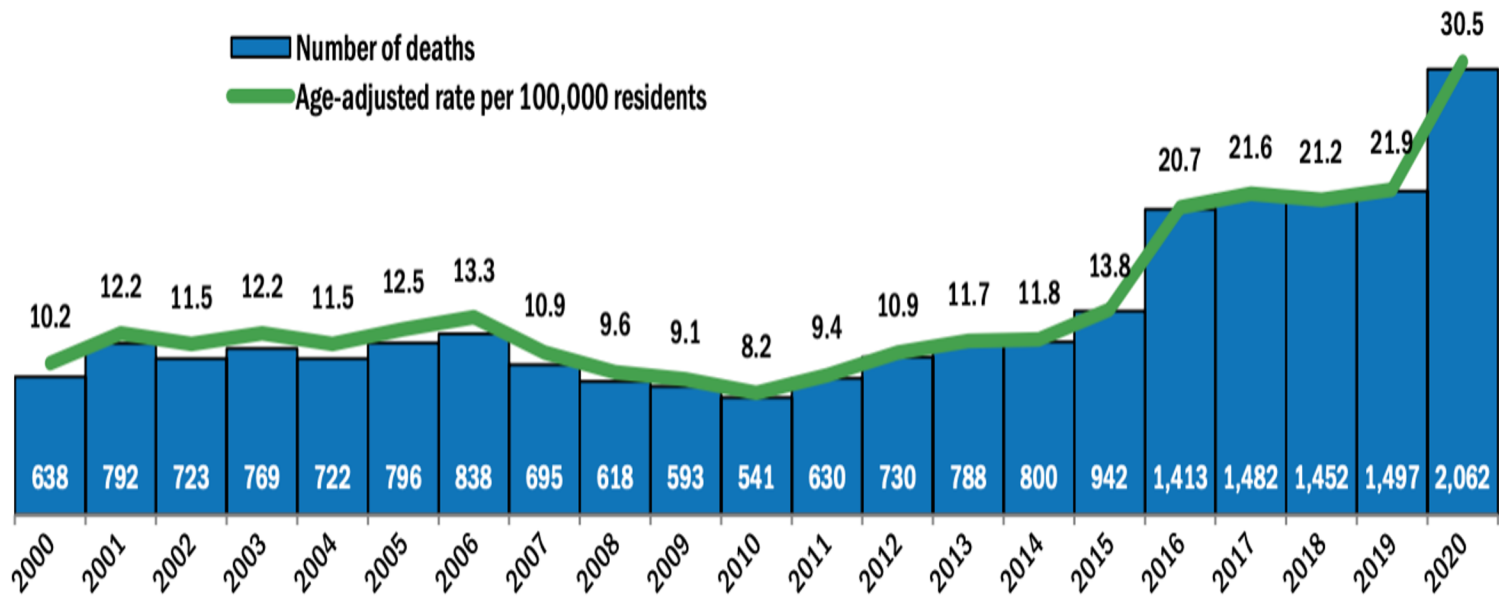


Source: CDC Press Release Nov 17, 2021

# Worsening overdose deaths in New York City

- Over the last 5 years, overdose deaths rose by nearly 50%, reaching a record high of 30.5 deaths per 100K residents in 2020
  - 1 person dies of a drug overdose every 4 hours in NYC

Number and age-adjusted rate per 100,000 residents of unintentional drug poisoning (overdose) deaths, New York City, 2000 to 2020

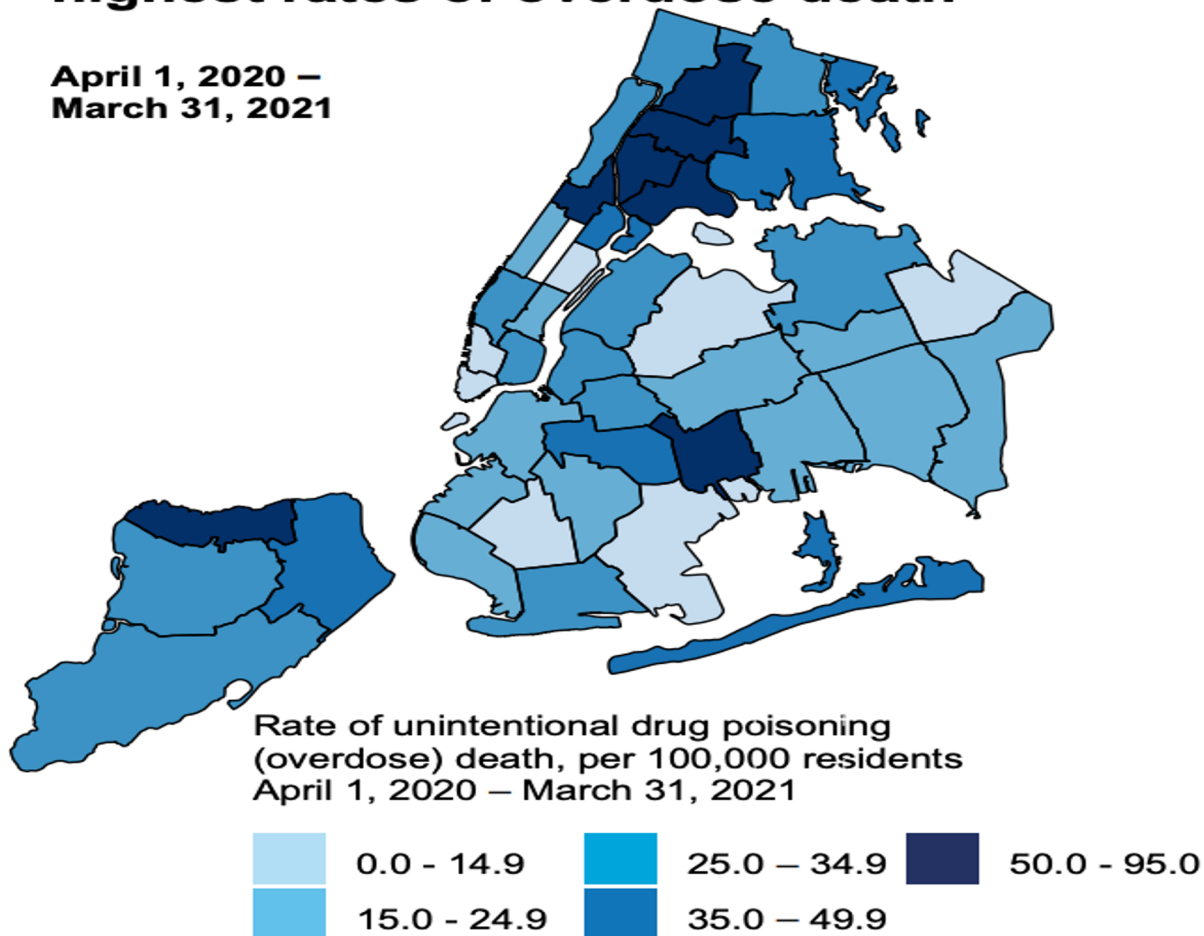


Sources: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2000–2020; 2020 data are provisional and subject to change.

