MEDICATION ASSISTED TREATMENT:
An Essential Tool for Managing our Opioid Epidemic

American College of Osteopathic Internists

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WVU Medicine

no disclosures


DON'T TRADE ONE
ADDICTION FOR ANOTHER!
Get The Help You Deserve

"The stigma surrounding the use of pharmacotherapy, in particular opioid agonist therapy, is arguably more potent and harmful than general stigma about the disease right now. Stigmatized beliefs that medication is simply a 'replacement addiction' are false and quite literally killing people."

- Dr. Richard Saitz

  Chair and Professor of Community Health Sciences
  Boston University School of Public Health

OVERVIEW

- Epidemic
- Disease
- MAT
- Answer questions

OVERDOSE EPIDEMIC

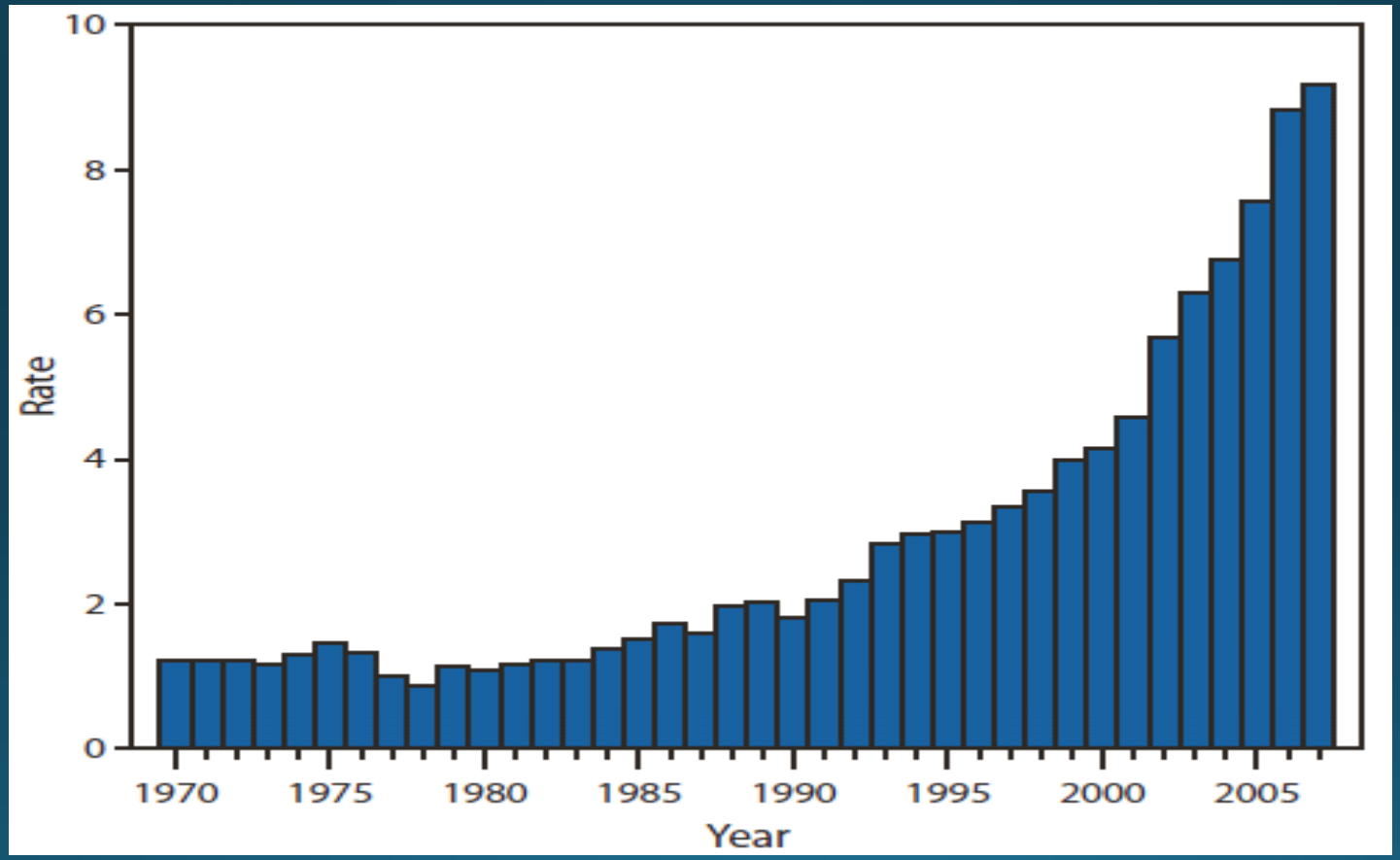
- Leading cause of injury death in US

- **70, 237** deaths in 2017
  - 47,600 (68%) opioids
  - 345% 2001-2016

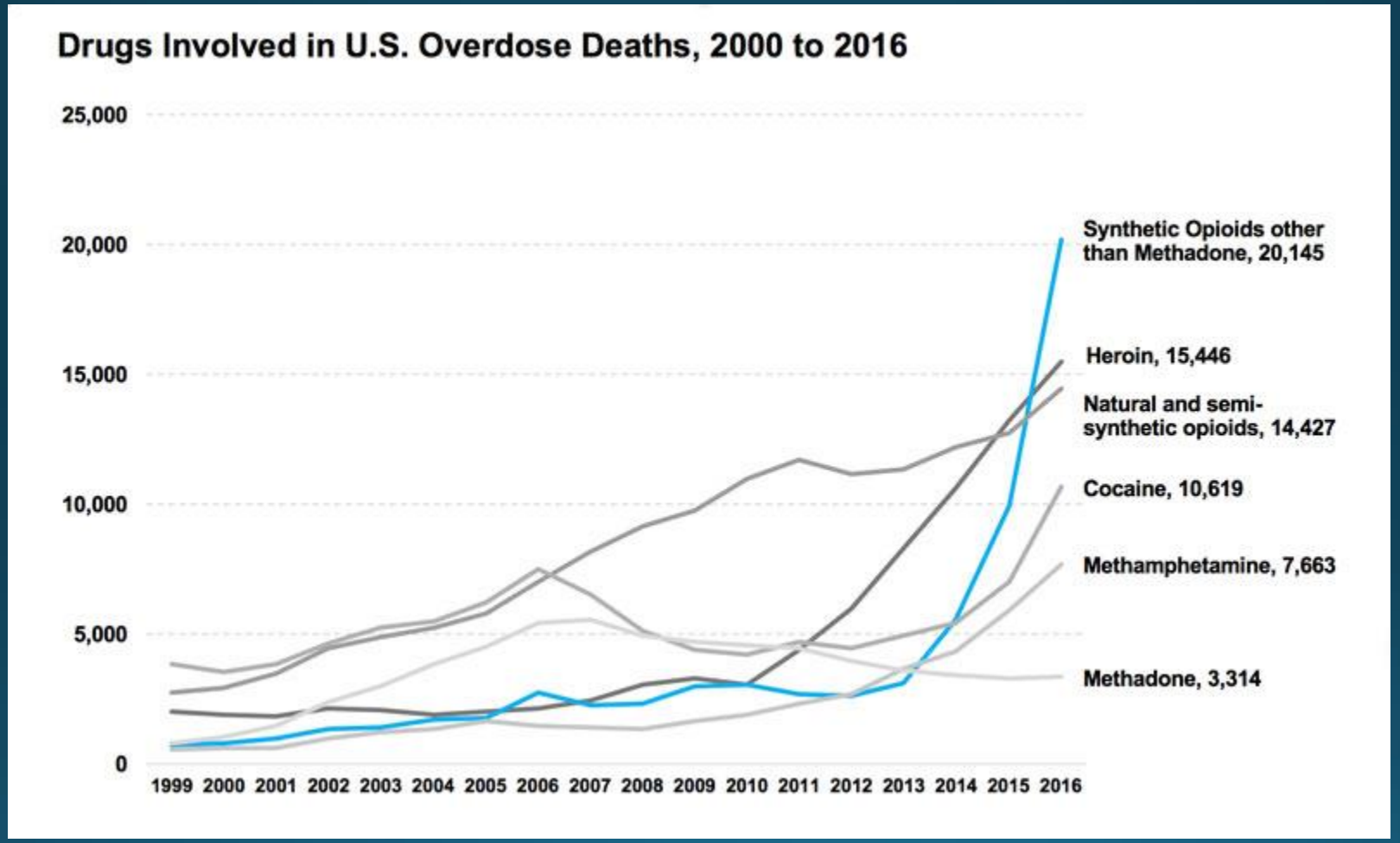
- **702, 568** deaths 1999 – 2017
  - 56.8% opioids

https://www.cdc.gov/mmwr/volumes/67/wr/mm675152e1.htm

UNINTENTIONAL OVERDOSE DEATHS



Centers for Disease Control and Prevention. CDC grand rounds: prescription drug overdoses—a US epidemic. *MMWR Morb Mortal Wkly Rep*. 2012;61(1):10-13



