



Addiction as a Chronic Disease

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Disclosures

My spouse/partner and I have the following relevant financial relationship with a commercial interest to disclose:

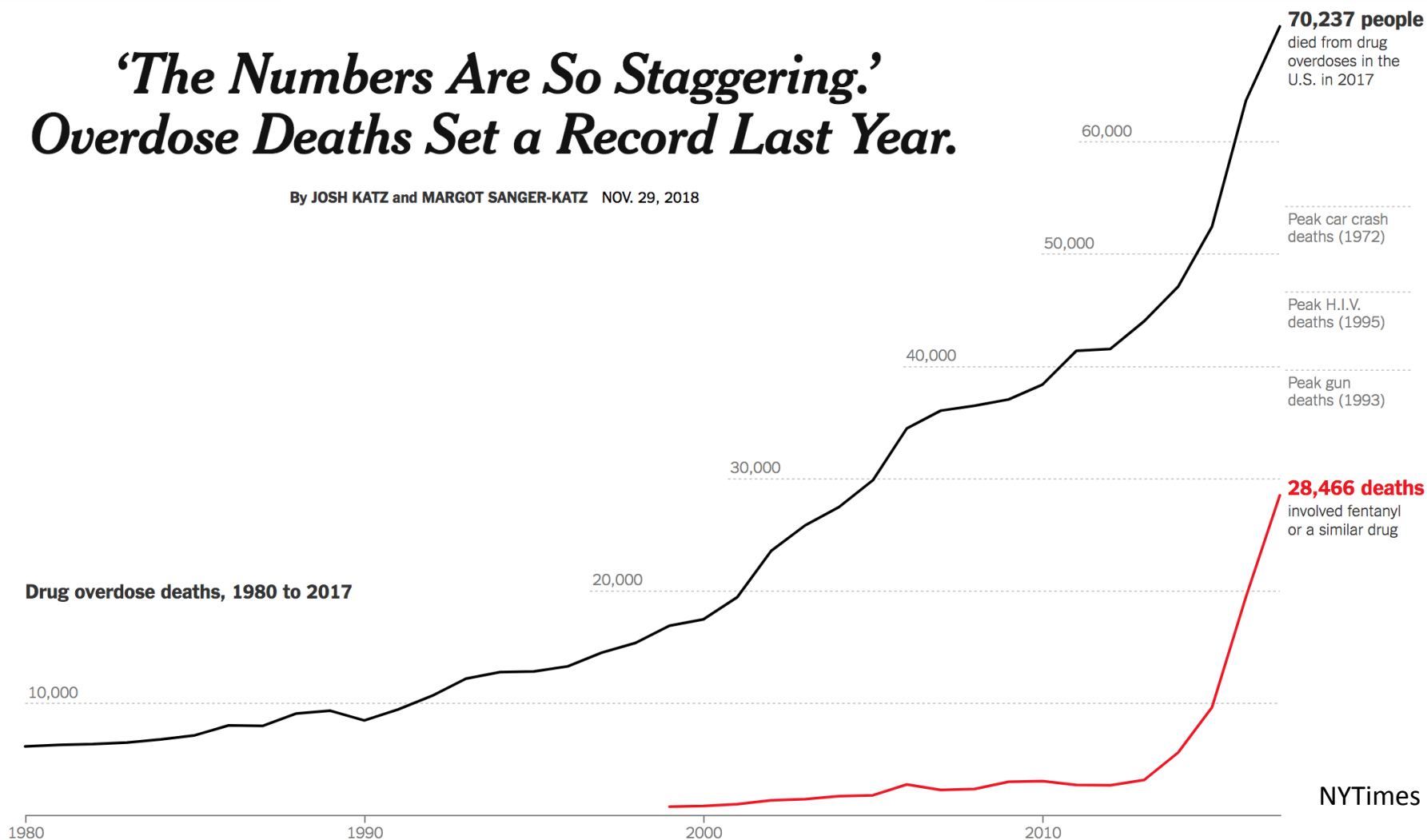
- Consultant
MCSTAP (Massachusetts Consultation Service for Treatment of Addiction and Pain) funded by Massachusetts government
- Expert witness
Vermont State Office of Attorney General

Objectives

- Approach management of addiction with chronic disease framework
- Apply concepts of prevention and early intervention to addiction treatment
- Describe effective treatment for opioid use disorder

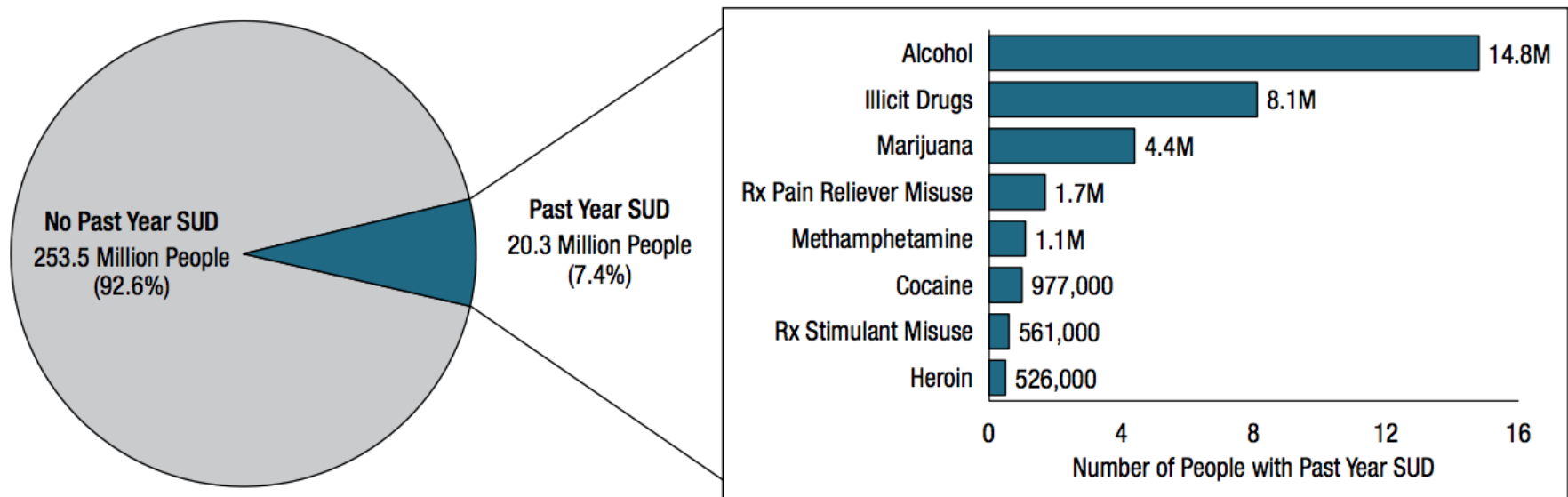
‘The Numbers Are So Staggering.’ Overdose Deaths Set a Record Last Year.

By JOSH KATZ and MARGOT SANGER-KATZ NOV. 29, 2018



U.S. Prevalence of substance use disorder

Figure 42. People Aged 12 or Older with a Past Year Substance Use Disorder (SUD): 2018



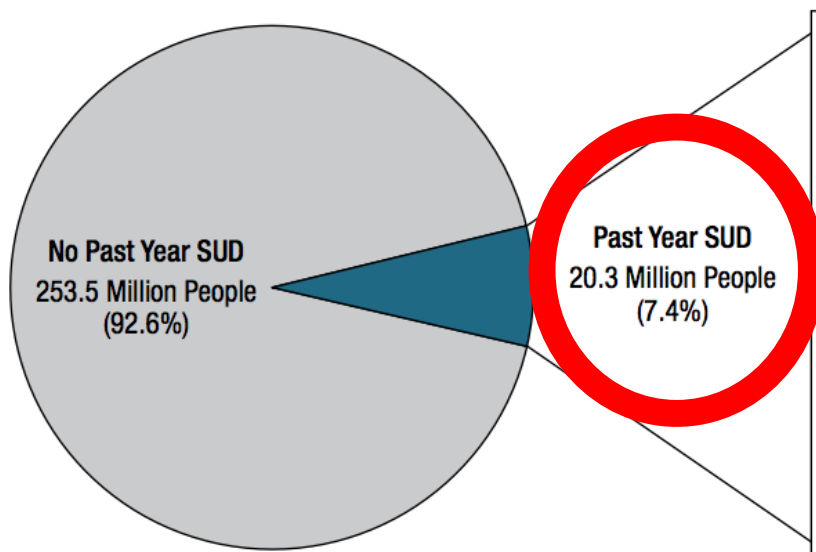
Rx = prescription.

NSDUH 2018

Note: The estimated numbers of people with substance use disorders are not mutually exclusive because people could have use disorders for more than one substance.