# Overdose disparities in New York City

## Bronx and Harlem neighborhoods have highest rates of overdose death

April 1, 2020 –  
March 31, 2021



# Disparities in opioid overdose deaths among Black and Latinx persons

**TABLE 1— Trends in Opioid Overdose Death Rates by Race/Ethnicity, Across HEALing Communities Study Communities: Kentucky, New York, Massachusetts, and Ohio, 2018–2019**

	2018 Rate <sup>a</sup>	2019 Rate <sup>a</sup>	Rate Change 2018–2019		Comparison of Rate Change 2018–2019 by Race/Ethnicity, Ratio of RRs (95% CI)
			Absolute	RR (95% CI)	
All research sites combined	38.3	39.5	1.1	1.03 (0.98, 1.08)	
Non-Hispanic White	41.7	41.0	−0.7	0.98 (0.93, 1.04)	1 (Ref)
Non-Hispanic Black	31.3	43.2	11.9	1.38 (1.21, 1.57)	1.40 (1.22, 1.62)
Hispanic	41.1	41.6	0.5	1.01 (0.84, 1.22)	1.03 (0.85, 1.25)
Other	7.5	6.0	−1.5	0.80 (0.49, 1.31)	0.81 (0.49, 1.34)
Kentucky	43.6	43.9	0.3	1.01 (0.90, 1.13)	
Non-Hispanic White	48.5	47.5	−1.1	0.98 (0.87, 1.10)	1 (Ref)
Non-Hispanic Black	27.2	39.7	12.5	1.46 (1.01, 2.11)	1.49 (1.01, 2.19)
Hispanic	19.5	7.8	−11.7	0.40 (0.13, 1.28)	0.41 (0.13, 1.31)
Other	16.7	16.7	0.0	1.00 (0.40, 2.52)	1.02 (0.40, 2.60)
Massachusetts	54.1	52.5	−1.6	0.97 (0.84, 1.12)	
Non-Hispanic White	57.9	52.0	−6.0	0.90 (0.75, 1.07)	1 (Ref)
Non-Hispanic Black	36.4	45.9	9.5	1.26 (0.73, 2.18)	1.41 (0.79, 2.50)
Hispanic	64.6	73.1	8.5	1.13 (0.85, 1.50)	1.26 (0.90, 1.76)
Other	15.2	9.5	−5.7	0.63 (0.20, 1.91)	0.70 (0.22, 2.16)
New York	29.5	25.4	−4.2	0.86 (0.77, 0.96)	
Non-Hispanic White	31.9	26.0	−5.9	0.82 (0.72, 0.93)	1 (Ref)
Non-Hispanic Black	21.4	22.2	0.7	1.03 (0.72, 1.48)	1.27 (0.87, 1.86)
Hispanic	31.0	31.0	0.0	1.00 (0.72, 1.40)	1.23 (0.86, 1.75)
Other	10.3	10.3	0.0	1.00 (0.43, 2.31)	1.23 (0.53, 2.86)
Ohio	38.6	43.4	4.8	1.12 (1.05, 1.20)	
Non-Hispanic White	42.0	45.2	3.1	1.07 (0.99, 1.16)	1 (Ref)
Non-Hispanic Black	35.5	51.6	16.1	1.45 (1.24, 1.70)	1.35 (1.14, 1.61)
Hispanic	41.3	39.3	−2.1	0.95 (0.66, 1.37)	0.88 (0.61, 1.28)
Other	2.8	1.2	−1.6	0.43 (0.11, 1.66)	0.40 (0.10, 1.55)

# Current wave: illicitly manufactured fentanyls and overdose risk

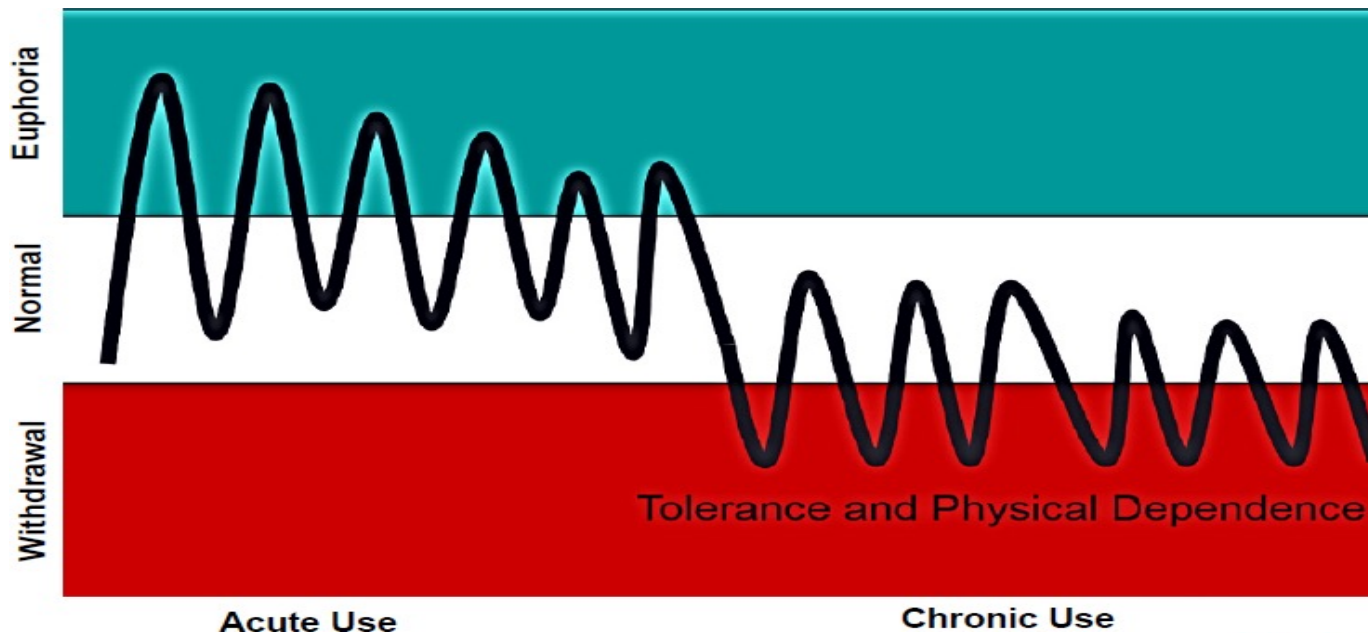
- High potency: 50-100x morphine, 30-50x heroin
- Highly lipophilic: crosses blood-brain barrier rapidly
  - Elevated risk for respiratory depression and overdose especially in presence of other CNS depressants
- Cheaper to manufacture → widespread adulteration of street drug supply → unintentional use and overdose
  - Cut or pressed into heroin, cocaine, methamphetamine, MDMA, counterfeit benzodiazepines, etc