https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates

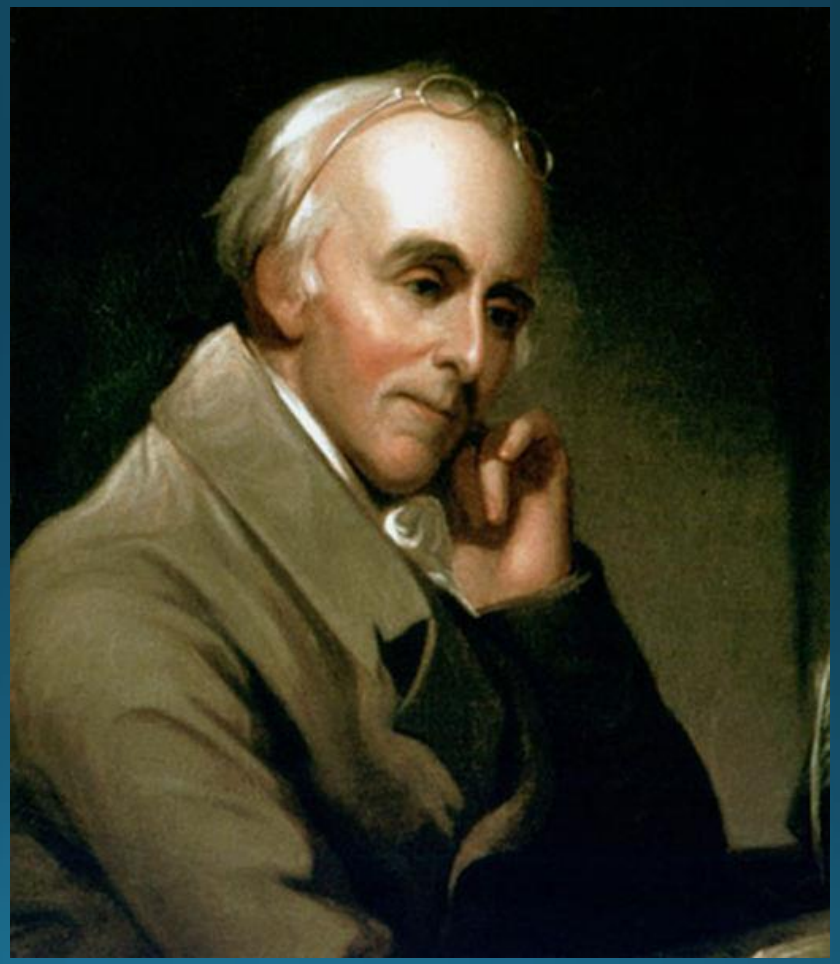
2016-2025: Projected Opioid Death Toll

510,000

Pitt AL, et al. *Am J Public Health*. 2018;108(10):1394-1400.

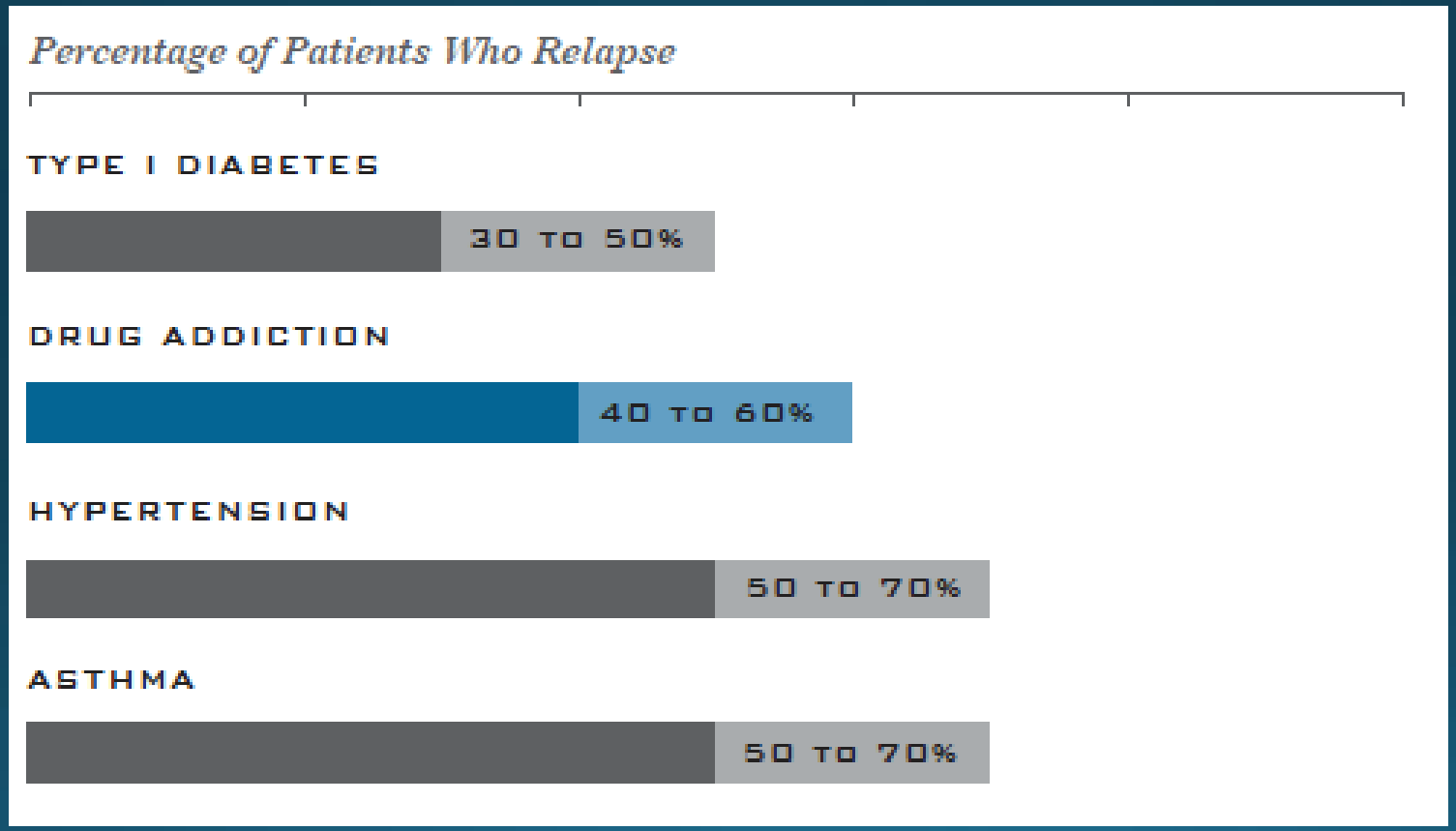
DISEASE

"My observations authorize me to say, that persons who have been addicted to them, should abstain from them suddenly and entirely. 'Taste not, handle not, touch not' should be inscribed upon every vessel that contains spirits in the house of a man, who wishes to be cured of habits of intemperance, …habitual drunkenness should be regarded not as a bad habit but as a disease."