U.S. Prevalence of substance use disorder

Figure 42. People Aged 12 or Older with a Past Year Substance Use Disorder (SUD): 2018



For context:

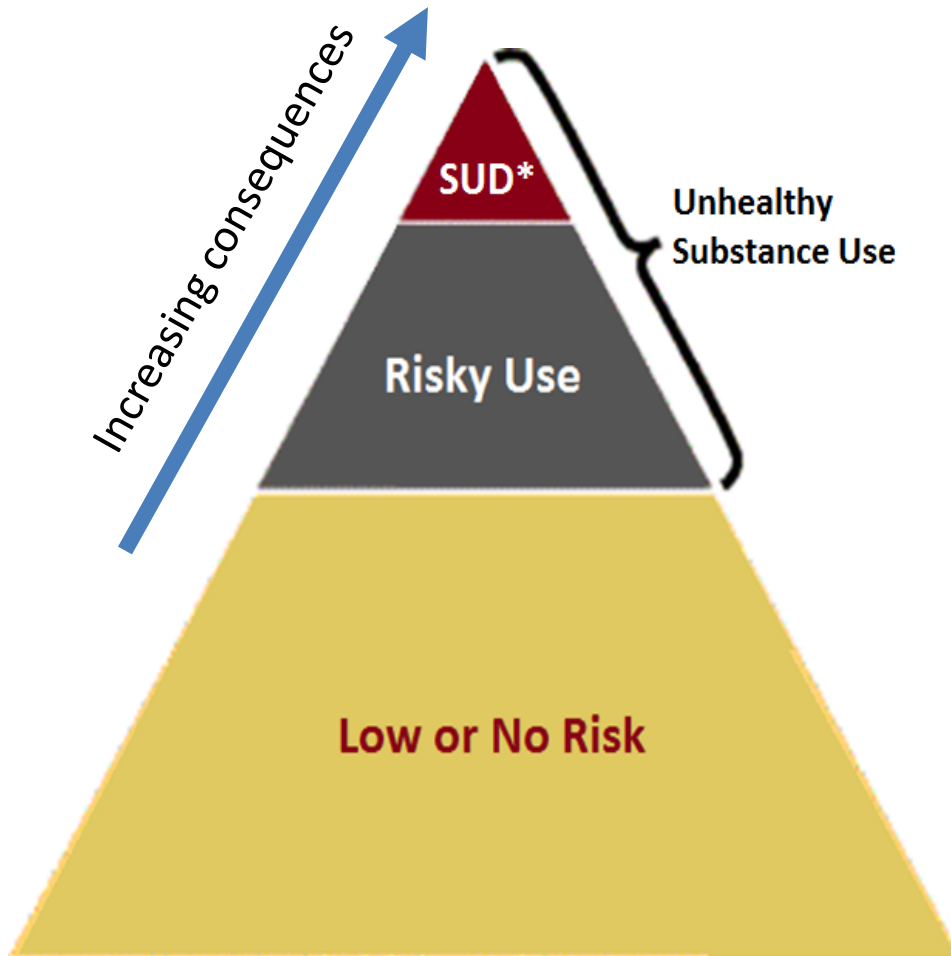
- **34 million (14%) of adults smoke cigarettes**
- **7% of Americans with diabetes**

Rx = prescription.

NSDUH 2018

Note: The estimated numbers of people with substance use disorders are not mutually exclusive because people could have use disorders for more than one substance.

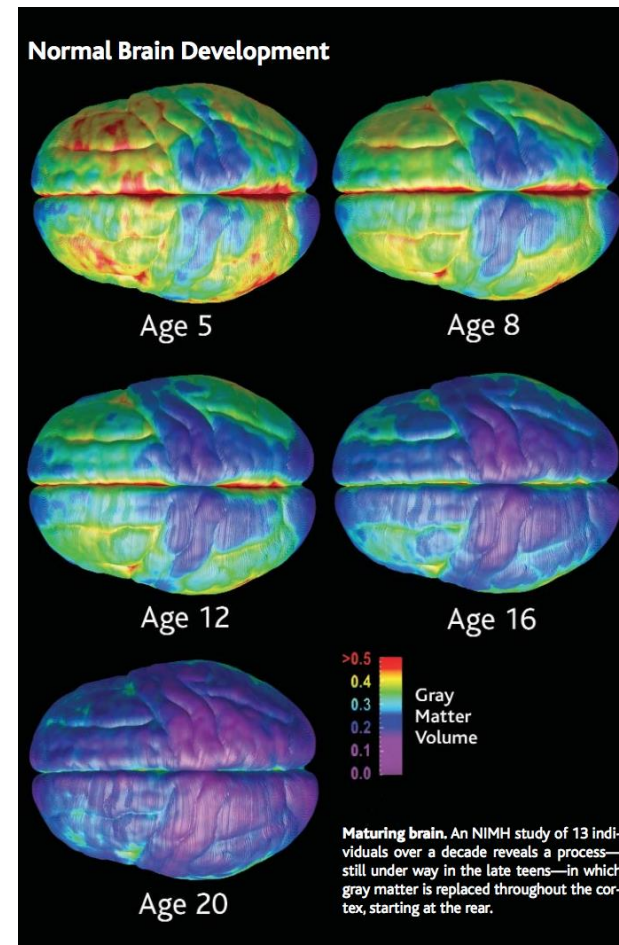
Spectrum of substance use



- **3/5** of people 12 and over in the U.S. used tobacco, alcohol or illicit drugs in last month
- **~1/8** of those who have used substances meet criteria for SUD