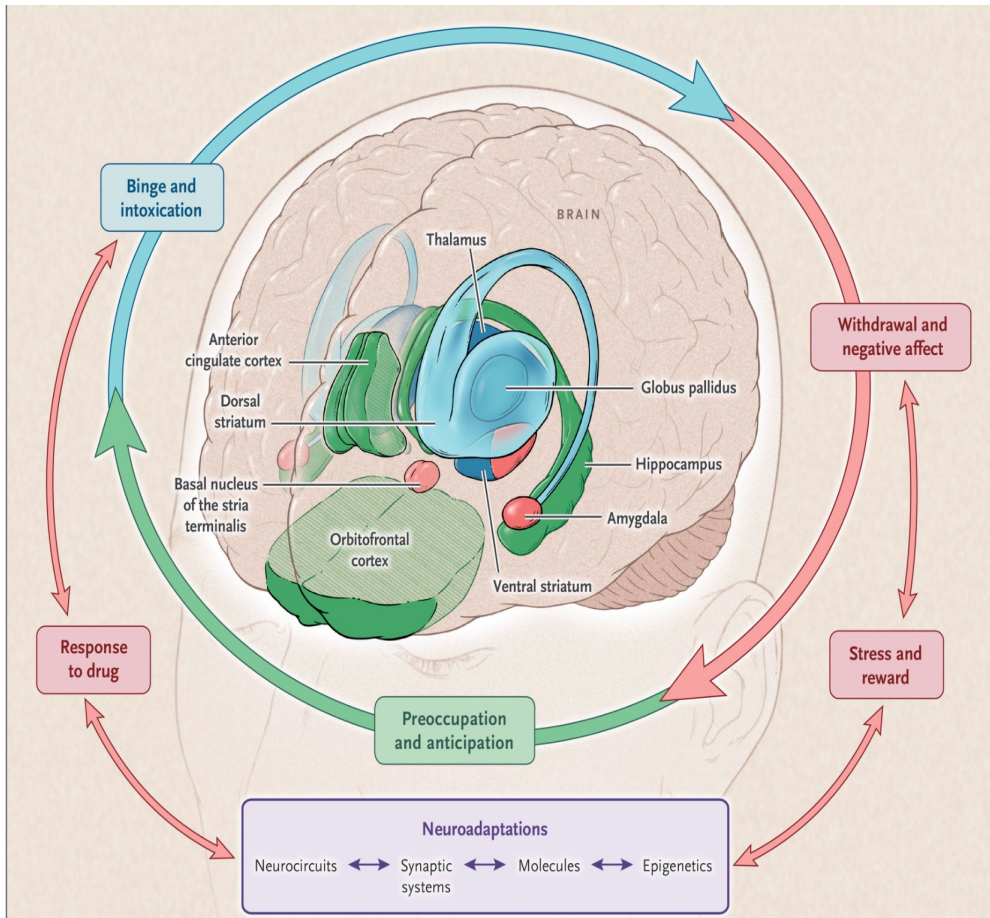


# Natural history of opioid use disorder

- Acute use → pain relief, pleasurable effects (euphoria)
- Chronic use → tolerance and physical dependence
  - Increasing doses of opioid needed to achieve desired effect
  - Continued use is needed to feel normal and avoid opioid withdrawal
    - Opioid withdrawal not life-threatening but intensely uncomfortable (eg nausea, diarrhea, body aches, anxiety)



# The brain disease model of addiction



## Addiction is a chronic disease of the brain

- > Repeated use of a substance disrupts dopamine and glutamates signaling
- > Brain's reward circuits and stress-control systems undergo neuroadaptations
- > Behaviors change in relation to substance cravings and compulsive use

Volkow et al. *NEJM* 2016

# Clinical diagnosis of opioid use disorder

## DSM-V Diagnostic Criteria:

- Presence of 2 or more criteria below within a 12-month period

### Physical dependence

- Tolerance\*
- Withdrawal symptoms\*

### Loss of control

- Cravings
- Unsuccessful attempts to stop or cut down
- Using longer/larger amount than intended
- Large amount of time/effort obtaining or recovering from opioids

### Negative consequences

- Unable to fulfill roles (work, parenting)
- Negative impact on relationships
- Hazardous conditions (DUI)
- Negative physical or psychosocial consequences
- Social/recreational activities given up

*Severity defined by #  
criteria met:  
2-3=Mild  
4-5=Moderate  
>6=Severe*

*\*Tolerance and withdrawal are not applicable if taking opioids as prescribed*

# Medications for opioid use disorder (OUD) are evidence-based and highly effective

- **3 FDA approved medications :**
  - Methadone – full opioid agonist
  - Buprenorphine – partial opioid agonist
  - Naltrexone-XR – opioid antagonist
- **Goals:** restore brain structure and function, reduce or eliminate compulsive opioid use, promote treatment retention, improve psychosocial functioning
- **“Detox” is not treatment:** short-term management of opioid withdrawal with medication taper is not as effective as long-term maintenance therapy!

# Key differences in medications for OUD

	Methadone	Buprenorphine	Naltrexone-XR
<b>FDA approval</b>	1972	2002	2010
<b>Mechanism of action</b>	FULL agonist of $\mu$ opioid receptor	PARTIAL agonist of $\mu$ opioid receptor	ANTAGONIST of $\mu$ opioid receptor
<b>Administration</b>	Oral liquid or dispersible tablets	Sublingual tab/film (injection, implant)	Injection (oral tablets off-label)
<b>Duration of effect</b>	24-36 hrs	Sublingual: 24-36 hrs (injection: 28 days) (implant: 6 months)	Injection: 28 days (oral 24-48 hrs)
<b>DEA Regulation</b>	Schedule II	Schedule III	Not controlled substance
<b>Treatment Setting</b>	Federally certified opioid treatment programs (OTP)	Anywhere, including office-based settings	Anywhere, including office-based settings
<b>Treatment Provider</b>	MD/DO at OTP	MD, DO, NP, PA with DEA waiver "X-number"	No provider regulations
<b>Dispensing</b>	Only at OTP	Community Pharmacy <sup>2</sup>	Community Pharmacy <sup>2</sup>
<b>Psychosocial Counseling</b>	Required counseling	Provider must have ability to refer for counseling	No counseling requirement