Dr. Benjamin Rush

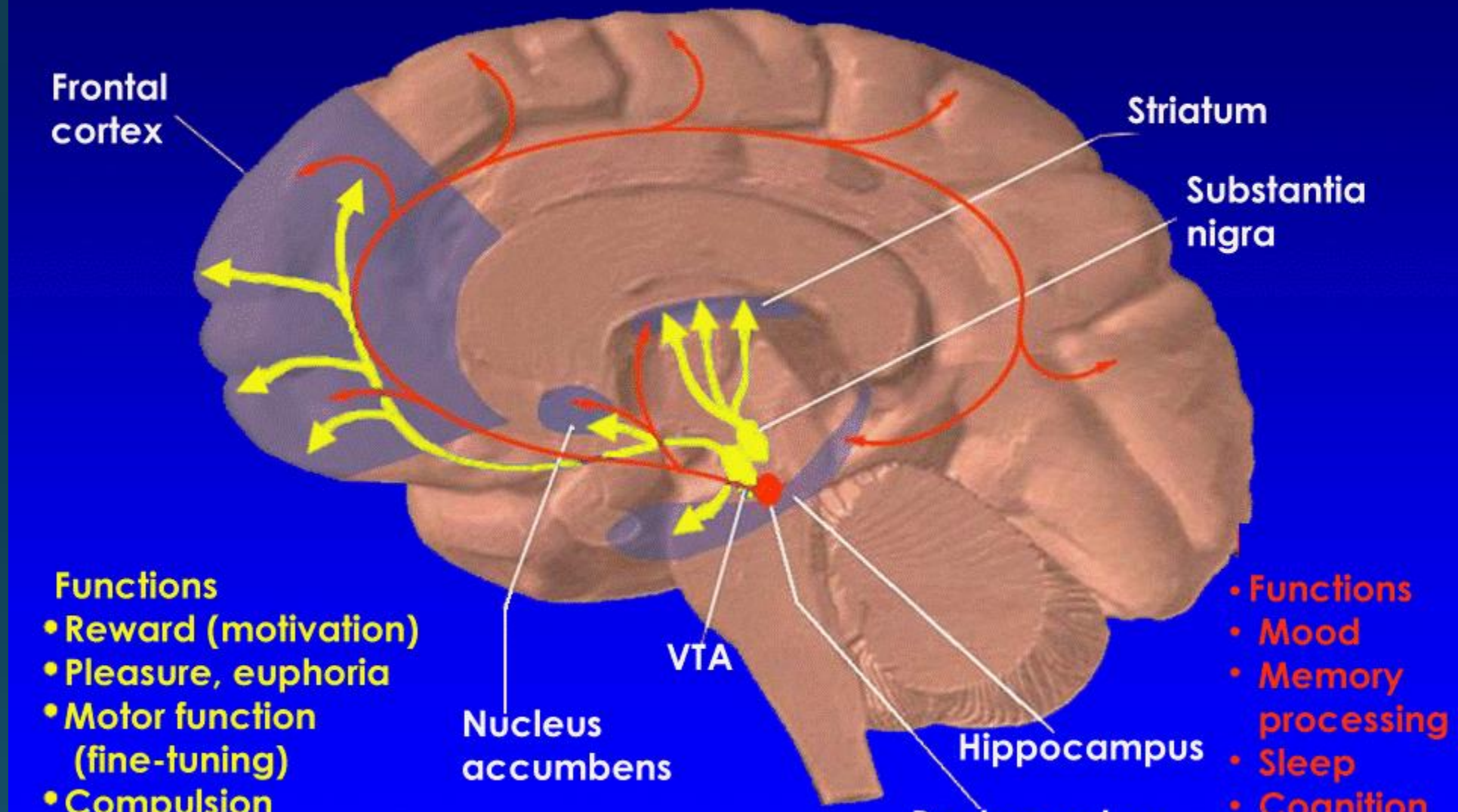
CHRONIC DISEASE



NIDA

Dopamine Pathways

Serotonin Pathways



Functions

- Reward (motivation)
- Pleasure, euphoria
- Motor function (fine-tuning)
- Compulsion
- Perseveration

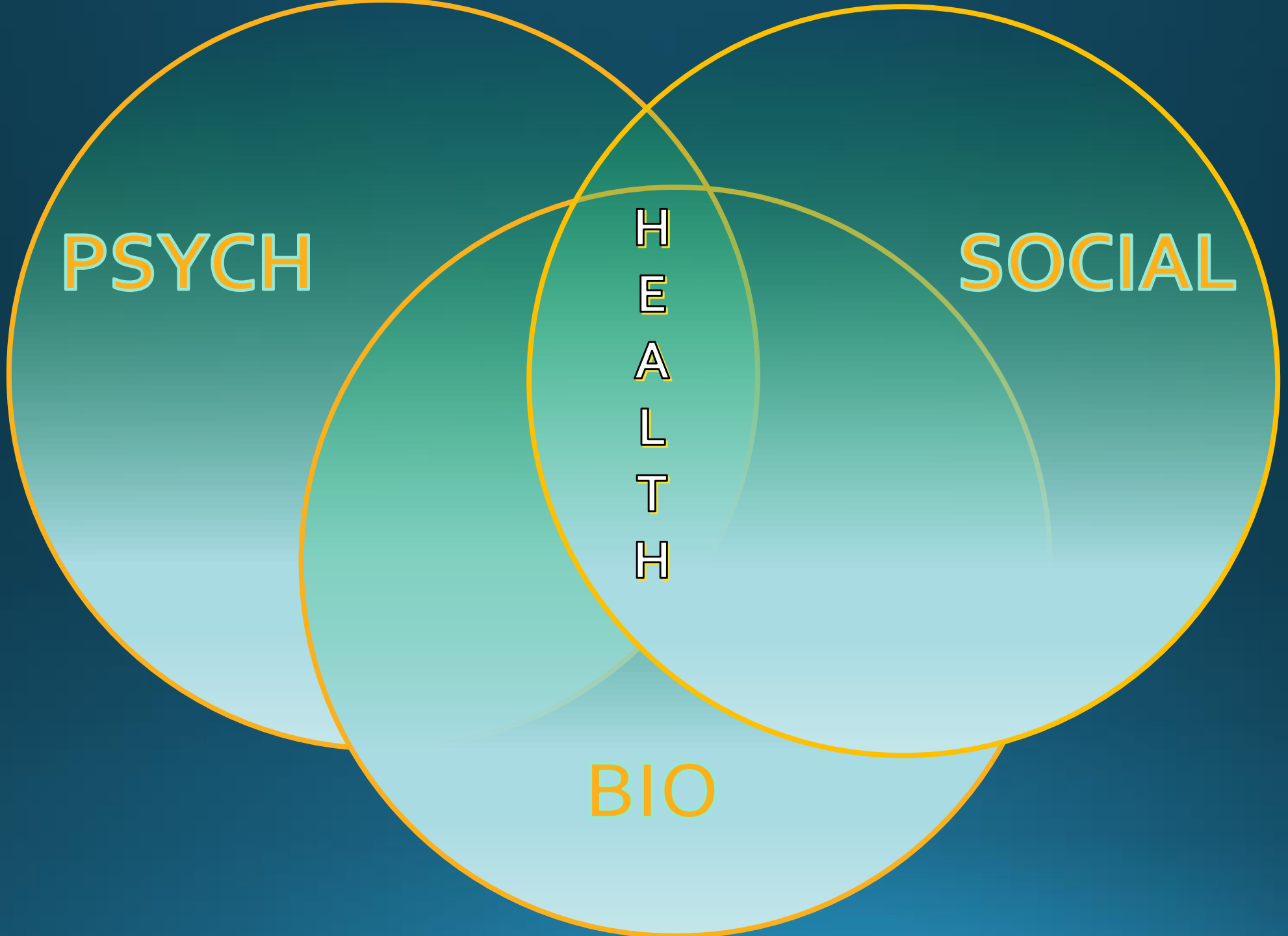
- Functions
- Mood
- Memory processing
- Sleep
- Cognition

NIDA

DISEASE

- **Addiction** is a primary, chronic disease of brain reward, motivation, memory and related circuitry. It is characterized by one or more of the following (ABCDE):
  - Inability to consistently **abstain**
  - Impairment in **behavioral** control
  - **Craving**
  - **Diminished** recognition of problems
  - Dysfunctional **emotional** response
- Cycle of relapse and remission
- This disease is often progressive and fatal
- Manage vs. Cure
- Two main goals:
  - Keep alive
  - Increase quality of life

ASAM Public Policy Statement


PSYCH
SOCIAL
HEALTH
BIO

TREATMENT

BIO

"Abstinence-Based"

Vs.

Medication Assisted Treatment

PSYCHO

Cognitive Behavioral Therapy

Motivational Enhancement Therapy

Contingency Management

SOCIO

12 Step Groups

Family Therapy

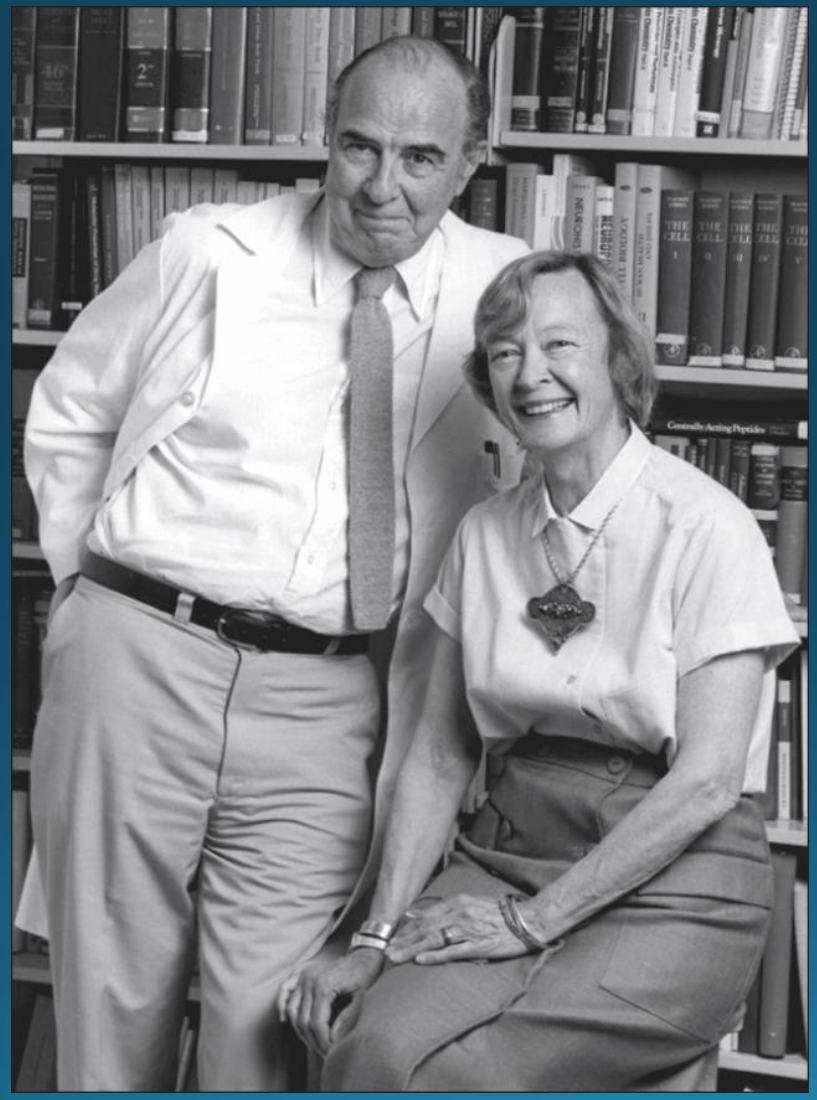
Spiritual Community

Medication Assisted Treatment (MAT) for Opioid Addiction

RECEPTORS

- Methadone - full agonist
- Buprenorphine - partial agonist
- Naltrexone - antagonist