Addiction is a developmental condition

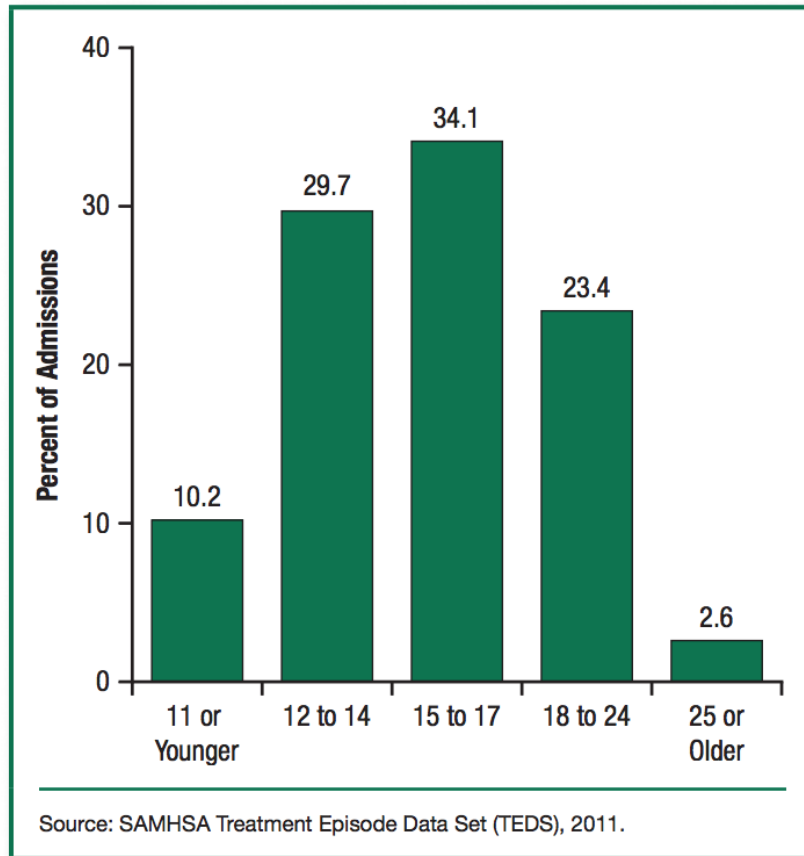
Early exposure matters



www.sciencemag.org SCIENCE VOL 305 30 JULY 2004

Yule, Lyons Wilens 2018

Age of Substance Use Initiation among Treatment Admissions Aged 18 to 30

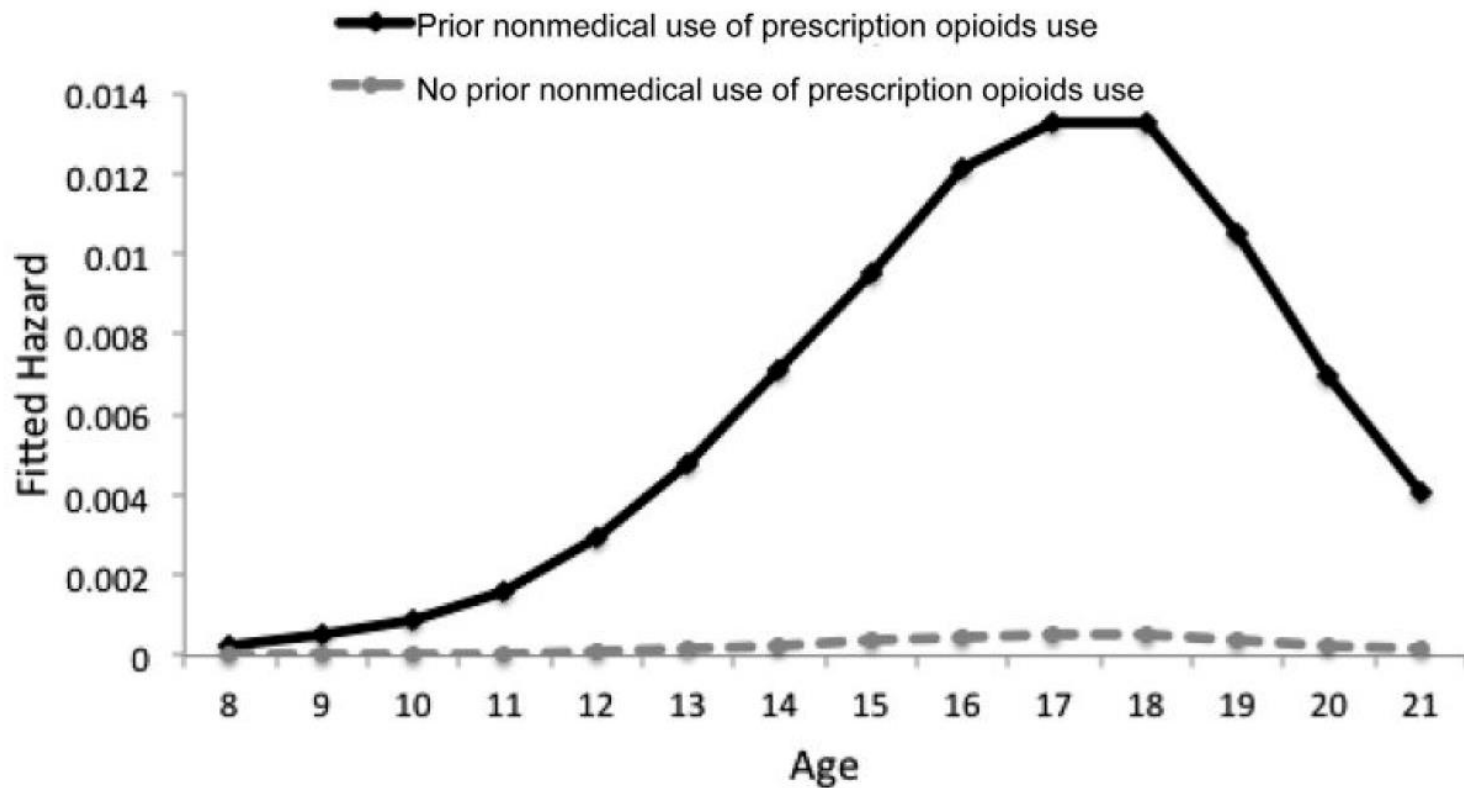


75% initiated substances prior to age 18

98% prior to age 25

SAMHSA TEDS Report 2014

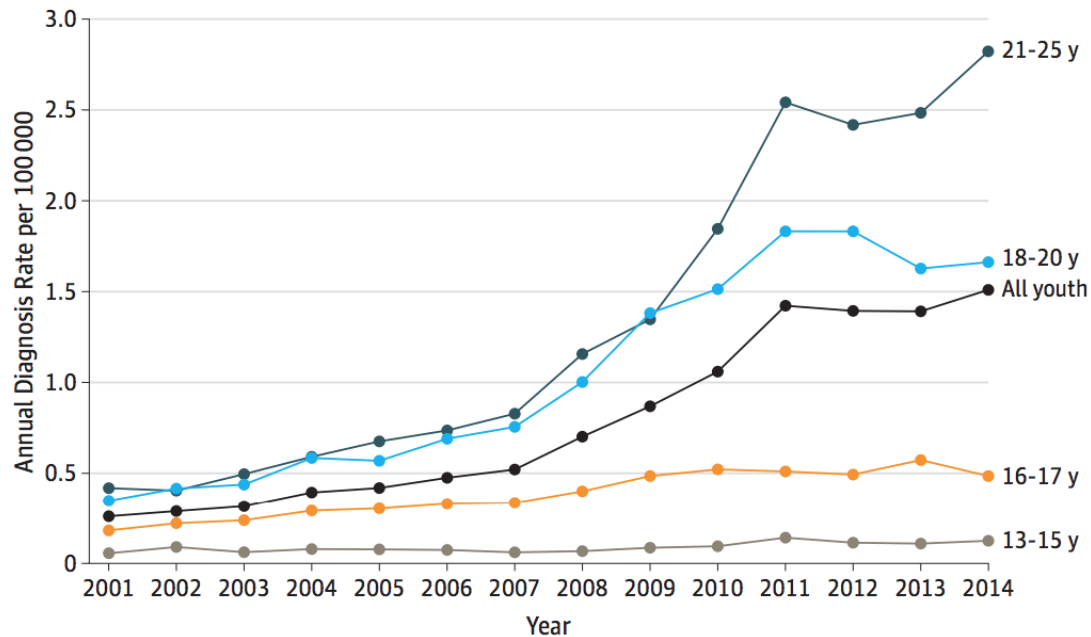
Early use non-rx opioids predicts heroin initiation



Cerda, 2016

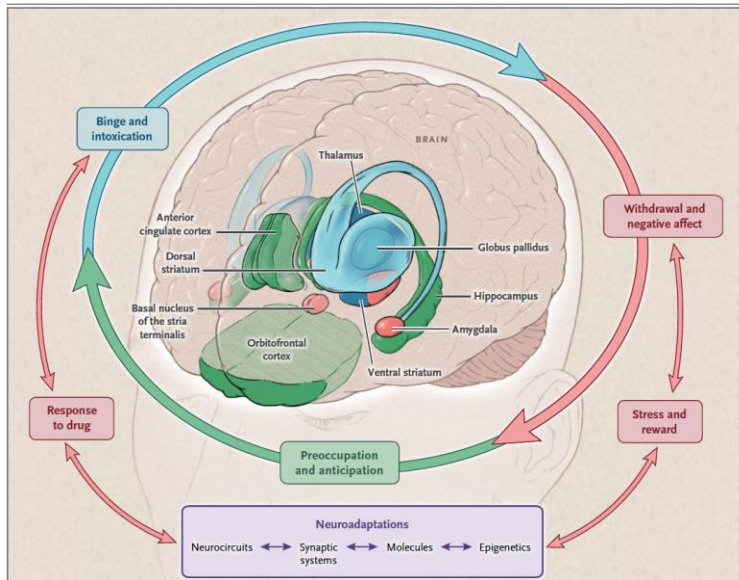
Opioid use disorder increasing in youth

Figure 1. Trends in Annual Rate of New Diagnoses of Opioid Use Disorder Among Youth



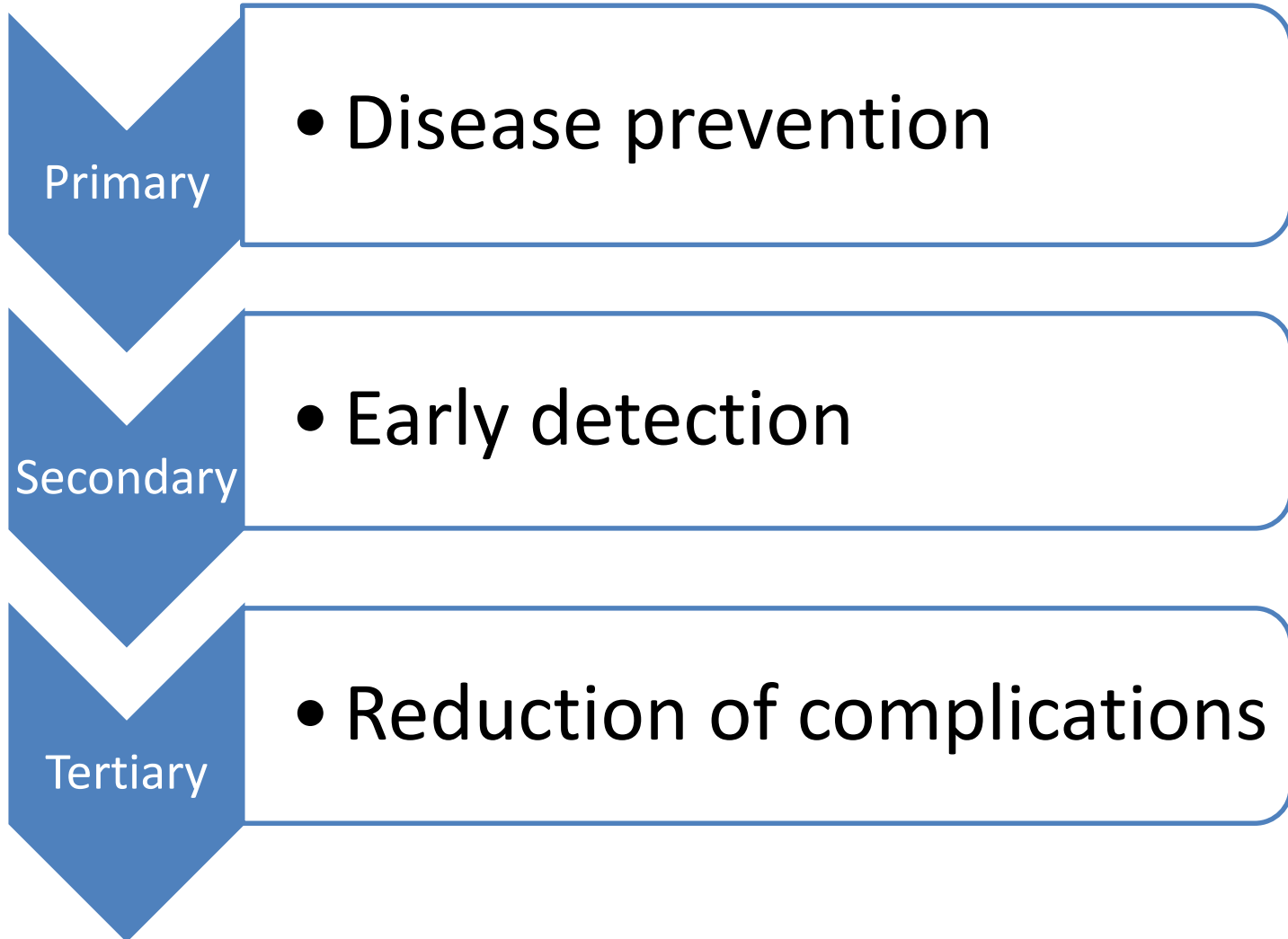
Hadland, JAMA Pediatrics 2017

Definition of addiction as a brain-disease



- **Primary, chronic brain disease characterized by compulsive drug seeking and use *despite harmful consequences***
- **Disrupted circuitry impacting**
 - Reward, motivation, learning & memory, inhibitory control
- **Cycles of recurrence and remission**