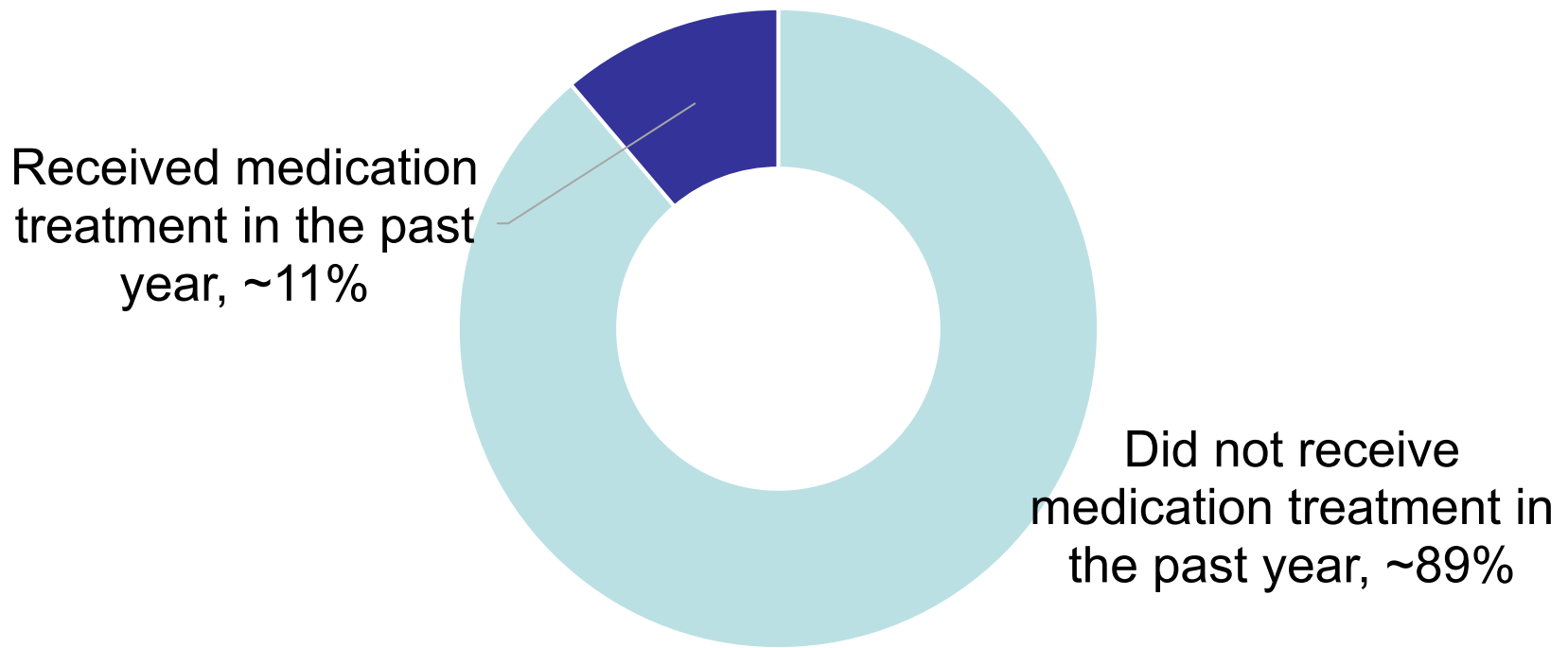
# Effectiveness of medications for OUD

	Methadone	Buprenorphine	Naltrexone-XR
<b>All cause mortality</b>	↓	↓	----
<b>Illicit opioid use</b>	↓	↓	↓
<b>Retention in treatment</b>	↑	↑	↑
<b>HIV or HCV transmission</b>	↓	↓	----
<b>Maternal fetal outcomes</b>	↑	↑	----
<b>Criminal legal involvement</b>	↓	↓	↓

Mattick et al. *Cochrane Database Syst Rev* 2014; Sordo et al. *BMJ* 2017; Jarvis et al. *Addiction* 2018

# Most Americans with OUD do not receive evidence-based treatment

2.5 million people aged 12+ had an opioid use disorder in 2020



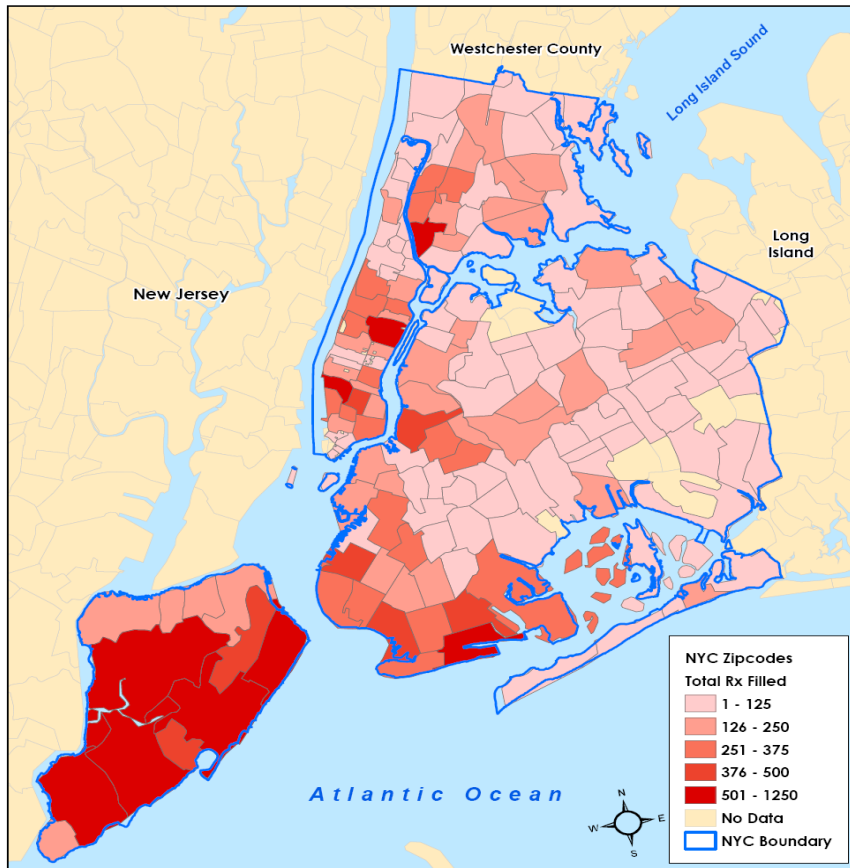
# Many barriers to treatment

- Legacy of the War on Drugs: criminalization of drug use with systematic racial discrimination
- Fragmented delivery and financing of addiction treatment
- Inadequate healthcare workforce education and training
- Legal restrictions around access to medication treatment for OUD
- STIGMA, STIGMA, STIGMA
  - > Stigma with addiction and addiction treatment
    - Especially opioid agonist medications for opioid use disorder
  - > Stigma around and within patients
    - Family, friends, communities, social and cultural norms
    - Laws and policies that stigmatize



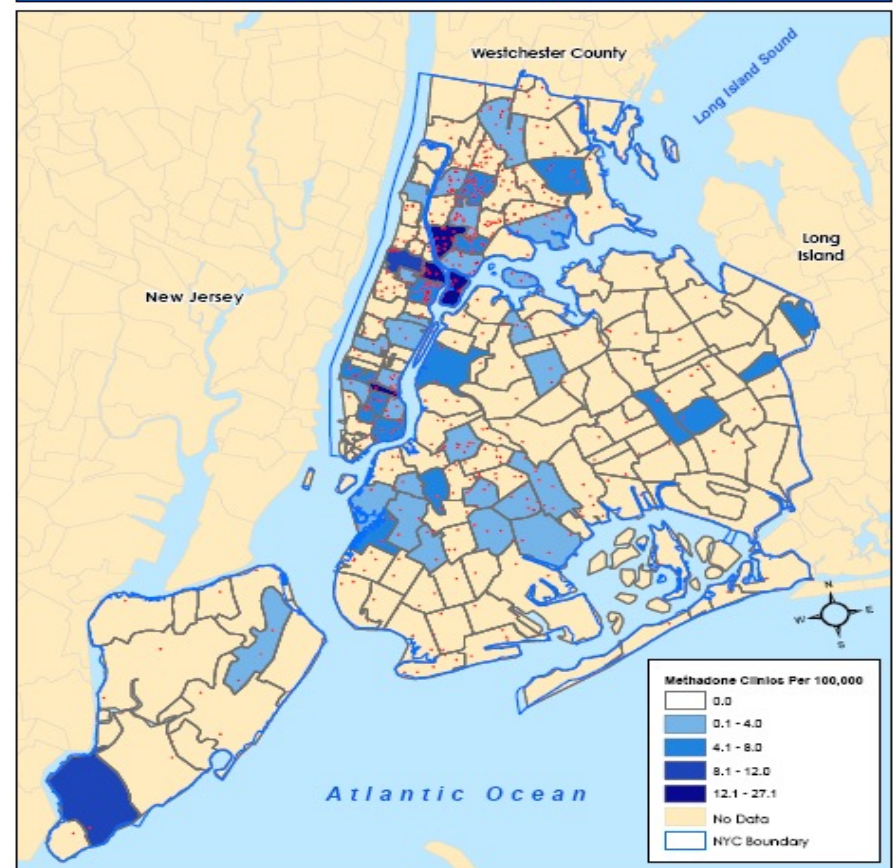
# Buprenorphine treatment capacity has historically been concentrated in high-income, non-minority neighborhoods

## BUPRENORPHINE PRESCRIPTIONS FILLED BY ZIP CODE AREAS IN 2007



\* Map Produced By Jaime Martinez. Sources: Zip Code Data From 2000 US Census and 2006 US Census Estimates. NYC Boundary from 2006 ESRI Data.