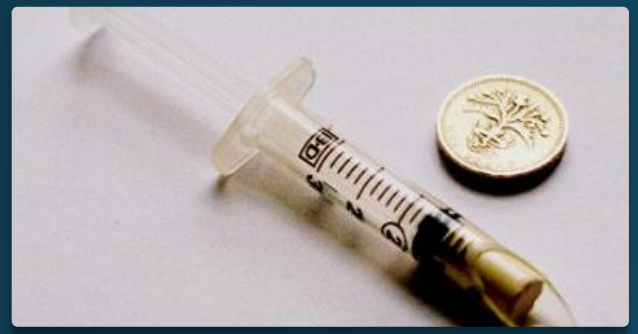
METHADONE

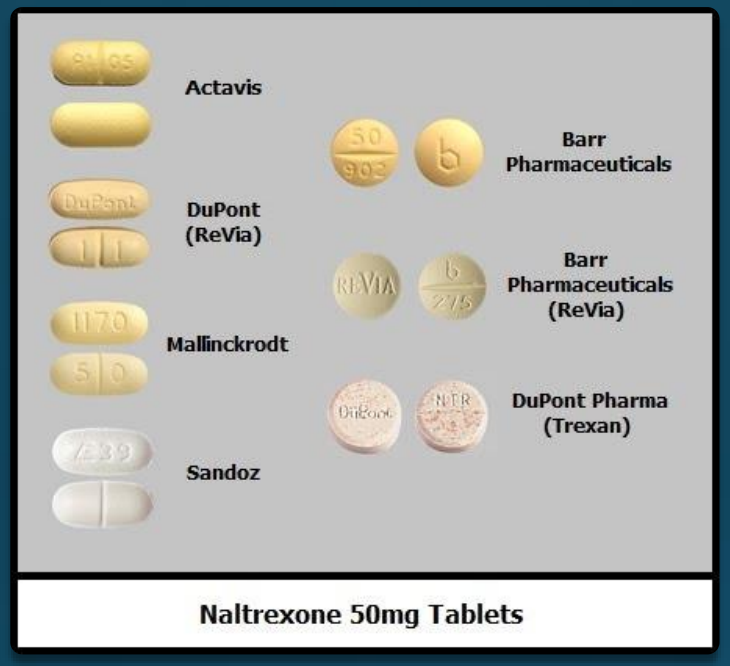


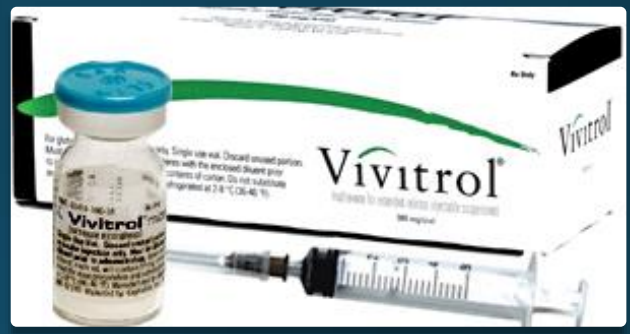
METHADONE

- Schedule II
- Use is restricted to non-residential narcotic treatment facilities: Opioid Treatment Programs (OTP) = Methadone Clinics
- Pain is the only legal medical indication in the office setting
- Tricky to start and stop
- Stigma

NALTREXONE







Implants

(Not FDA approved)

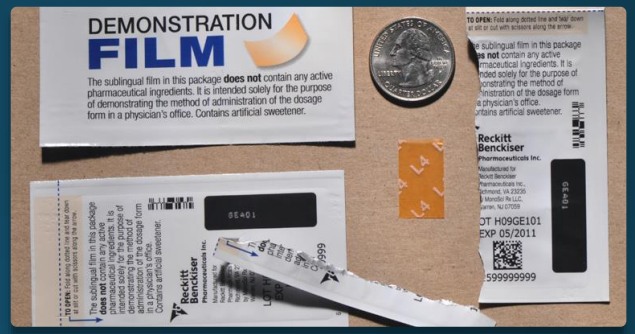
Tablets

Injection

BUPRENORPHINE

- DATA 2000-can prescribe a schedule III-V medication
- Detoxification and maintenance
- In 2002- FDA approves Bup for office management of opioid addiction
- Docs need 8hr course & apply to SAMHSA for a waiver from the 1970's Controlled Substance Act
- 2005 – lifted the 30 patient cap to 100 patients
- 2016 – lifted the 100 patient cap to 275 patients
- 2018 – NPs and PAs allowed to treat 30 patients

BUPRENORPHINE



BUP + NALOXONE

Suboxone

Zubsolv

Cassipa 16mg

BUP

"Subutex"

Probuphine (6m implant)

Sublocade (1m injection)

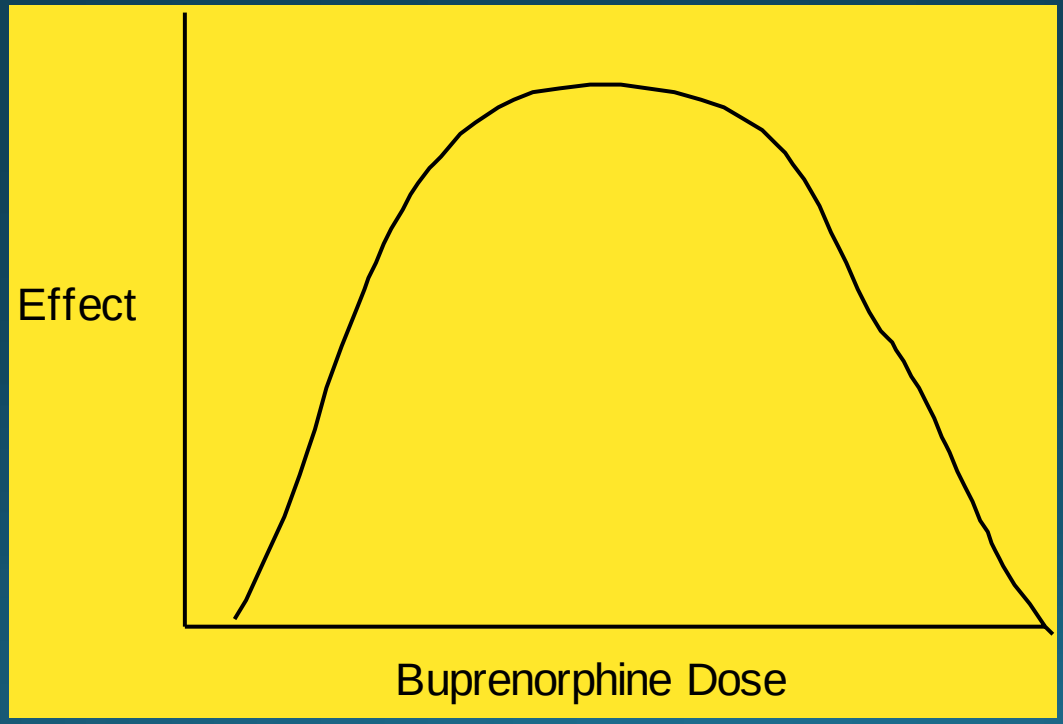
FILM

Suboxone

Bunavail

Buprenorphine Pharmacology

Bell-Shaped Dose Response Curve



Drug and Alcohol Dependence, 2003;70:S61

Buprenorphine/Naloxone

=

=

MAT

Methadone (Full Agonist)

Pros:

Long lasting

Decades of evidence

Helps with pain

Cons:

Diverted

Inconvenient

Lethal in overdose

Withdrawal

Stigma

Buprenorphine (Partial Agonist)

Pros:

Doctor's office

Less risk of overdose

Less risk of IV use

Helps with pain

Cons:

Diverted

Withdrawal

Naltrexone (Antagonist)

Pros

Not diverted

No risk of overdose

Cons:

Compliance

Pain

Medication Assisted Treatment

- 2.4 million Americans *diagnosed* with Opioid Use Disorder.[1]
  ~80% do not receive treatment![2]
- MAT is a safe and effective strategy for decreasing the frequency and quantity of opioid use and reducing the risk of overdose and death.[3,4]
- Although MAT has significant evidence to support it as an effective treatment, it remains highly underutilized.[5]

1.U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. (2016). *Key substance use and mental health indicators in the United States: Results from the 2015 National Survey on Drug Use and Health* (HHS Publication No. SMA 16-4984, NSDUH Series H-51). Rockville, MD

2. U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. (2016). *Prescription drug use and misuse in the United States: Results from the 2015 National Survey on Drug Use and Health.* Rockville, MD.