Disease management: A public health lens



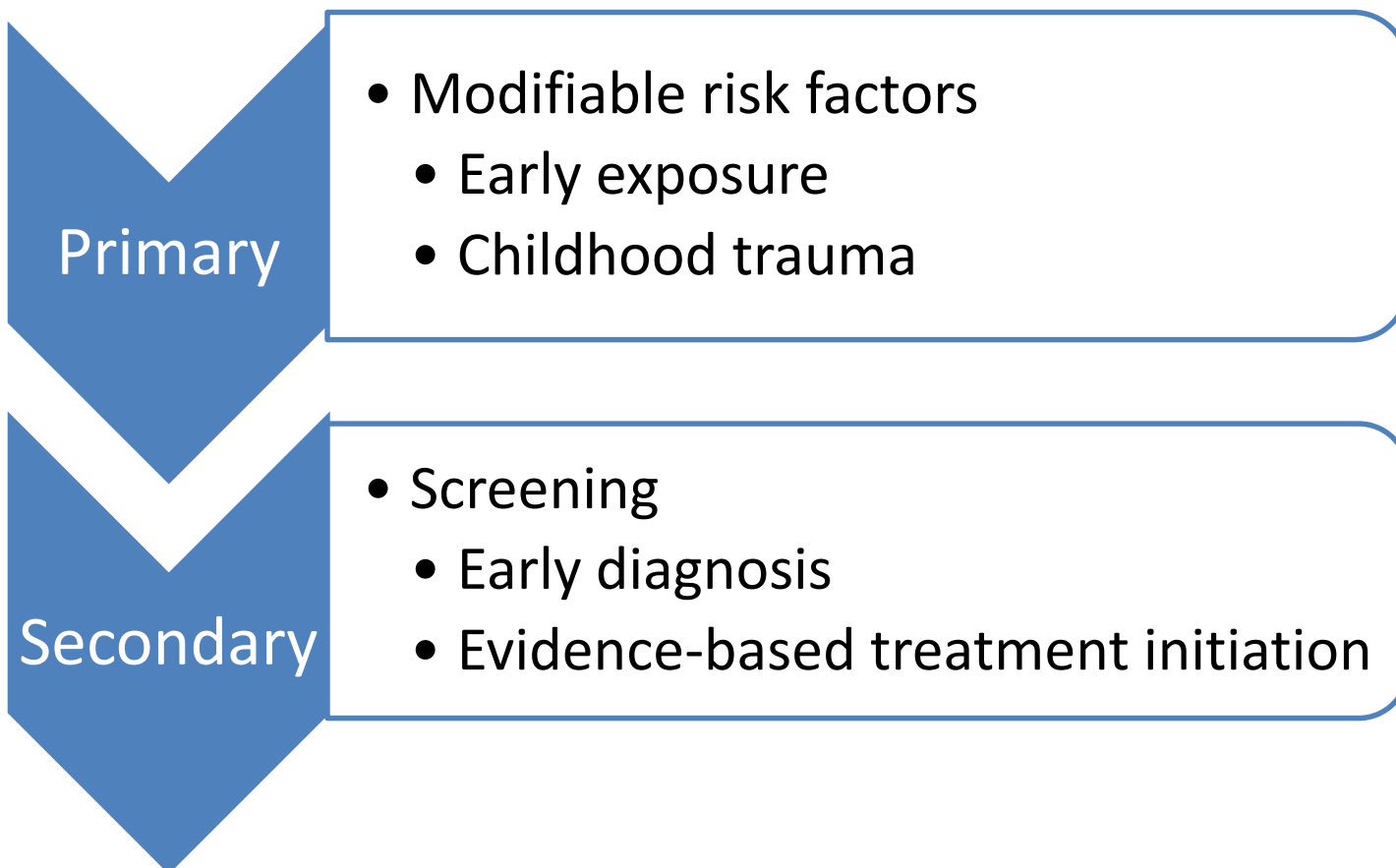
Risk and protective factors for addiction



Primary prevention

- **Modifiable risk factors**
 - Brain development: age at first exposure
 - Environment: access to drugs/alcohol, media messaging, perceived risk
 - Psychology: Mental health disorders, childhood trauma
- **Non-modifiable**
 - Biology: genetics, family history

Secondary prevention



EARLY INTERVENTION CRITICAL TO PREVENT PROGRESSION TO MORE SEVERE DISEASE



WHAT WE KNOW

People with opioid use disorder (OUD) who stay in treatment are more likely to survive.

STUDY OBJECTIVE

Identify the % of young people (ages 13 to 22) who receive medication for OUD and examine the association with treatment duration.

DATA SOURCE

Health insurance claims of young people in 11 states who were enrolled in Medicaid in 2014 and 2015.

Of the 4,800 young people examined in the study

ONLY 1 in 4
received medication



within 3 months of their OUD diagnosis.

Those who did receive a medication were less likely to drop out of treatment and stayed in treatment longer, on average.

BEHAVIORAL SERVICES ONLY

BUPRENORPHINE

METHADONE

NALTREXONE

3 MONTHS

6 MONTHS

9 MONTHS

12 MONTHS

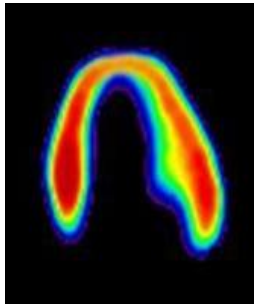
MEDIAN TIME IN TREATMENT

BOTTOM LINE Strategies to address the underuse of medications in young people with OUD are 'urgently needed'

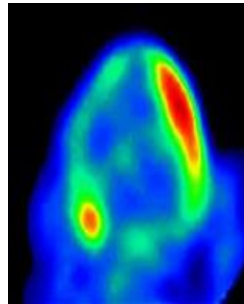
Hadland SE et al, Receipt of Timely Addiction Treatment and Association of Early Medication Treatment with Retention in Care Among Youths with Opioid Disorder. JAMA Pediatr. 2018; 172 (10).

Substance Use Disorder: alters brain structure, function

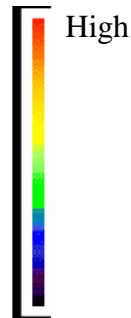
Decreased Heart Metabolism in
Coronary Artery Disease