## METHADONE CLINICS PER 100,000 PEOPLE IN ZIP CODE AREAS

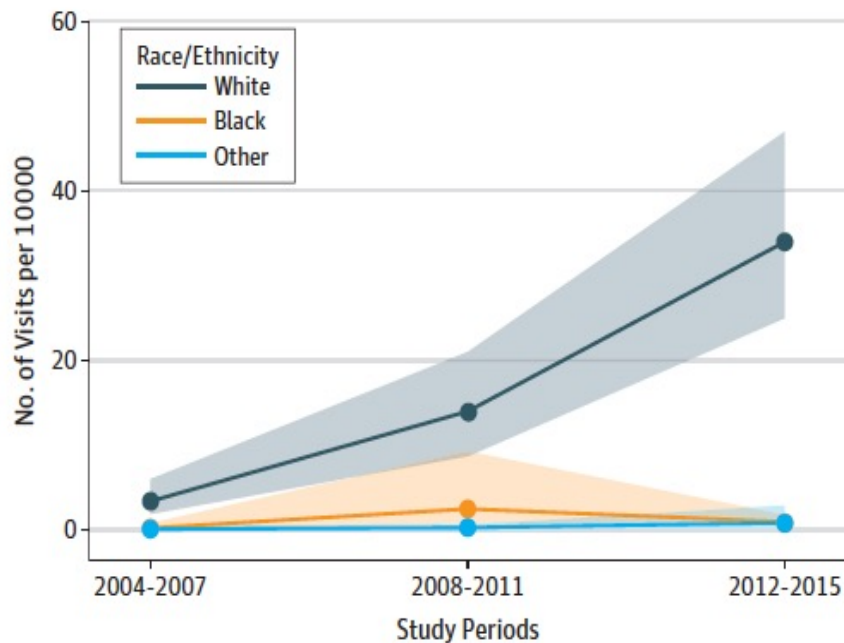


\* Map Produced By Jaime Martinez. Sources: Zip Code Data From 2000 US Census and 2006 US Census Estimates. NYC Boundary from 2006 ESRI Data. Based on Number of Methadone Clinics per 100,000 residents in a zip code.

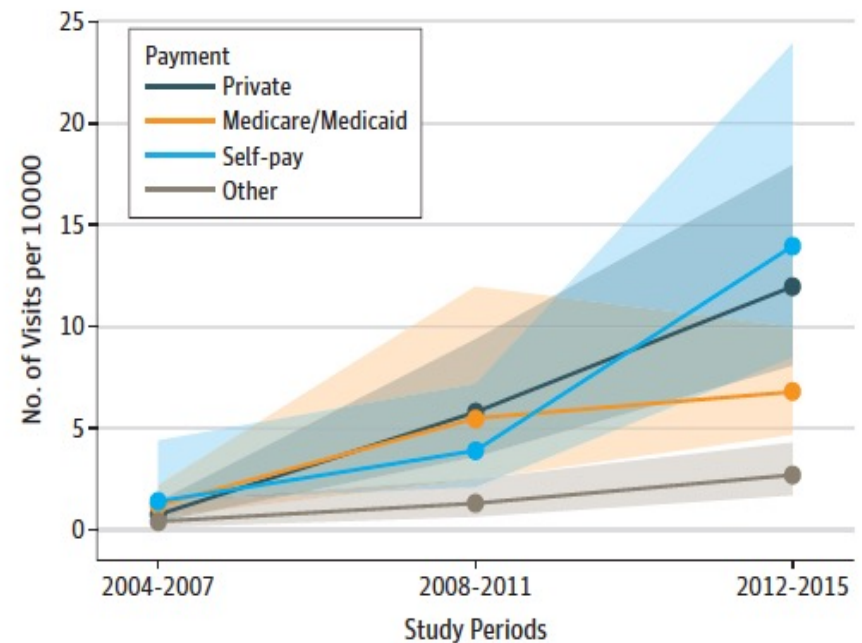
# Buprenorphine treatment is accessed mostly by white, privately insured patients

Figure. Buprenorphine Visits by Race/Ethnicity and Payment Type, 2004-2015

A Visits by race/ethnicity



B Visits by payment



Buprenorphine visits (n = 1369) and 95% CIs per 10 000 visits (shaded areas), grouped by year and stratified by race/ethnicity and payment type. Estimates account for complex survey design elements and are nationally representative.

# Objectives

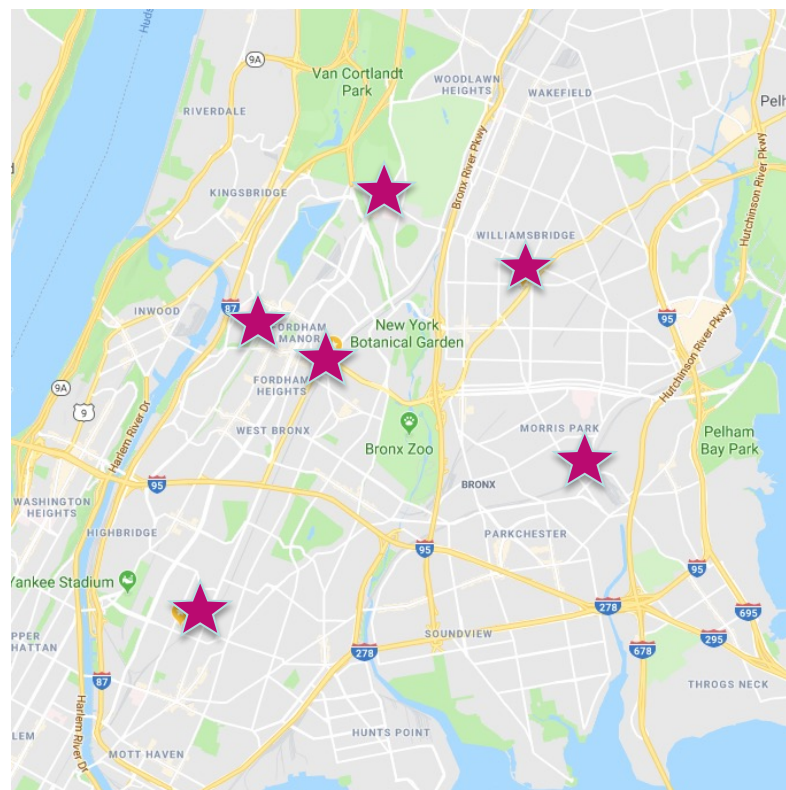
- Describe epidemiology and disparities in overdose deaths in the COVID-19 era
- Discuss telehealth delivery of buprenorphine treatment as an innovative method to address overdose disparities in community health centers
- Understand future directions for telehealth delivery of buprenorphine treatment