3. Kresina TF, Lubran RL. Improving public health through access to and utilization of medication assisted treatment. Int J Environ Res Public Health. 2011;8:4102-4117

4. National Institutes on Drug Abuse. Cost effectiveness of drug treatment. Retrieved from: http://www.drugabuse.gov/publications/teaching-packets/understanding-drug-abuse-addiction/sectioniv/6-costeffectiveness-drug-treatment

5. Volkow ND1, Frieden TR, Hyde PS, Cha SS. Medication-assisted therapies--tackling the opioid-overdose epidemic. N Engl J Med. 2014 May 29;370(22):2063-6. doi: 10.1056/NEJMp1402780. Epub 2014 Apr 23.

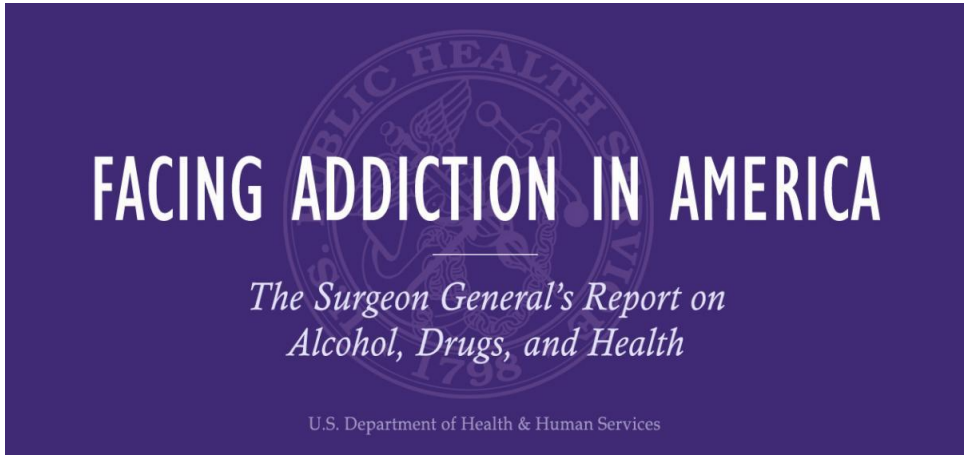
ASAM American Society of Addiction Medicine

AAAP American Academy of Addiction Psychiatry

NIH National Institute on Drug Abuse
Advancing Addiction Science

AMA

Substance Abuse and Mental Health Services Administration
SAMHSA

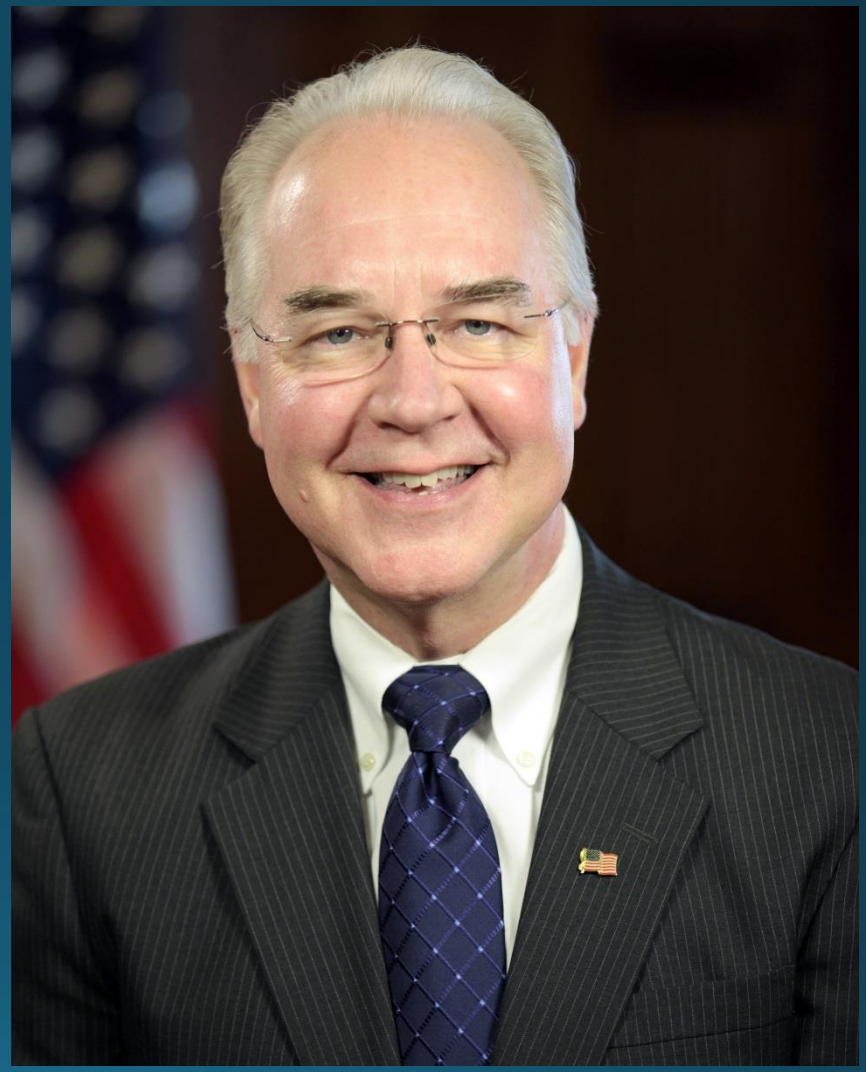


Charleston Gazette-Mail

A Pulitzer Prize-Winning Newspaper

U.S. Health and Human Services Secretary Tom Price

May 9, 2017



"No state has been hit harder by the opioid epidemic than West Virginia. More than 860 residents fatally overdosed on drugs in 2016. That's a record number…If this were any other disease, we'd have all the resources come to bear to figure out what the infection is, how did it get into our county and what are we going to do about it…"

"This is a public health issue. This isn't a criminal justice issue…"

http://www.wvgazettemail.com/news-health/20170509/trump-officials-seek-opioid-solutions-in-wv#sthash.aSj2bgfH.dpuf

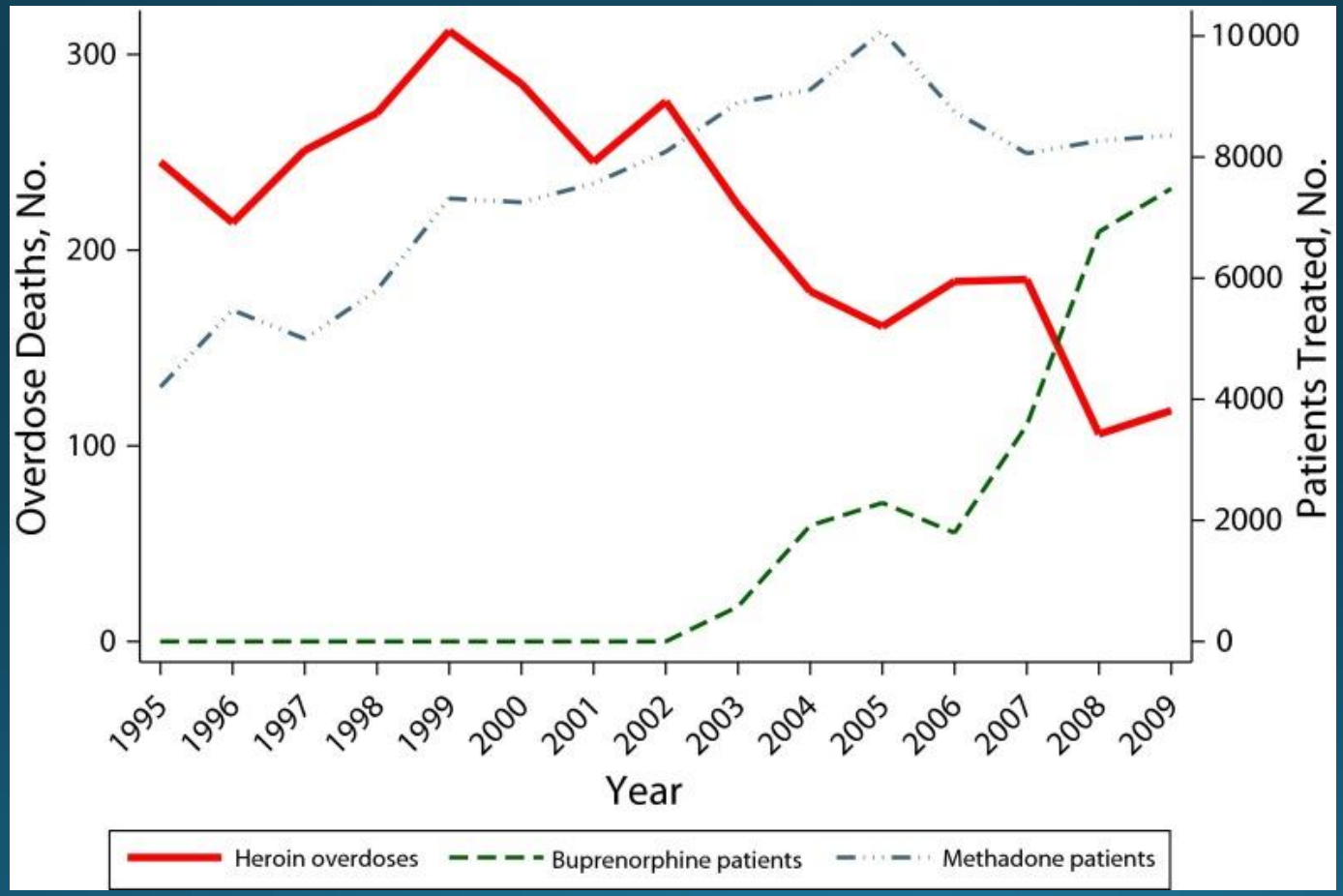
Asked about drug treatment options, Price touted faith-based programs while showing less support for medication-assisted programs in which addicts are weaned off heroin with other opioids like Suboxone and methadone.