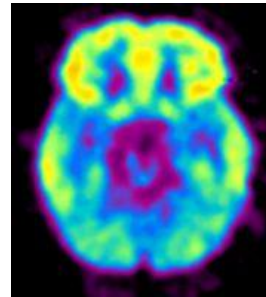
Healthy heart



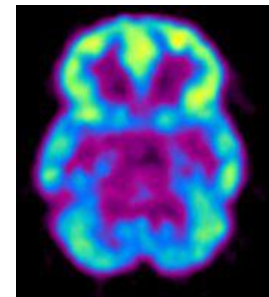
Diseased Heart



Decreased Brain Metabolism in
Substance Use Disorder



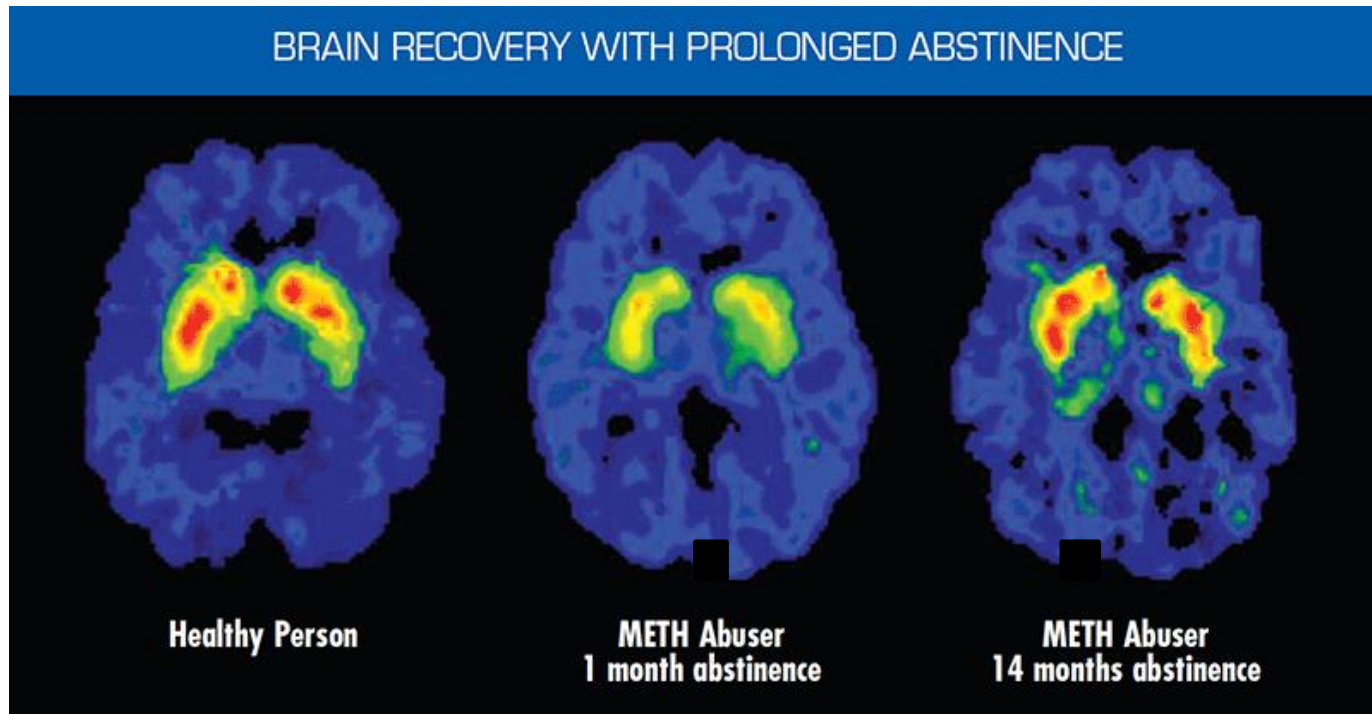
Healthy Brain



Diseased Brain

NIDA

Recovery takes time



Volkow et al. J. Neurosci., December 1, 2001, 21(23):9414–9418

Opioid Detoxification Ineffective and Dangerous

INPATIENT OPIOID DETOXIFICATION OUTCOMES

31

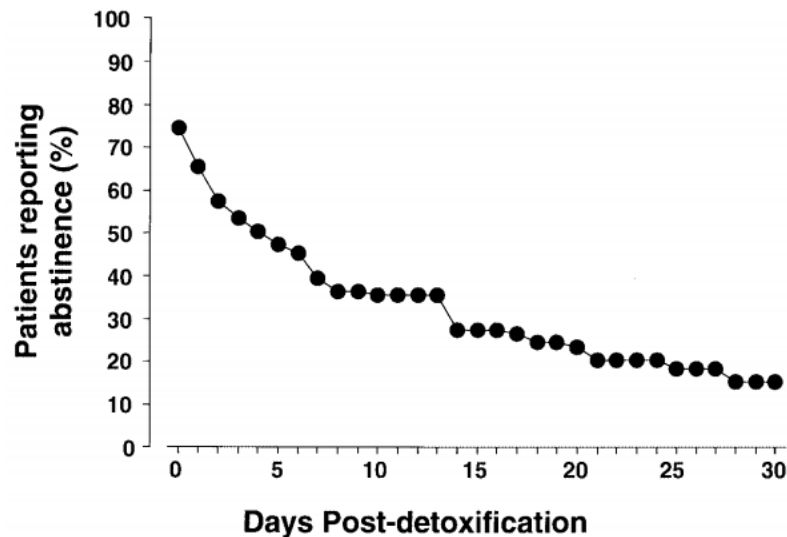


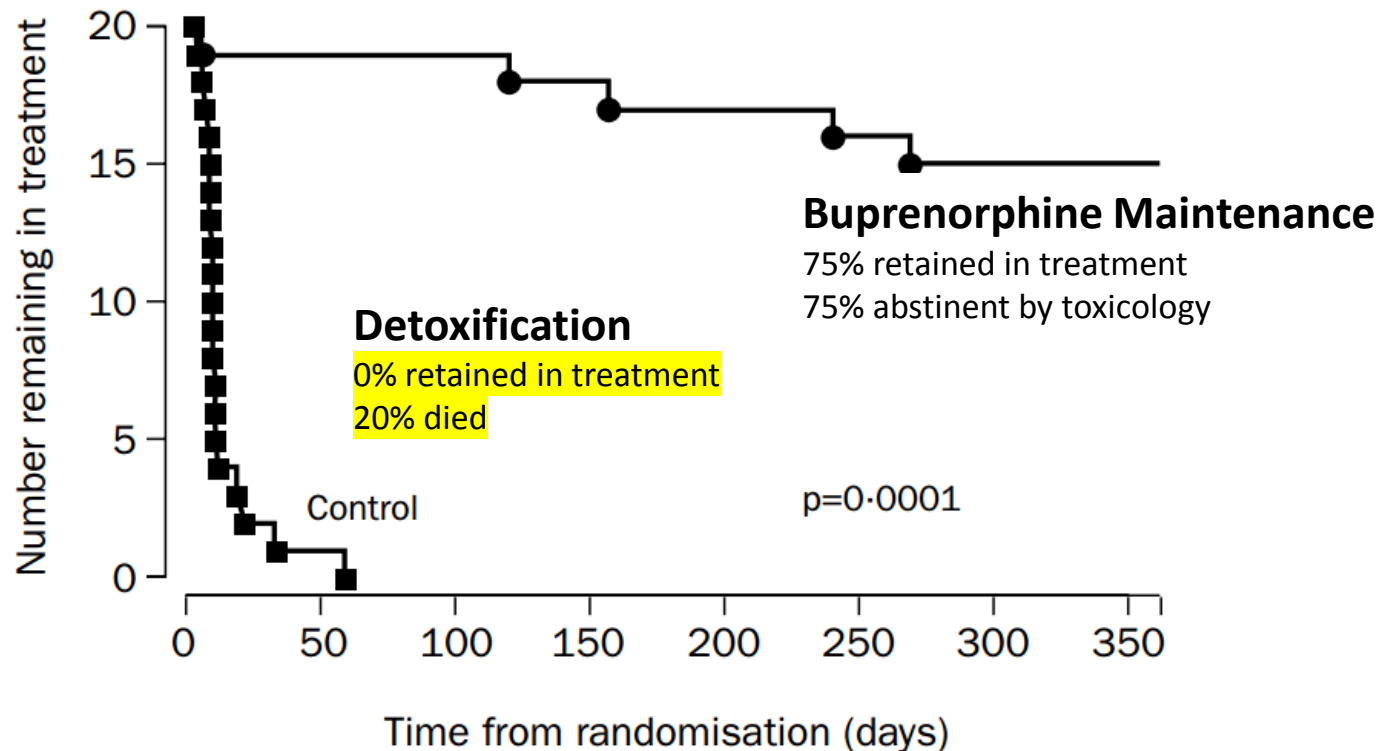
Figure 2. Abstinence from heroin. Percent of patients who remained abstinent from heroin (based on self-report) after a brief inpatient detoxification for opioid dependence. Data were collected 1 month postdetoxification. This variable was assessed during the latter half of the study with only a subset of the sample ($n = 66$ out of 116).

- High **relapse rate** post detox
 - 27% on day of discharge
 - 65% within 1 month
 - 90% within 1 year
- Low rates of **treatment engagement**
- Increased **risk of overdose** due to decreased tolerance

Bailey GL J Subst Abuse Treatment 2013

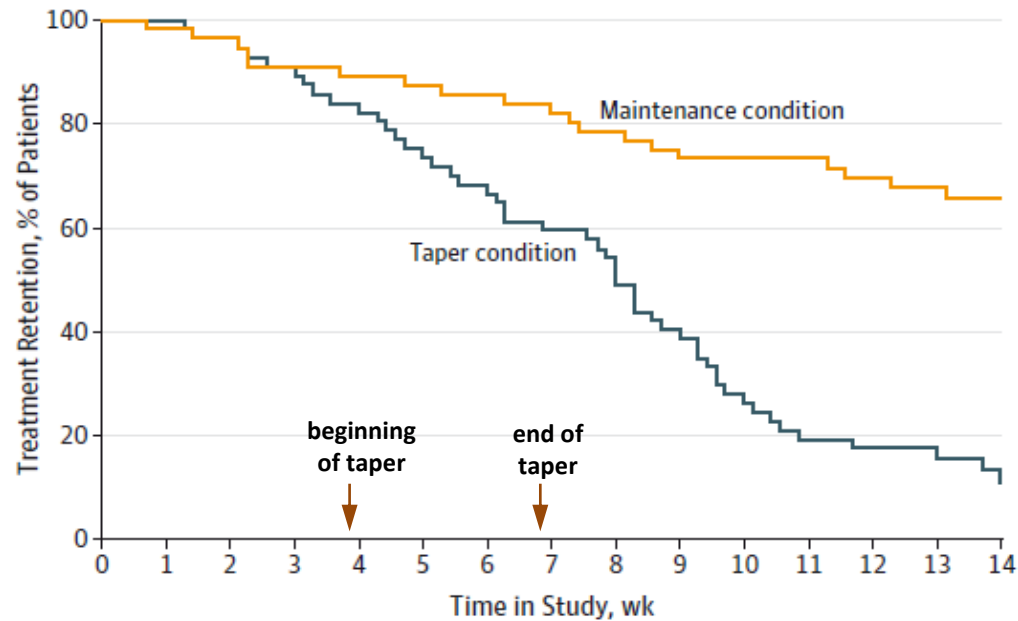
Chutuape et al. Am J Drug Alcohol Abuse. 2001 Feb;27(1):19-44.

Opioid Agonist Therapy is Effective Treatment



Kakko et al. Lancet. 2003 Feb
22;361(9358):662-8

Buprenorphine: Maintenance vs. Taper



Fiellin et al., 2014

Chronic disease model

Percentage of Patients Who Relapse

TYPE 1 DIABETES



DRUG ADDICTION



HYPERTENSION



ASTHMA



Relapse rates for drug-addicted patients are compared with those suffering from diabetes, hypertension, and asthma. Relapse is common and similar across these illnesses (as is adherence to medication). Thus, drug addiction should be treated like any other chronic illness, with relapse serving as a trigger for renewed intervention.

Source: McLellan et al., JAMA, 284:1689-1695, 2000.

NIDA. Principles of Drug Addiction Treatment. 2012. McLellan et al., JAMA, 284:1689-1695, 2000 .

Stigma

“...It is interesting that **relapse among patients with diabetes, hypertension, and asthma** following cessation of treatment has been **considered evidence of the effectiveness of those treatments** and the need to retain patients in medical monitoring.

In contrast, **relapse to drug or alcohol use following discharge from addiction treatment** has been considered **evidence of treatment failure...**”

NIDA. Principles of Drug Addiction Treatment. 2012. McLellan et al., JAMA, 284:1689-1695, 2000