# Key regulatory exemptions for OUD treatment since onset of COVID-19

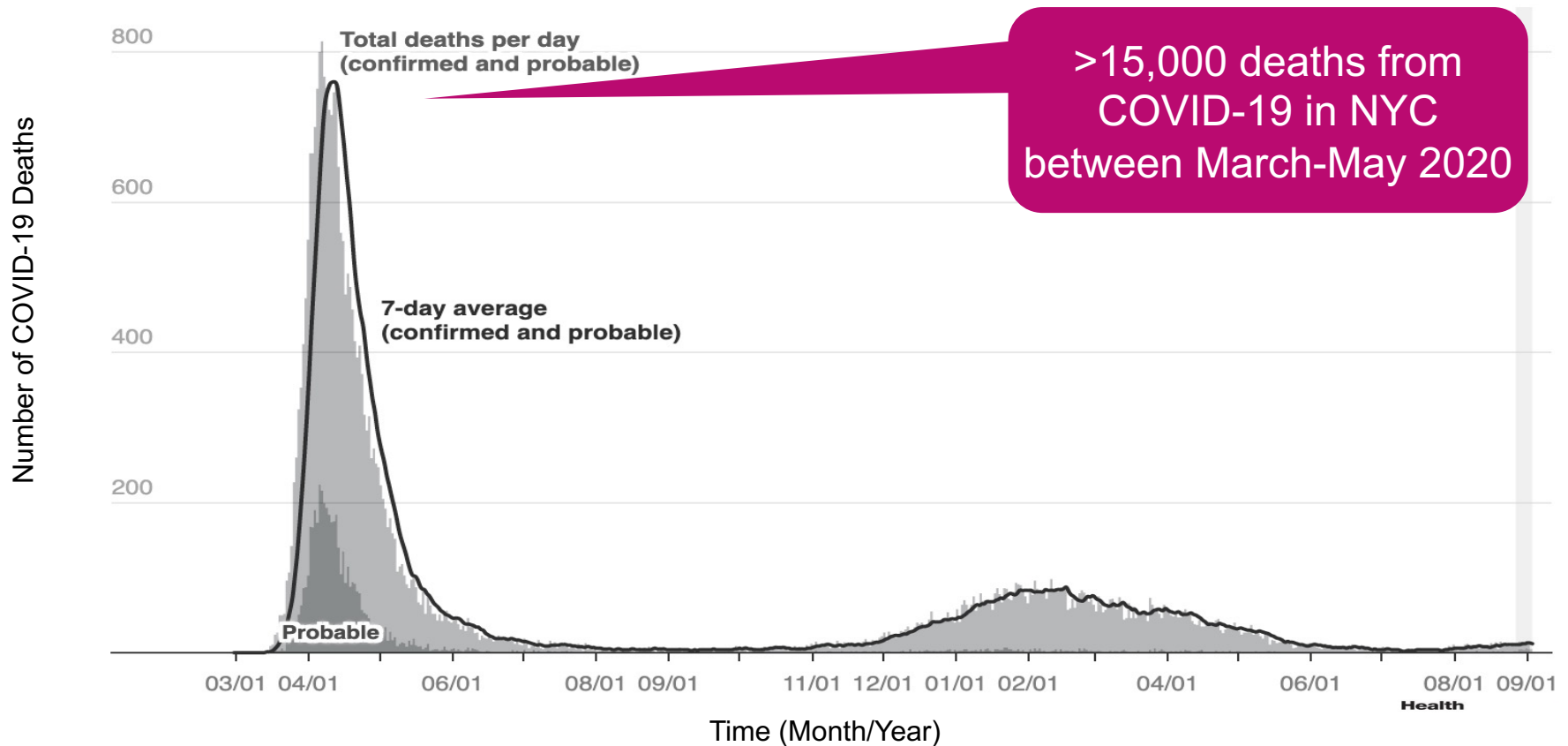
- All opioid use disorder treatment
  - HIPAA violations waived for use of non-HIPAA compliant platforms to conduct telehealth visits
  - Telehealth visits with expanded reimbursement
- Buprenorphine treatment
  - No face-to-face visit required for initiation of treatment
  - Training no longer required for clinicians to obtain DEA X-waiver to prescribe for < 30 patients in a year
- Methadone treatment
  - No face-to-face visit required for treatment continuation
  - More flexibility in take-home dose schedules
  - Mobile medication units permitted through registered opioid treatment programs

# Montefiore's Buprenorphine Treatment Network

- Buprenorphine treatment is provided by primary care clinicians at 6 community health centers across the Bronx
  - First clinic site established in 2005
  - Treated over >1300 pts with OUD
  - Currently ~400 pts in care
- Patients referred from various sources
  - Providers within and outside Montefiore
  - Community-based organizations
  - Self-referral
- >80% patients in care are Black or Latinx, and publicly insured

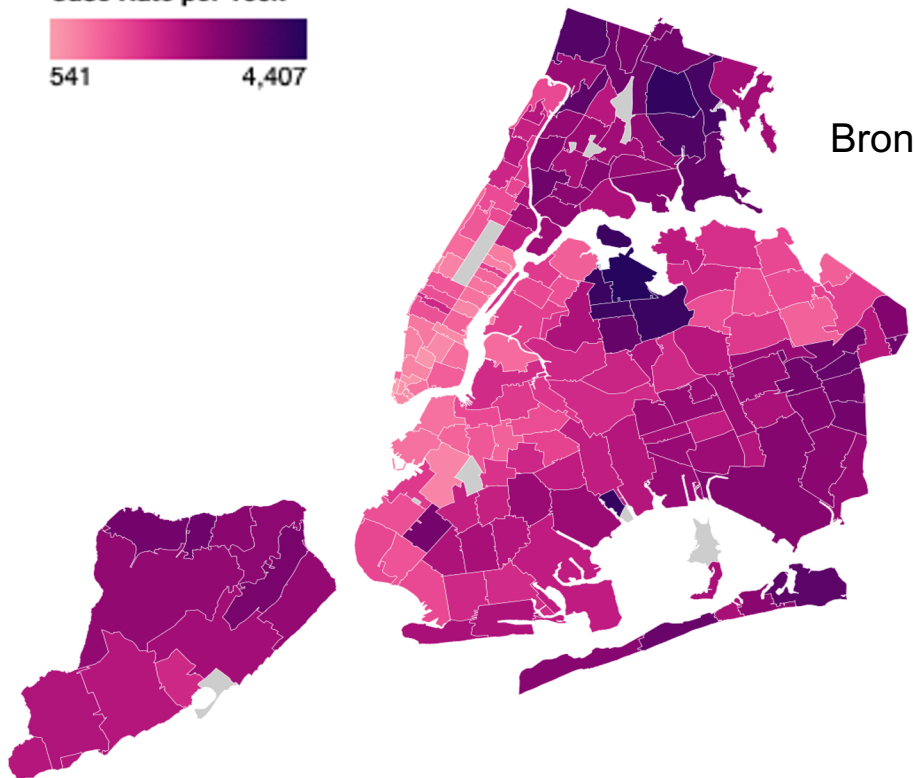


# New York City was the epicenter of the COVID-19 pandemic during Spring 2020

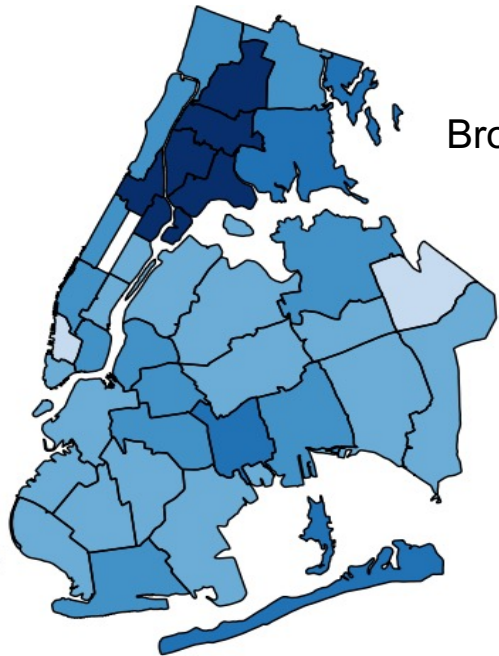


# COVID-19 spread and overdose deaths disproportionately affected the Bronx

Case Rate per 100k  
541 4,407



Bronx







Bronx

Rate of unintentional drug poisoning (overdose) death, per 100,000 residents  
October 1, 2019 – September 30, 2020



<https://www1.nyc.gov/site/doh/covid/covid-19-data.page>  
(Snapshot on June 9, 2020)