"If we're just substituting one opioid for another, we're not moving the dial much…Folks need to be cured so they can be productive members of society and realize their dreams."

http://www.wvgazettemail.com/news-health/20170509/trump-officials-seek-opioid-solutions-in-wv#sthash.aSj2bgfH.dpuf

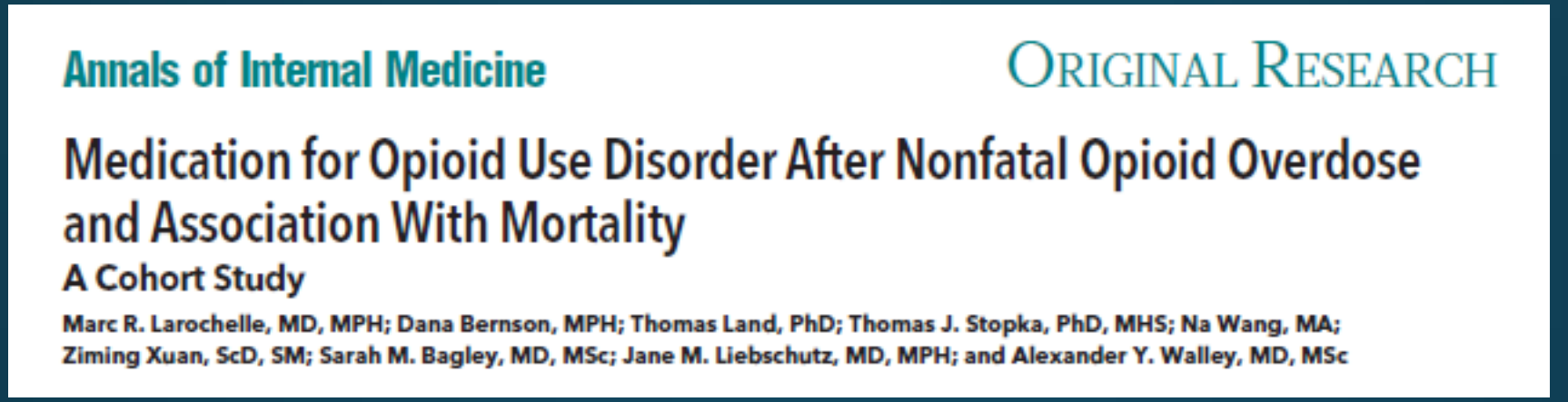
What Are The Benefits of MAT?

DECREASE OVERDOSE



Heroin overdose deaths and opioid agonist treatment: Baltimore, MD, 1995–2009

Schwartz, RP.Am J Public Health. 2013 May; 103(5): 917–922.



Annals of Internal Medicine

ORIGINAL RESEARCH

Medication for Opioid Use Disorder After Nonfatal Opioid Overdose and Association With Mortality

A Cohort Study

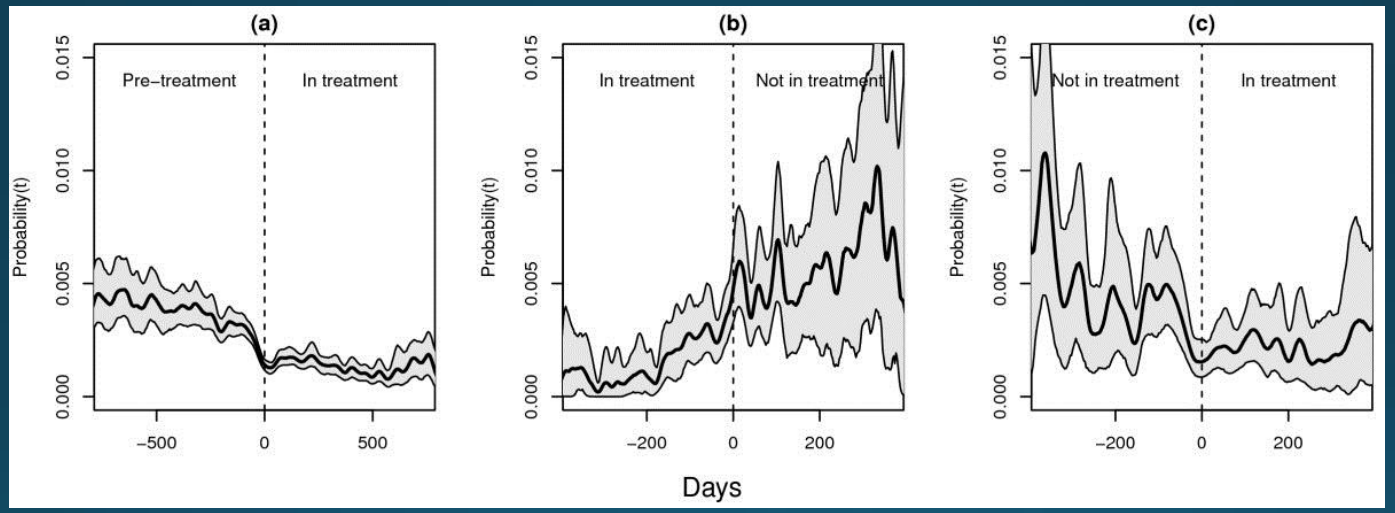
Marc R. Larochelle, MD, MPH; Dana Bernson, MPH; Thomas Land, PhD; Thomas J. Stopka, PhD, MHS; Na Wang, MA; Ziming Xuan, ScD, SM; Sarah M. Bagley, MD, MSc; Jane M. Liebschutz, MD, MPH; and Alexander Y. Walley, MD, MSc

Ann Intern Med. August 2018;169:137–145.

- 17, 568 overdose survivors over 12 months
- Methadone or Buprenorphine associated with reduced mortality
- Only 30% received MAT