Management similar to Diabetes, HTN

Chronic disease: no cure

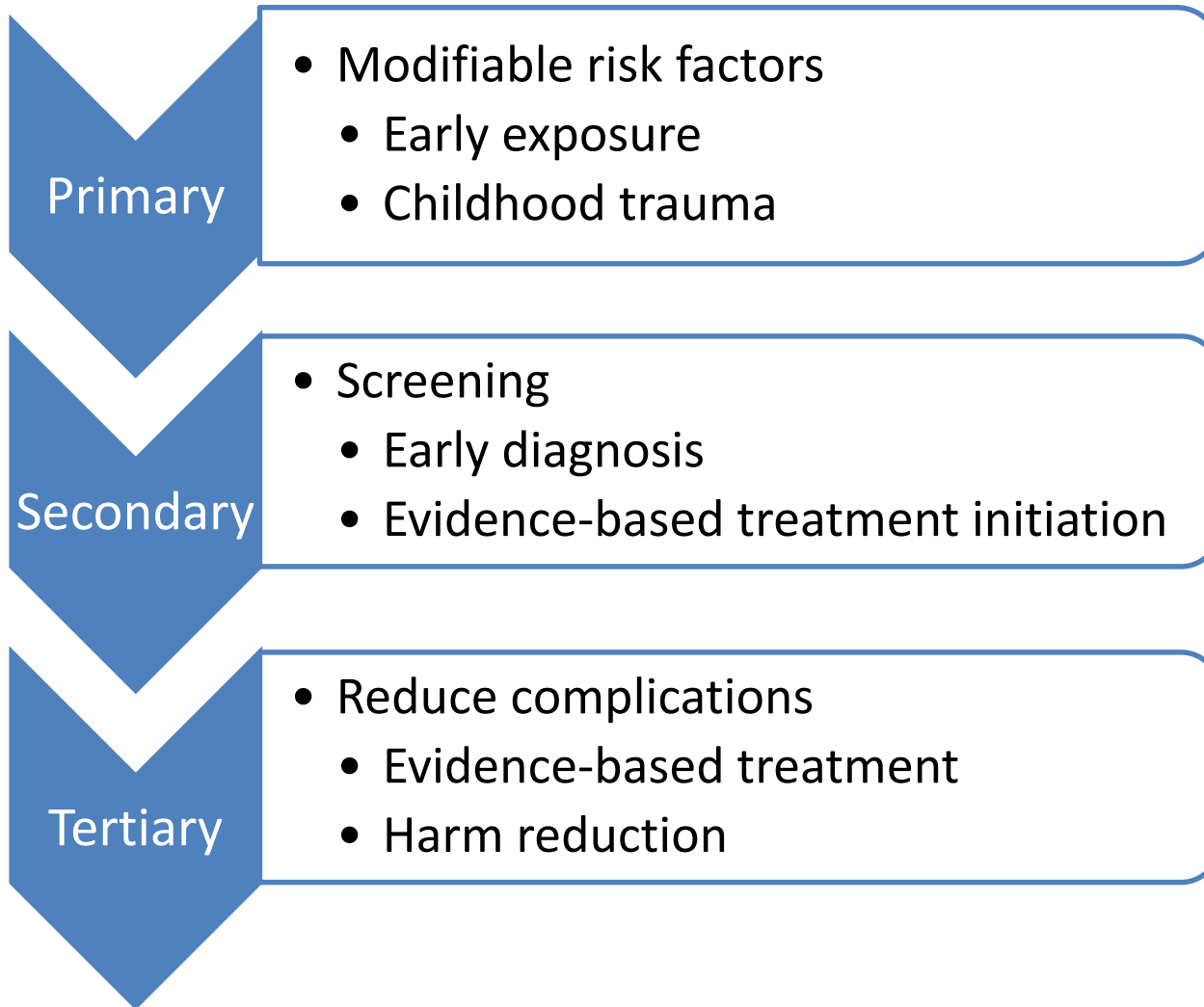
Goals

- minimize periods of active illness
- prevent acute and chronic complications

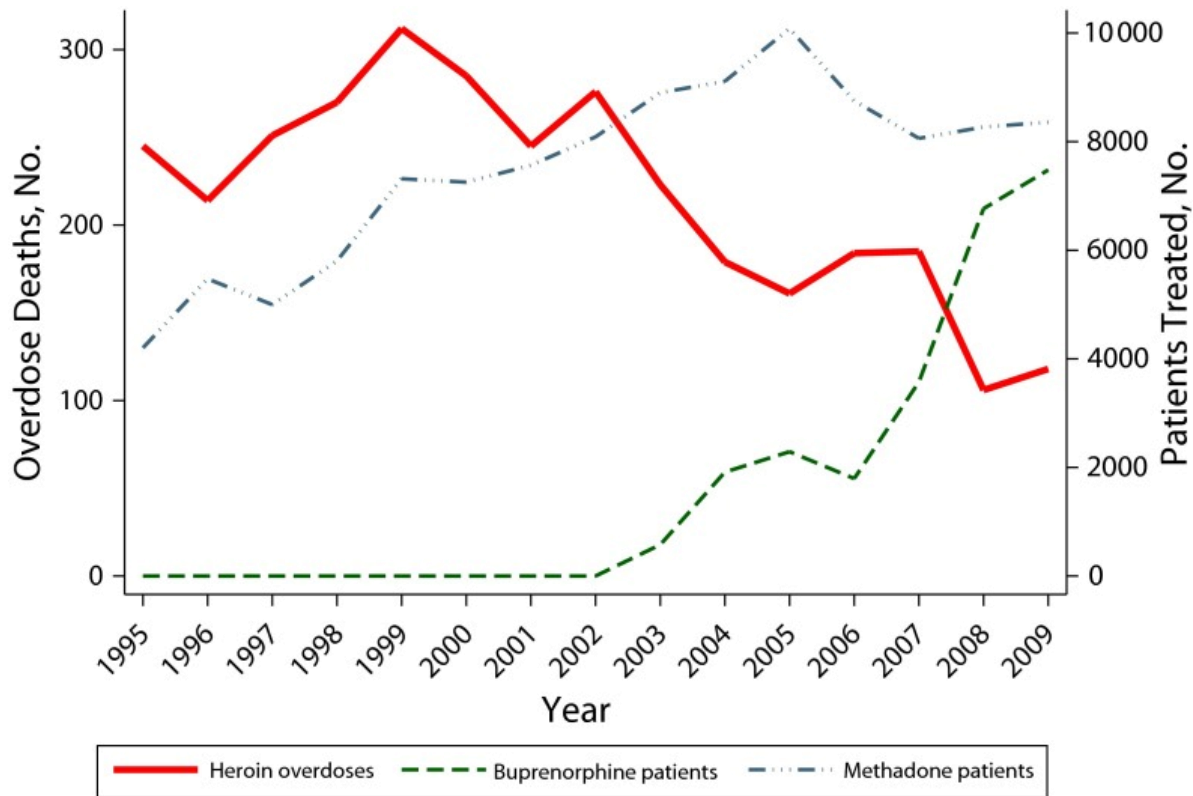
Treatment: individualized plans and goals

- Medication
- Lifestyle changes
- Regular monitoring for complications
- Behavioral support