# Buprenorphine treatment delivery before and during the COVID-19 pandemic

	 <b>Medical Visits</b>	 <b>Prescriptions</b>	 <b>Urine Toxicology</b>	 <b>Naloxone</b>
<b>Before COVID</b> (Pre- Mar 2020)	In-person visits required for all patients	Prescription duration typically 7-14 days for new patients, 30 days for maintained patients	Urine drug screen required at initial visit and at all follow-up visits	Naloxone kits dispensed at initial visit and as needed at follow-up visits
<b>During COVID</b> (Mar-Aug 2020)	In-person visits suspended  <b>Telephonic visits conducted for all patients; video used when possible</b>	Prescription duration of 30 days +/- refills for all patients	Urine drug screens halted completely  Focused on self-report of medication adherence and substance use	Naloxone kits prescribed to local pharmacies or mailed to patients



# How did telehealth delivery of buprenorphine treatment impact treatment outcomes?



Contents lists available at [ScienceDirect](#)

Journal of Substance Abuse Treatment

journal homepage: [www.elsevier.com/locate/jSAT](http://www.elsevier.com/locate/jSAT)



## A comparison of office-based buprenorphine treatment outcomes in Bronx community clinics before versus during the COVID-19 pandemic

Chinazo O. Cunningham<sup>\*</sup>, Laila Khalid, Yuting Deng, Kristine Torres-Lockhart, Mariya Masyukova, Shenell Thomas, Chenshu Zhang, Tiffany Lu

*Montefiore Medical Center & Albert Einstein College of Medicine, Bronx, NY, United States of America*

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# How did telehealth delivery of buprenorphine treatment impact treatment outcomes?

- We conducted a retrospective cohort study
  - Sample: All patients with opioid use disorder referred to Montefiore's Buprenorphine Treatment Network before and during the COVID-19 pandemic

<b>“Before COVID-19 pandemic”</b>	<b>“During COVID-19 Pandemic”</b>
Patients referred to buprenorphine treatment between March 1 to August 31, 2019	Patients referred to buprenorphine treatment between March 7* to August 31, 2020

\*Public health emergency declared in New York State

# Study methods

- Extracted data from the electronic medical record system (EMR) and program logs
- Comparison of patients referred before vs during COVID-19
  - > Sociodemographic and clinical characteristics
  - > Completion rate of each step in the OUD cascade of care
- Statistical analyses done thru Chi square, Fisher's exact, and T-tests

## Sociodemographic data (EMR)

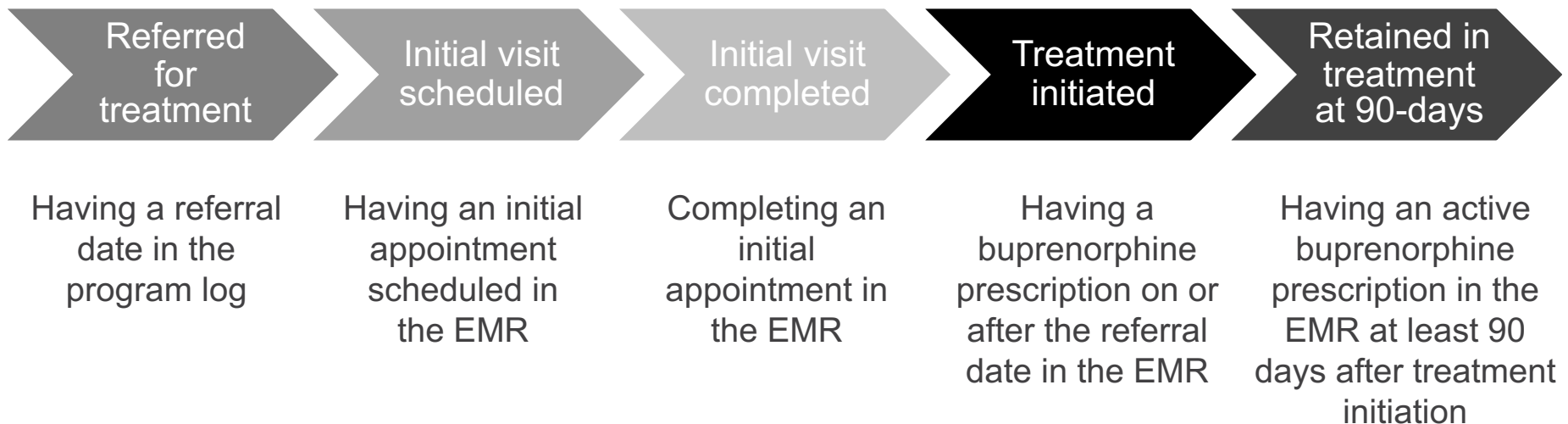
- Age
- Sex (male, female)
- Race and ethnicity (Hispanic, non-Hispanic Black, non-Hispanic White, other)
- Private insurance status at time of referral (y/n)

## Clinical data (EMR and program logs)

- Referral date
- Visits scheduled (dates) and completed (y/n)
- Buprenorphine rx data (date, quantity, refills)
- Referral from an acute care setting (y/n)
- Heroin use at time of referral (y/n)
- History of injection drug use (y/n)
- Medication for OUD at time of referral (buprenorphine, methadone, none)

# Main Outcome: OUD Cascade of Care

## Opioid Use Disorder Cascade of Care



# Results: Buprenorphine treatment referrals before and during the COVID-19 pandemic

\*p<0.05 / Before COVID-19 = March 1-August 31, 2019 / During COVID-19 – March 7-August 31, 2020

Demographic or Clinical Characteristics	Total N=107	Before COVID-19 N= 72	During COVID-19 N=35
Mean age - yr $\pm$ SD	45.9 $\pm$ 14.1	45.4 $\pm$ 14.1	46.9 $\pm$ 14.1
Female - n(%)	35 (32.7)	23 (31.9)	12 (34.3)
Race/ethnicity - n(%)			
Hispanic	56 (52.3)	36 (50.0)	20 (57.1)
Non-Hispanic Black	21 (19.6)	15 (20.8)	6 (17.1)
Non-Hispanic White	19 (17.8)	14 (19.4)	5 (14.3)
Non-Hispanic other or unknown	11 (10.3)	7 (9.7)	4 (11.4)
Private insurance	21 (19.6)	10 (13.9)	11 (31.4)*
Heroin use at time of referral	63 (58.9)	38 (52.8)	25 (71.4)
History of injection drug use	22 (20.6)	15 (20.8)	7 (20.0)
Medication for OUD at time of referral			
None	50 (46.7)	33 (45.8)	17 (48.6)
Buprenorphine	50 (46.7)	35 (48.6)	15 (42.9)
Methadone	7 (6.5)	4 (5.6)	3 (8.6)
Referred from acute care setting	27 (25.2)	14 (19.4)	13 (37.1)*