DECREASE CRIMINALITY

National cohort study of all patients (n = 3221) in OMT in Norway 1997-2003

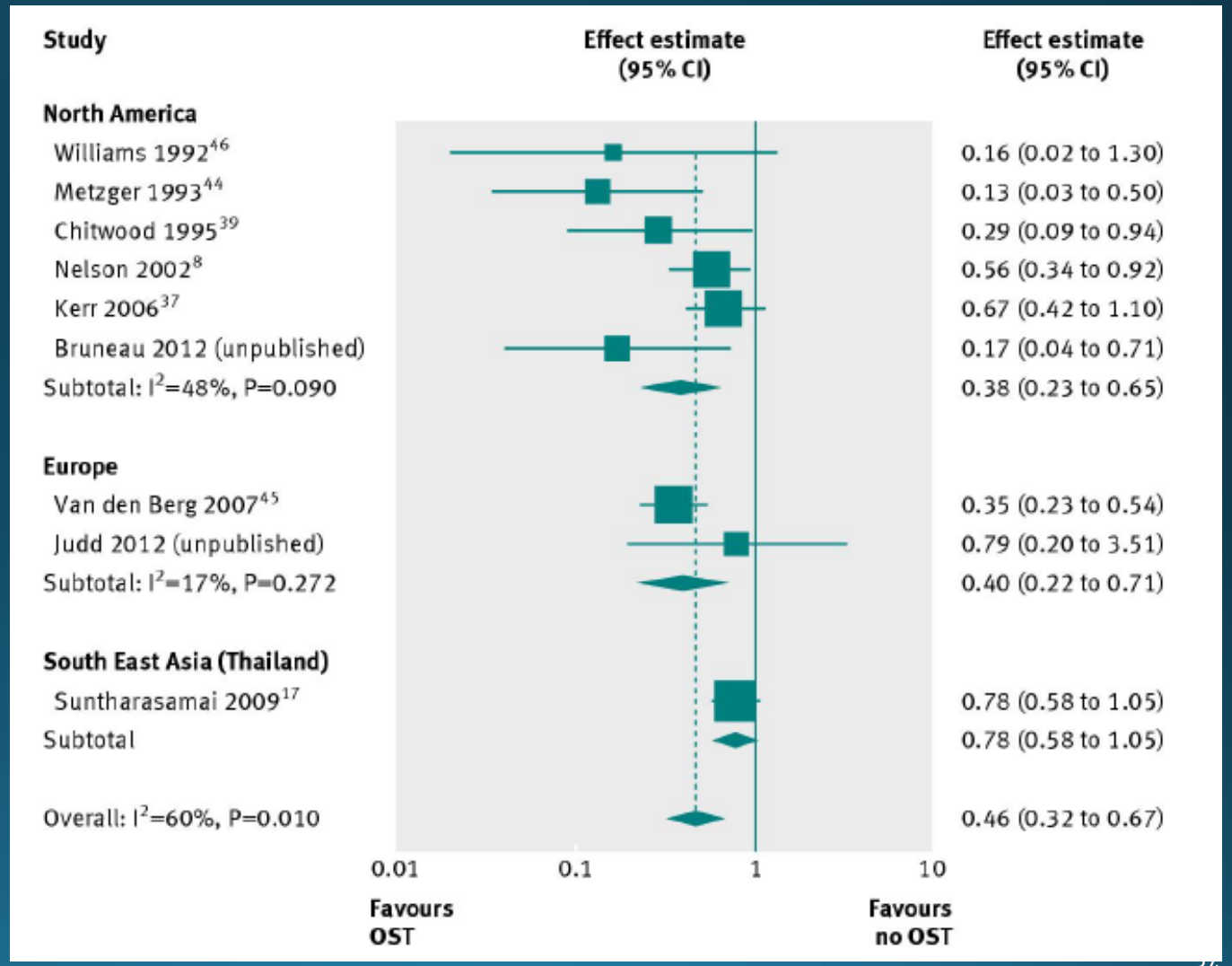


Day-to-day rates of criminal convictions. Day-to-day rates of criminal convictions (95% CI) for all patients **(a)** entering OMT for the first time, **(b)** leaving OMT and **(c)** re-entering OMT. **a:** X-axis; days before and days after first treatment entry (n=3221). Y-axis; the day-to-day rate of criminal convictions. **b:** X-axis; days before and days after treatment drop out (n=1175). Y-axis; the day-to-day rate of criminal convictions. **c:** X-axis; days before and days after treatment re-entry (n=515). Y-axis; the day-to-day rate of criminal convictions.

Bukten A. BMC Psychiatry2013. **13**:262

DECREASE HIV INFECTIONS

- Meta-analysis
- 9 studies
- Overall:
  - 54% reduction
- North America:
  - 62% reduction



Gowing et al. *BMJ* 2012

INCREASE TREATMENT RETENTION

Completion of 14 week trial:

11% taper

vs

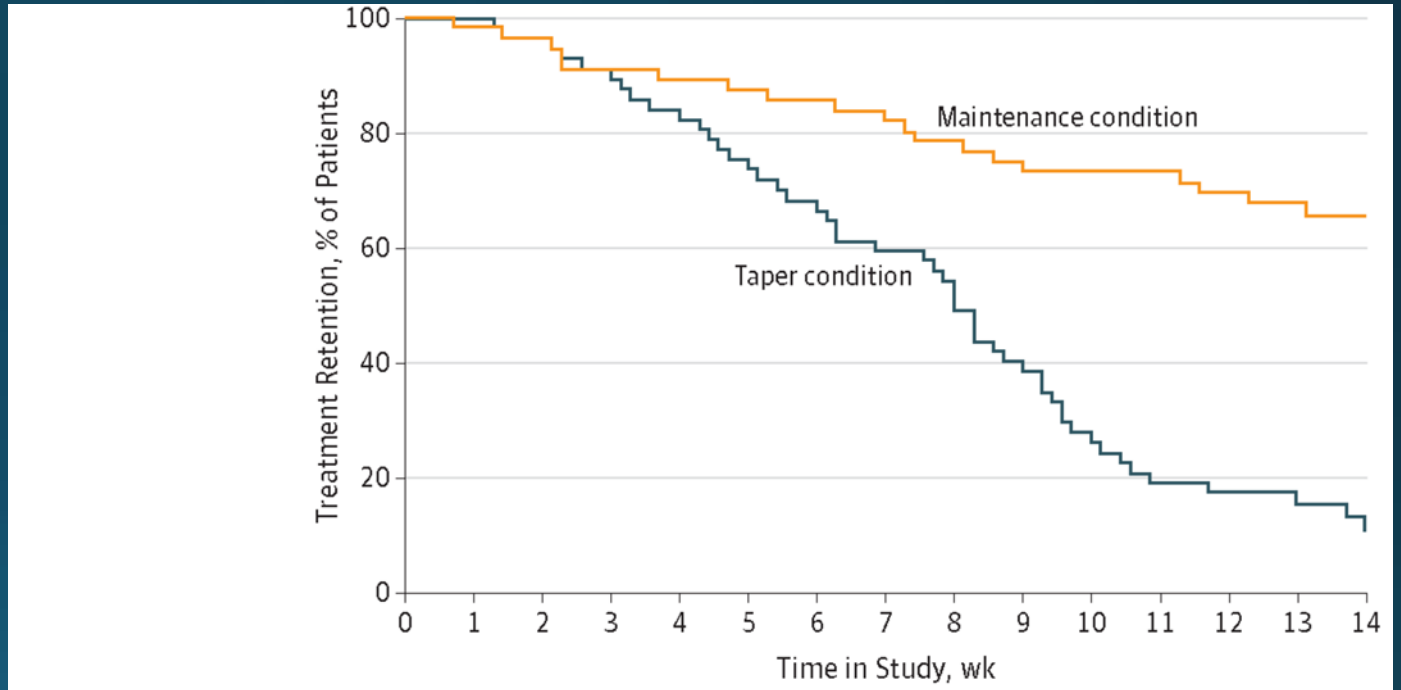
66% maintenance

Mean percentage of urine negative for opioids:

35% taper

vs

53% maintenance



Mean buprenorphine dosage, mg/d															
Maintenance condition	14.9	15.1	15.2	15.3	15.3	16.0	15.9	16.2	16.2	16.6	16.8	16.2	16.1	15.8	14.6
Taper condition	15.6	15.6	15.4	15.3	14.2	9.7	5.7	3.1	0.6	0.2	0	0	0	0	0

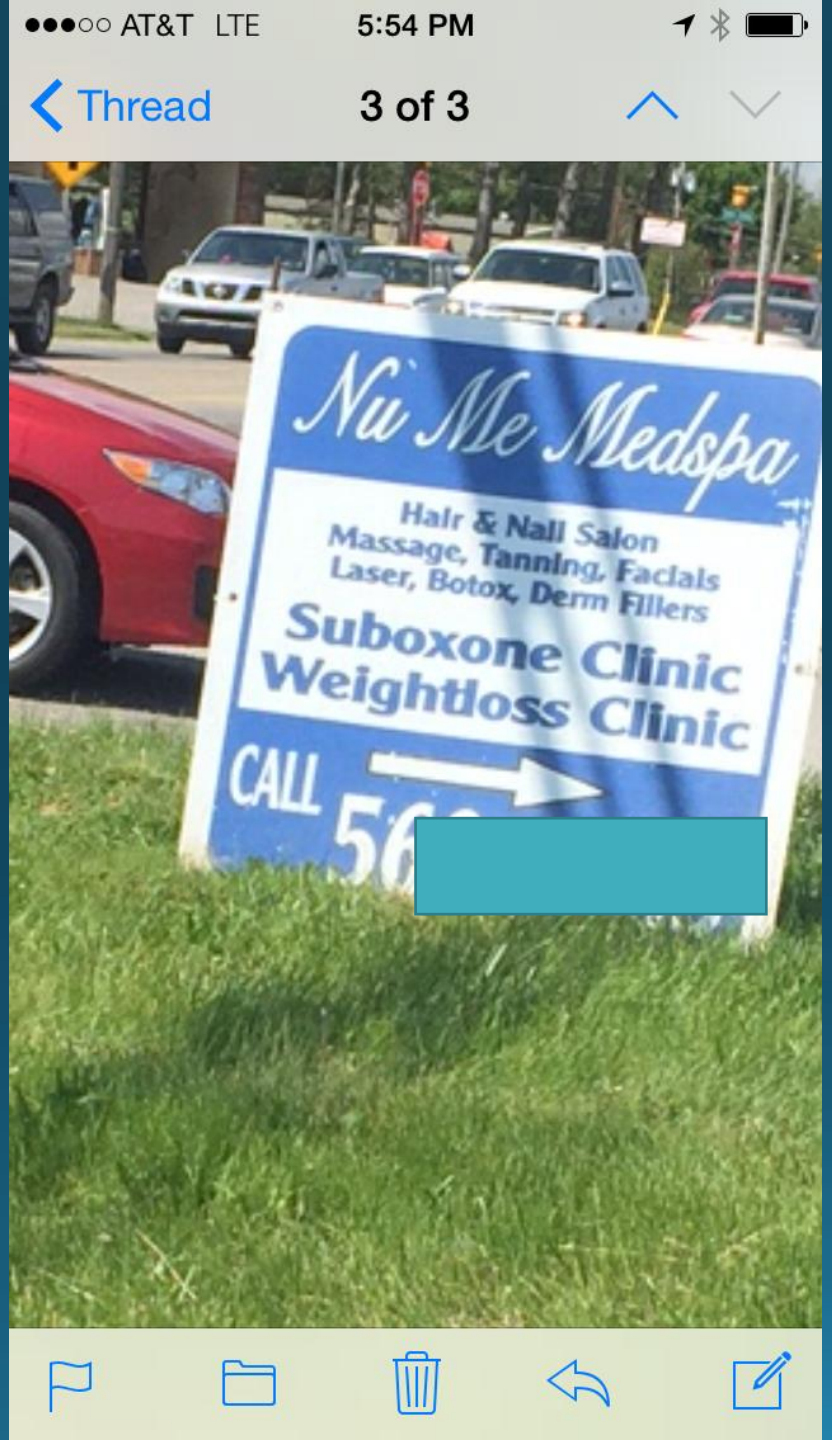
Fiellin DA et al. JAMA Intern Med 2014

Decrease Health Care Costs

- Annual societal cost associated OUD[1]:
  - $55 Billion
    - Lost work productivity (46%)
    - Health Care (45%)
    - Criminal Justice (9%)
    - Hidden cost of comorbid conditions
      ~8X greater health care than non-abuser
- B-MAT more cost effective than:
  - No treatment[2]
  - Detox[3]
- Immediate access to OAT = $78,257 in savings[5]
  lifetime savings = $3.8 billion[5]
- B-MAT Non-Adherent Cost[4]:
  - $27k greater medical charges
  - $22k greater overall healthcare charges