Tertiary prevention

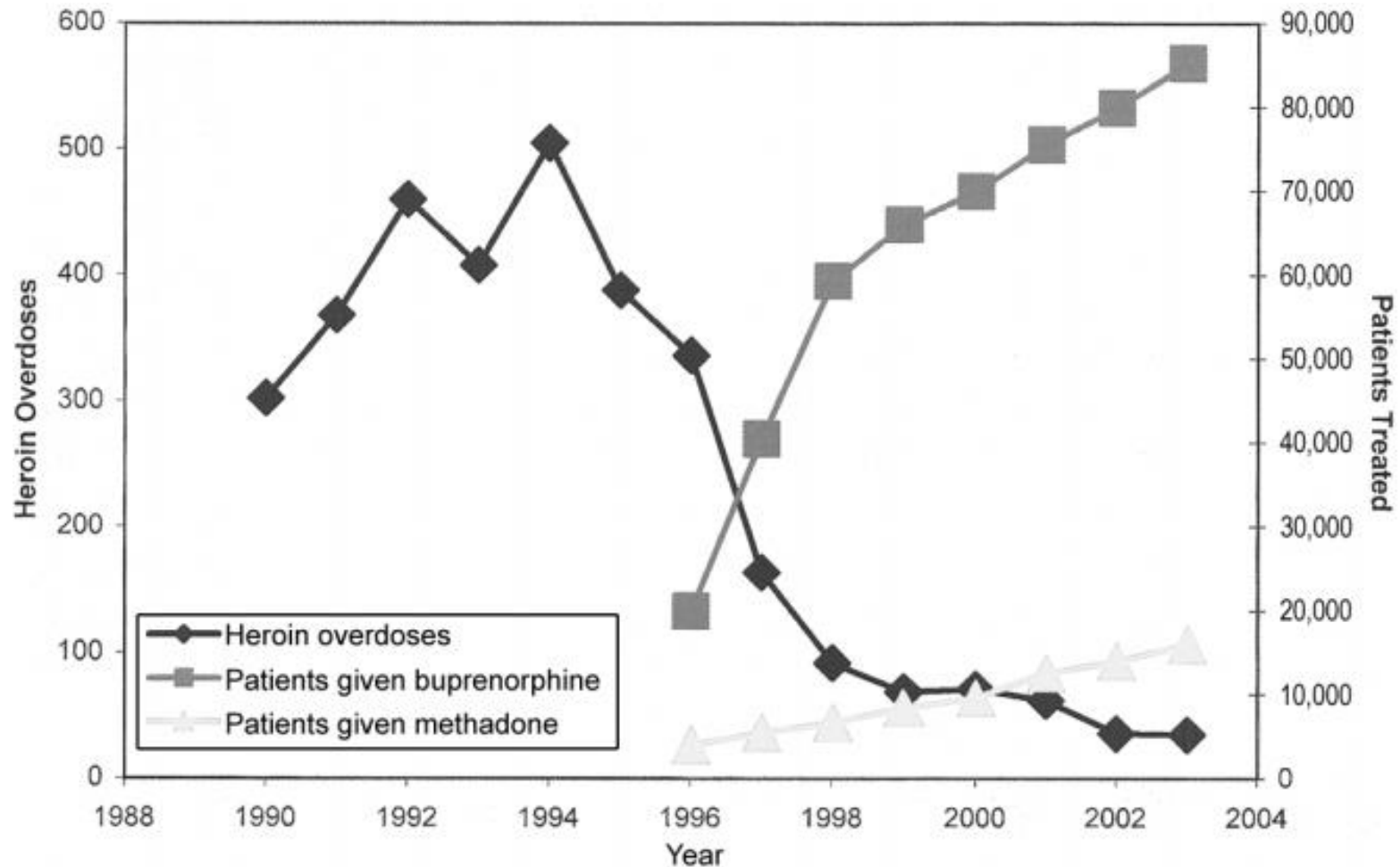


Opioid agonist medication saves lives



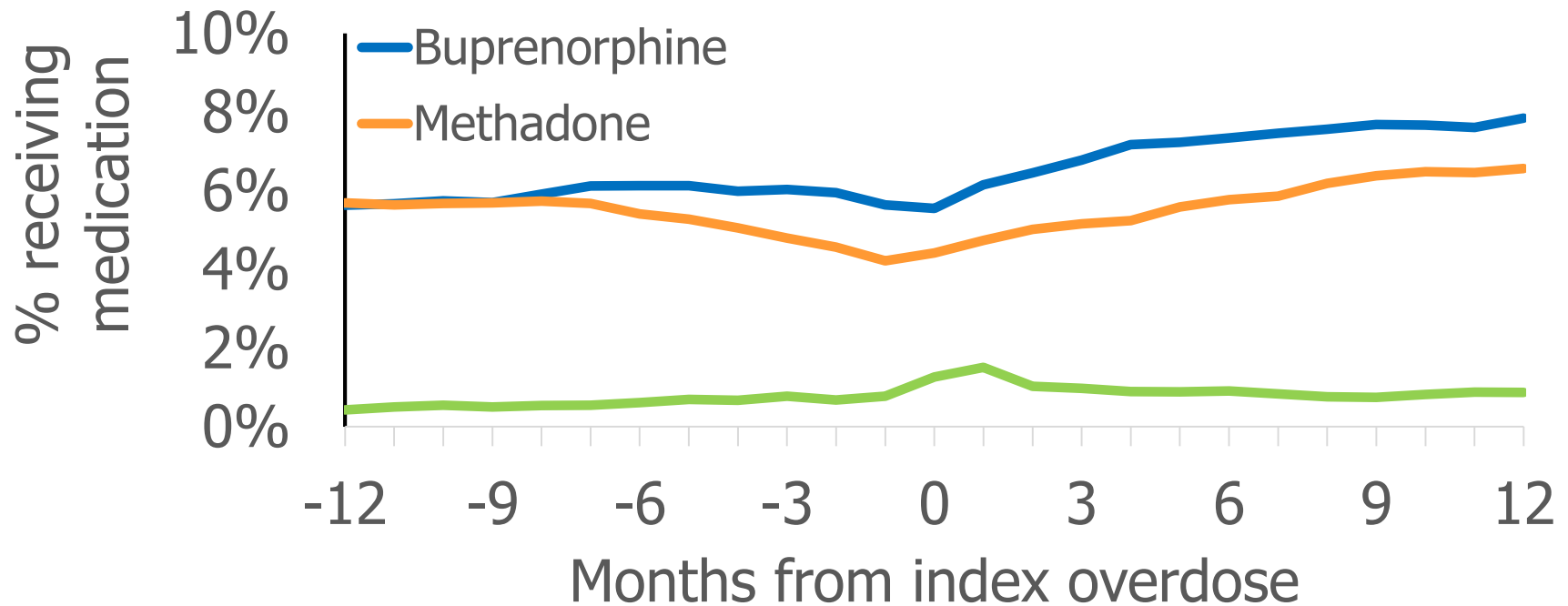
In Baltimore,
1995 - 2009,
increased availability of
methadone and
buprenorphine
was associated with
~50% decrease in
fatal overdoses

Opioid agonist medications reduce overdose



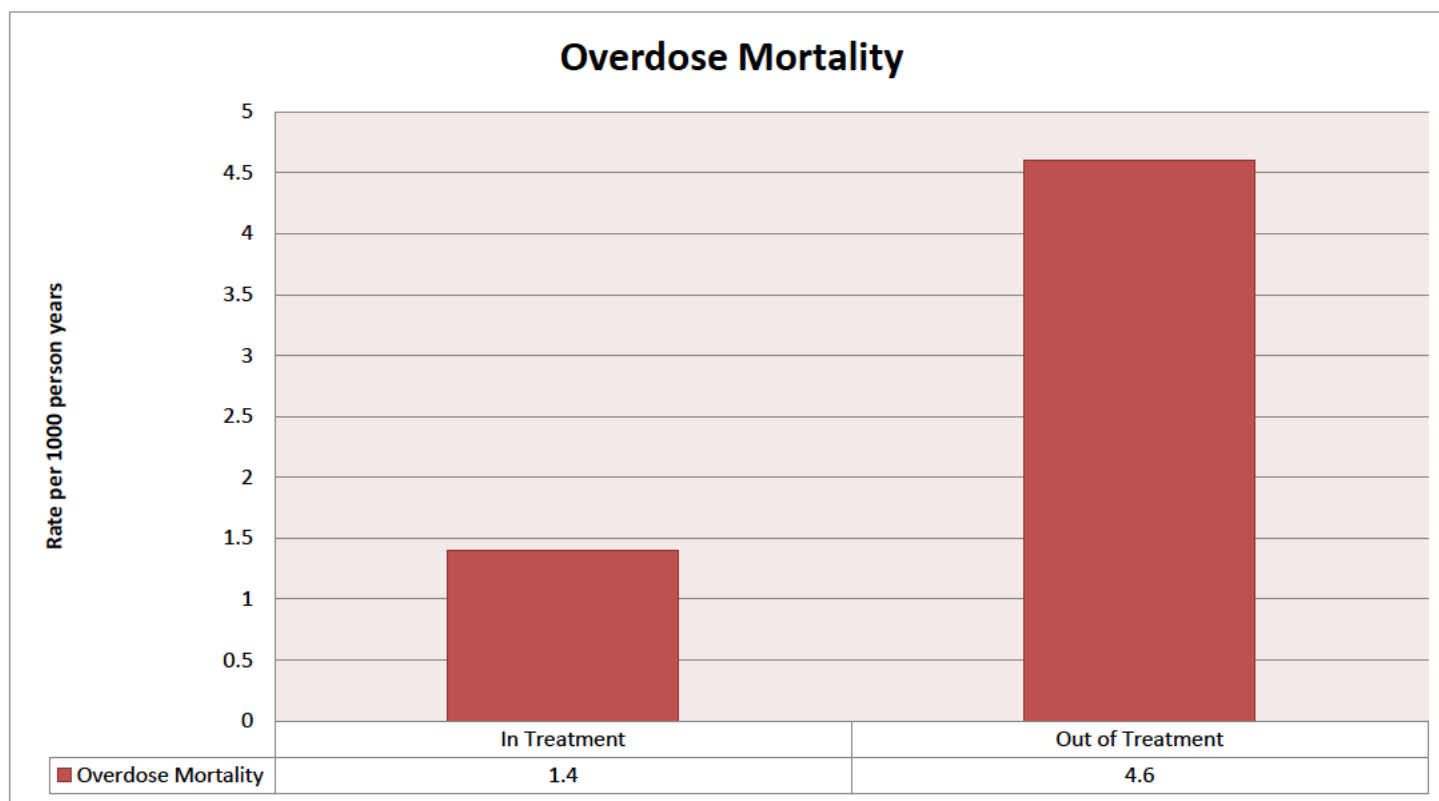
Post-overdose: few receive medication for OUD

Cohort of 17,755 overdose survivors in MA, 2012-2014

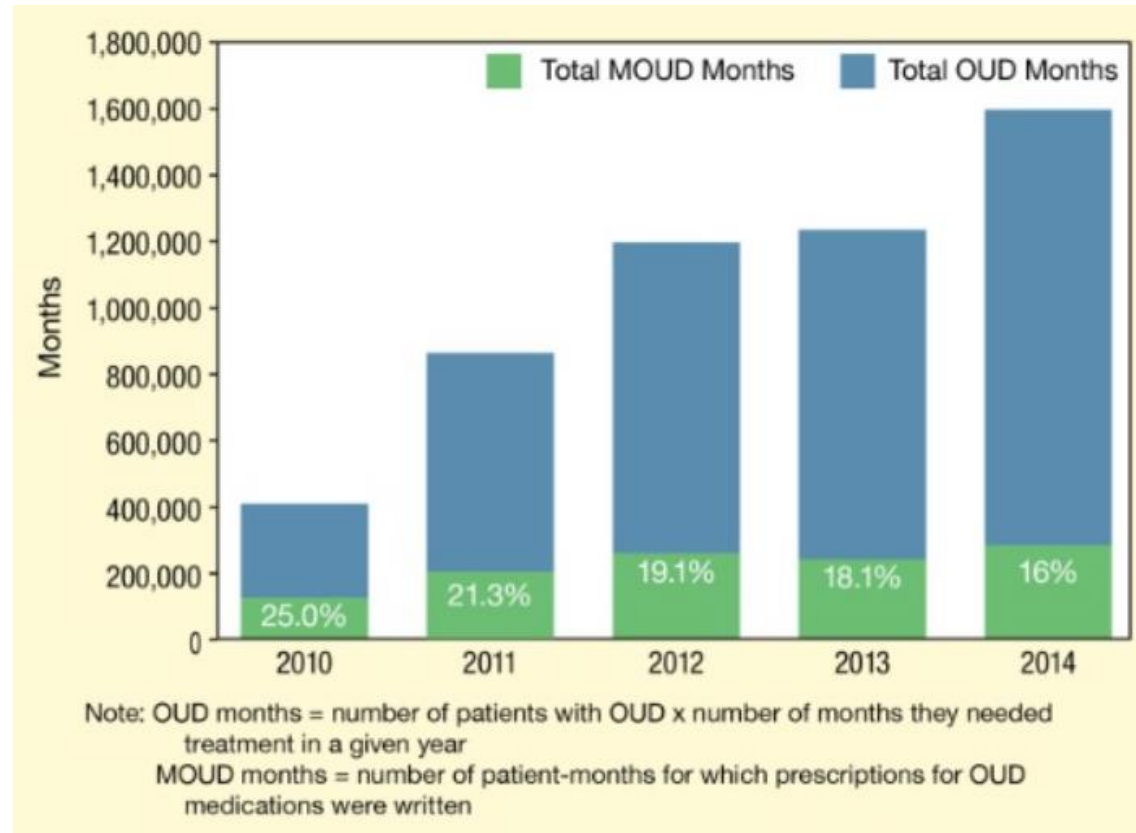


Larochelle MR, Bernson D, Land T, Stopka TJ, Wang N, Xuan Z, Bagley SM, Liebschutz JM, Walley AY. Medication for Opioid Use Disorder After Nonfatal Opioid Overdose and Association With Mortality: A Cohort Study. *Annals of Internal Medicine*. 2018 Aug 7;169(3):137-145.