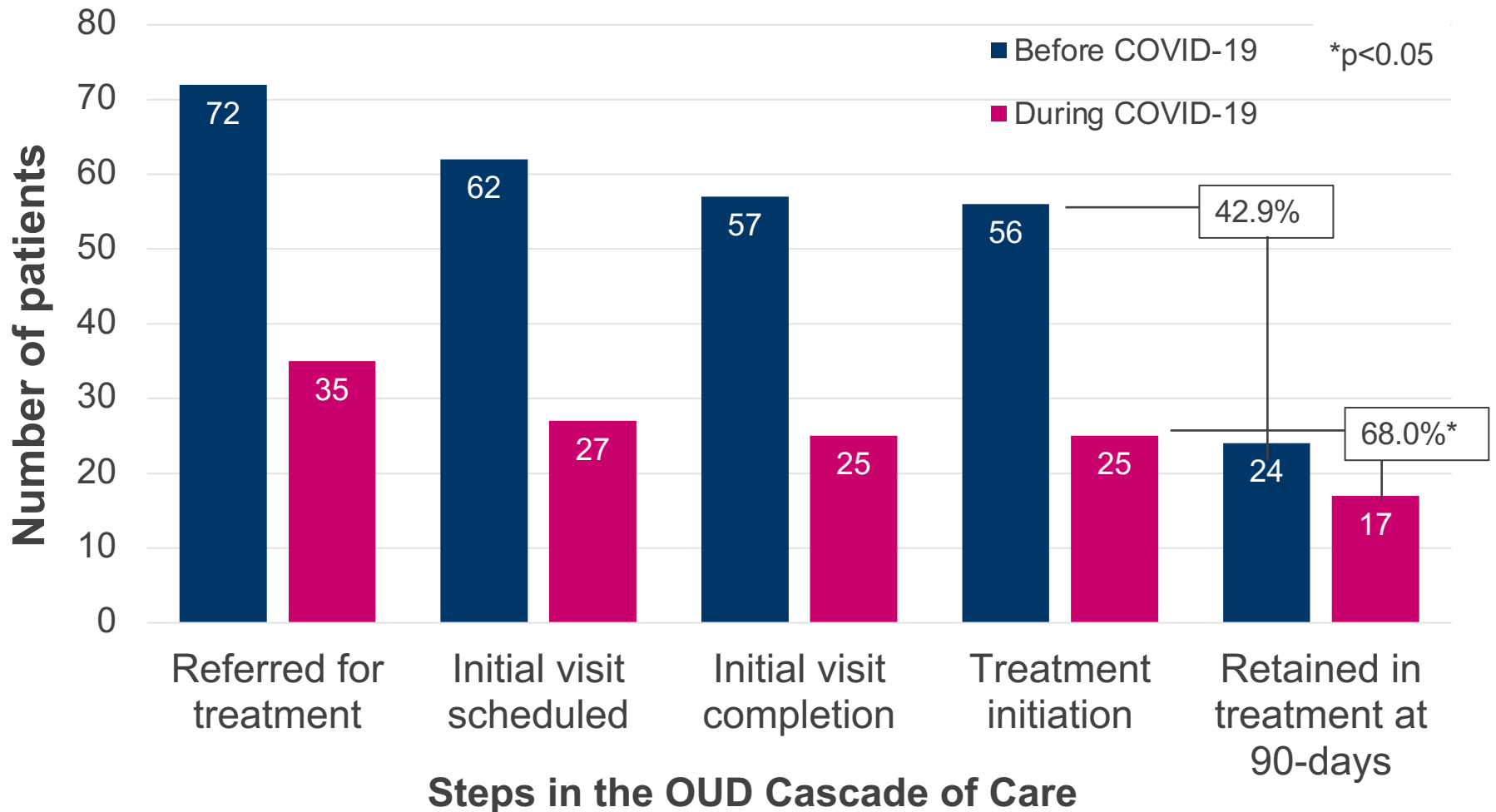
# Results: Buprenorphine treatment referrals before and during the COVID-19 pandemic

Clinical Characteristics	Total N=107	Before COVID-19 N= 72	During COVID-19 N=35
Opioid Use Disorder Cascade of Care			
Initial visit scheduled	89 (83.2)	62 (86.1)	27 (77.1)
Initial visit completed	82 (76.6)	57 (79.2)	25 (71.4)
Treatment initiation	81 (75.7)	56 (77.8)	25 (71.4)
Retained in treatment at 90-days	41 (38.3)	24 (33.3)	17 (48.6)

Before COVID-19 = March 1-August 31, 2019

During COVID-19 – March 7-August 31, 2020

# Buprenorphine treatment cascade of care before and during the COVID-19 pandemic



# Summary of Findings

- **50% fewer patients referred** to an established office-based buprenorphine treatment program in Bronx, New York during the COVID-19 pandemic
  - > **Pts were more likely to have private insurance and be referred from acute care settings**
  - > No differences in completion of each step of OUD cascade of care among all referred patients
  - > **90-day treatment retention was better** among patients who initiated buprenorphine treatment
- Limitations include
  - > Single health care system in the Bronx
  - > Small sample size
  - > Patients' characteristics and treatment outcomes limited to those available through EMR and program logs



# Objectives

- Describe epidemiology and disparities in overdose deaths in the COVID-19 era
- Discuss telehealth delivery of buprenorphine treatment as an innovative method to address overdose disparities in community health centers
- Understand future directions for telehealth delivery of buprenorphine treatment

# Lessons learned about telehealth delivery of buprenorphine treatment

- Quickly changing the OUD treatment paradigm is feasible
  - > Telehealth delivery of buprenorphine treatment is rooted in harm reduction
  - > Bronx community health centers saw comparable “cascade of care” before and during pandemic
    - Currently using a hybrid model where both telehealth and in-person visits are offered to engage pts in care
- Telehealth equity
  - > One size does not fit all!!
  - > Multiple structural barriers: no device, no or limited internet/data, no privacy, low digital literacy

# Toward Telehealth Equity: Telehealth Bridge Programs

- Telehealth hotlines are used to connect patients with a clinician typically board certified in emergency medicine, medical toxicology or addiction medicine within the same day in order to initiate buprenorphine treatment and link to community-based treatment program
  - > New York Matters
  - > Rhode Island Buprenorphine Hotline

<https://mattersnetwork.org/>

Samuels et al. J Add Med 2020

# Toward Telehealth Equity: Other Innovations for Buprenorphine Treatment

- Integrating staff assistance with mobile app for telehealth as part of the treatment workflow
- Using Zoom conference technology to allow patients to connect via phone to clinical team
- Equipping outreach workers with smartphones to facilitate telehealth visits during outreach to local homeless encampments
- Partnering with syringe service programs to offer telehealth initiation of buprenorphine treatment
- Setting up sanitized phone booths outside homeless shelters to facilitate private telehealth visits

# Policy Implications: Support TREATS Act

- TREATS Act (S340) – Introduced Feb 2021
  - > <https://www.congress.gov/bill/117th-congress/senate-bill/340/text>
  - > Proposes to amend the 2008 Ryan Haight Act to allow buprenorphine initiation using telehealth technology beyond duration of public health emergency
  - > Still requires use of video-enabled technology, which is not widely accessible to the over 21 million Americans who live in “digital deserts” and the third of rural Americans who lack broadband access
  - > Maintaining exemptions to audio-only buprenorphine prescribing for the remainder of the opioid overdose crisis public health emergency & amending the TREATS Act to include audio-only technologies is essential

# Practice Implications: Disseminating Best Practices through Clinical Guidelines

NYS Clinical Guidelines for Substance Use Treatment  
(<https://www.hivguidelines.org/substance-use/>)



## CLINICAL GUIDELINES PROGRAM

NEW YORK STATE DEPARTMENT OF HEALTH AIDS INSTITUTE | HIV • HCV • SUBSTANCE USE • LGBT HEALTH

### Treatment of Opioid Use Disorder

*Lead Author: Chinazo O. Cunningham, MD, MS, with the Substance Use Guideline Committee, updated January 2021*

### Guidance: Opioid Use Disorder Treatment During COVID-19

*Lead author: Tiffany Lu, MD, MS<sup>1</sup>*

# Acknowledgements

## Buprenorphine Treatment Network Team

- *Chinazo Cunningham, MD, MS*
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- Brianna Norton, DO
- Kristine Torres-Lockhart, MD
- Shenell Thomas, RN
- Chrystal Campbell, RN
- Angela Giovanniello, PharmD

## Patients & Funders



@TiffanyLuMD

Email:

[tlu@montefiore.org](mailto:tlu@montefiore.org)