1.H.G. Birnbaum, A.G. White, M. Schiller, T. Waldman, J.M. Cleveland, C.L. Roland
Societal costs of prescription opioid abuse, dependence, and misuse in the United States
Pain Medicine, 12 (2011), pp. 657–667
2.B.R. Schackman, et. al. Cost-effectiveness of long-term outpatient buprenorphine-naloxone treatment for opioid dependence in primary care.Journal of General Internal Medicine, 27 (2012), pp. 669–676
3. D. Polsky, et.al.Cost-effectiveness of extended buprenorphine-naloxone treatment for opioid-dependent youth: Data from a randomized trialAddiction, 105 (2010), pp. 1616–1624
4.Tkacz, J, et.al. Relationship between buprenorphine adherence and health service utilization and costs among opioid dependent patients.Journal of Substance Abuse Treatment (2013).
5.Krebs E, Enns B, Evans E, et al. Cost-effectiveness of publicly funded treatment of opioid use disorder in California [published online November 21, 2017]. *Ann Intern Med*.

TOOL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5:54 PM
Thread
3 of 3
Nu Me Medspa
Hair & Nail Salon
Massage, Tanning, Facials
Laser, Botox, Derm Fillers
Suboxone Clinic
Weightloss Clinic
CALL


DIVERSION

BUPRENORPHINE DIVERSION

- Majority report using for therapeutic purposes
  - 97%- decrease cravings
  - 90%- prevent withdrawal
  - 29%- save $
- Illicit use decreased with access to treatment
- 8-25% have used to get high (rates decrease over time)

Bazazi AR, Yokell M, Fu JJ, Rich JD, Zaller ND. Illicit use of buprenorphine/naloxone among injecting and noninjecting opioid users. *J Addict Med*. 2011;5(3):175-180.
Schuman-Olivier Z, Albanese M, Nelson SE, et al. Self-treatment: illicit buprenorphine use by opioid-dependent treatment seekers. *J Subst Abuse Treat*. 2010;39(1):41-50.
Cicero TJ, Surratt HL, Inciardi J. Use and misuse of buprenorphine in the management of opioid addiction. *J Opioid Manag*. 2007;3(6):302-308.
Cicero TJ, Ellis MS, Surratt HL, Kurtz SP. Factors contributing to the rise of buprenorphine misuse: 2008-2013. *Drug Alcohol Depend*. 2014;142:98-104.


START WHERE
YOU ARE

SICK PEOPLE COME TO HOSPITALS

- Always open
- SUD very common and often severe
- IV use
- Early Medical Consequences
- Opioid Toxicity and Withdrawal

OPIOID TOXICITY

Influenced by purity, loss of tolerance, alcohol/sedative mix

- clouded consciousness to coma
- Severe respiratory depression
- Constricted pupils
- Pulmonary edema
- Severe hypotension, cardiovascular collapse (hypoxia may lead to dilated pupils)
- Reversed by naloxone (narcan)

WITHDRAWAL

- **Typical sx's (flu-like and leaky):**
  - **nausea/vomiting,**
  - **cramps (abd & muscular),**
  - **sweating,**
  - **goose bumps/piloerection,**
  - **rhinorrhea, diarrhea, mydriasis**
  - **Insomnia**
  - **fever**
- **Supportive care:**
  - Bentyl 10mg qid for diarrhea
  - Immodium 4mg; 1-2 q hr prn NTE 8qd
  - Motrin 600mg one q 6 prn bone pain
  - Compazine 10mg TID prn nausea
  - Benadryl 25mg two q 6 prn nasal cong.
  - Clonidine 0.1 to 0.2mg q hour prn; up to 1.2mg
- **Buprenorphine 2mg**

OPIATE WITHDRAWAL

Heroin

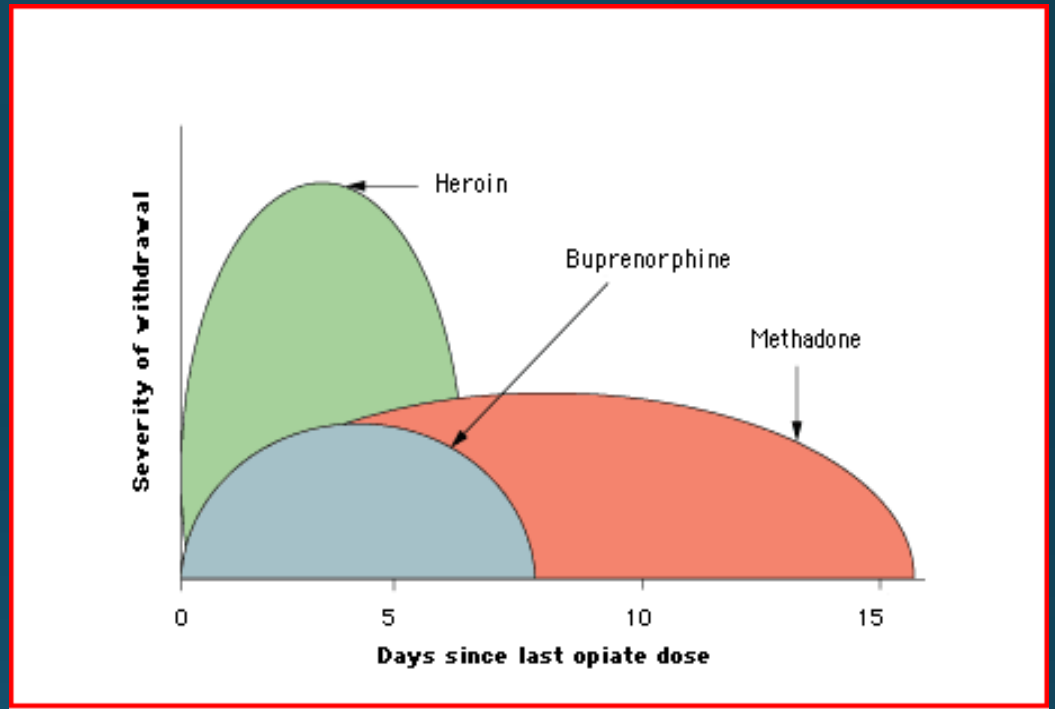
-short ½ life

-4-6h after last use

Methadone

-long ½ life

-24-36h after last use



Severity of opioid-withdrawal symptoms after abrupt discontinuation of equivalent doses of heroin, buprenorphine, and methadone Peak withdrawal symptoms are most severe after discontinuation of heroin. Such symptoms last longest with methadone, which has a somewhat later peak of severity. Buprenorphine has milder peak withdrawal symptoms than does methadone; the duration of symptoms is intermediate between those for methadone and those for heroin. Reproduced with permission from: Kosten, TR, O'Connor, PG. Management of drug and alcohol withdrawal. N. Engl J Med 2003; 348:1786. Copyright © 2003 Massachusetts Medical Society.

Opiate WD: Measurement

- Clinical Opiate Withdrawal Scale (COWS)
  - 11 item
  - Mild: 5-12
  - Moderate: 13-24
  - Moderately Severe: 25-36
  - Severe: >36

72-hour rule

Title 21, Code of Federal Regulations, Part 1306.07(b)

Allows to administer (but not prescribe) narcotic drugs for the purpose of relieving acute withdrawal symptoms while arranging for the patient's referral for treatment

- **Not more than 1-day's medication may be administered or given to a patient at one time**
- **Patient must return to ED each day for no more than 72 hours**
- **This 72-hour period cannot be renewed or extended.**

People choose to use, shouldn't we let them suffer the consequences?

Isn't MAT just a "crutch"?

Aren't you just trading one drug for another?

How long should one stay on MAT?

How about pregnancy?

SUMMARY

- The US has an addiction crisis and Appalachia is on the front lines
- Addiction is a disease that is treatable
- MAT is an evidence based tool that works
- Quality of life and extension of life are the ultimate goals
- We desperately need more clinicians willing to treat, more hospitals willing to support and fewer barriers to implementation
- Have to start where patients are