Deaths increase when medication stops

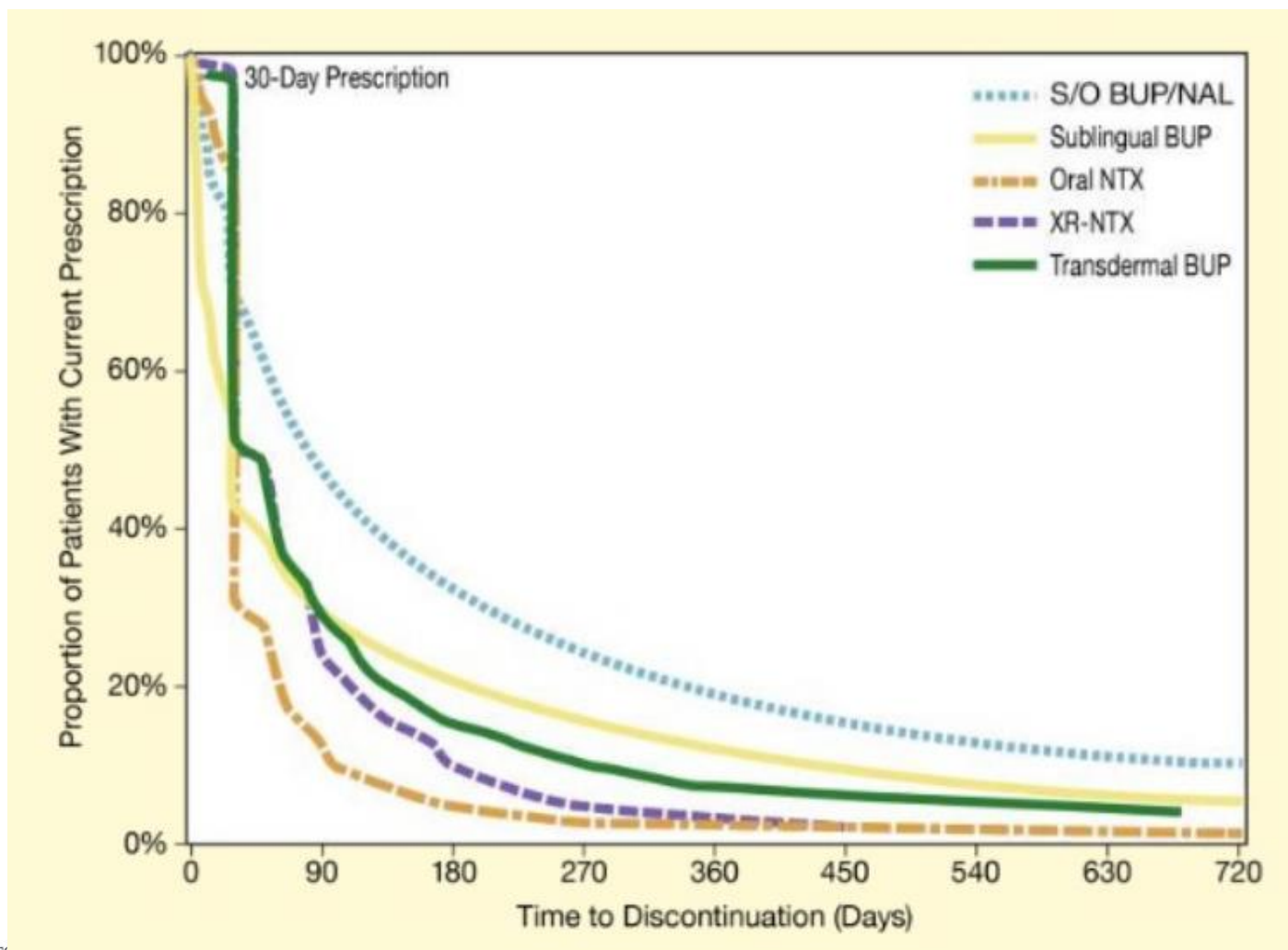


Treatment has not kept pace with increase in opioid use disorder diagnoses

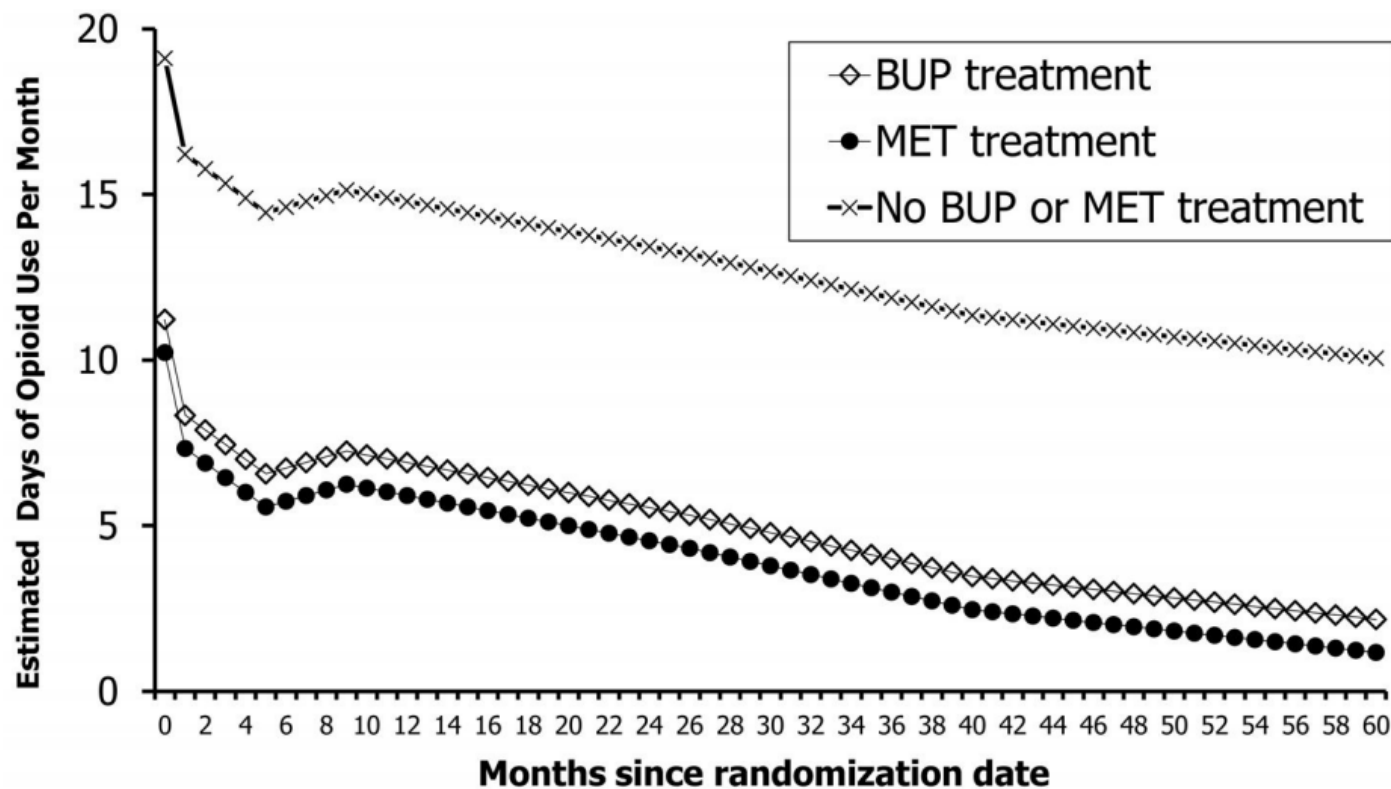


Morgan JR, Schackman BR, Leff JA, Linas BP, Walley AY. Injectable naltrexone, oral naltrexone, and buprenorphine utilization and discontinuation among individuals treated for opioid use disorder in a United States commercially insured population. JSAT. 2017 Jul 3.

High rates of treatment discontinuation



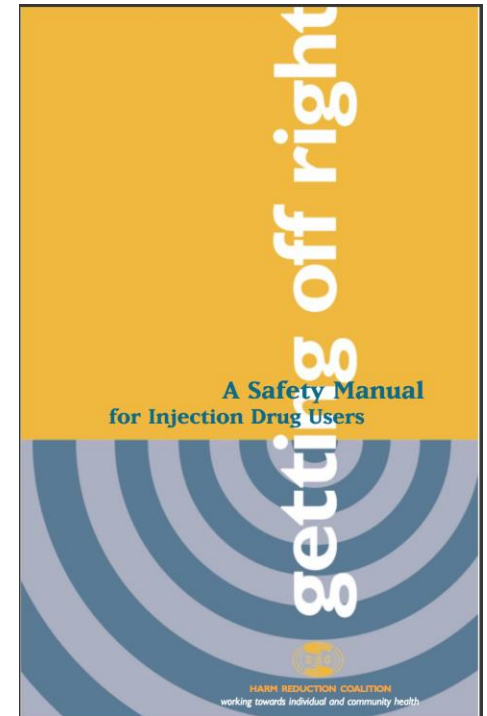
Ongoing use during early treatment expected



Hser et al. Addiction. 2016

Keeping people safer through active illness

Meeting people where they are...but not leaving them there



<https://harmreduction.org/drugs-and-drug-users/drug-tools/getting-off-right/>

Providing evidence-based treatment to meet patient needs

- **Apply chronic disease model**
 - Most patients can be managed in primary care
 - Team-based care to address all needs
 - Specialists for most complex
- **Remove gaps in treatment**
 - Expand prescriber base
 - Reduce barriers to initiate and continue treatment
- **How long should treatment last?**
 - Long enough

Patient centered treatment

- ✓ Addiction is preventable and treatable disease where the earlier we intervene, the healthier people remain
- ✓ Care should be accessible, timely, patient centered, stigma free, easier to access than street drugs

Thank you