Opioid Use Disorder:

Management in Acute and Primary Care Settings

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Disclosure

- Bias
  - I’m an addiction physician
  - I’m a family physician
- No financial disclosures
- Non-FDA approved use for a medication discussed

Objectives

- What is opioid use disorder?
- How can I screen for opioid use disorder?
- How can I manage opioid use disorder in acute care and primary care settings?

- Examine personal and institutional bias

IN DEPTH

America's opioid epidemic

Inside America's growing struggle with opioid painkillers and heroin addiction

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Latest

Report sheds light on Chicago's death rate from opioids

Report also claims that while in the suburbs and among whites the main approach is treatment, the strategy in Chicago among African Americans is arrest and prosecution

On **NOVEMBER 16, 10:04 PM**

Kids still getting risky painkiller after tonsillectomy

Despite warnings from the FDA, some

Arizona sees spike in opioid deaths in 2016

Image Gallery

2 PHOTOS

Opioid crisis getting out of hand in Arizona

BY Tom O'Halleran For The Independent Oct 10, 2017 6

More than 400 opioid-overdose deaths reported in Arizona since June 15

Chris McCrory, The Republic | azcentral.com Published 8:46 p.m. MT Oct. 27, 2017 | **Updated 5:34 p.m. MT Oct. 30, 2017**

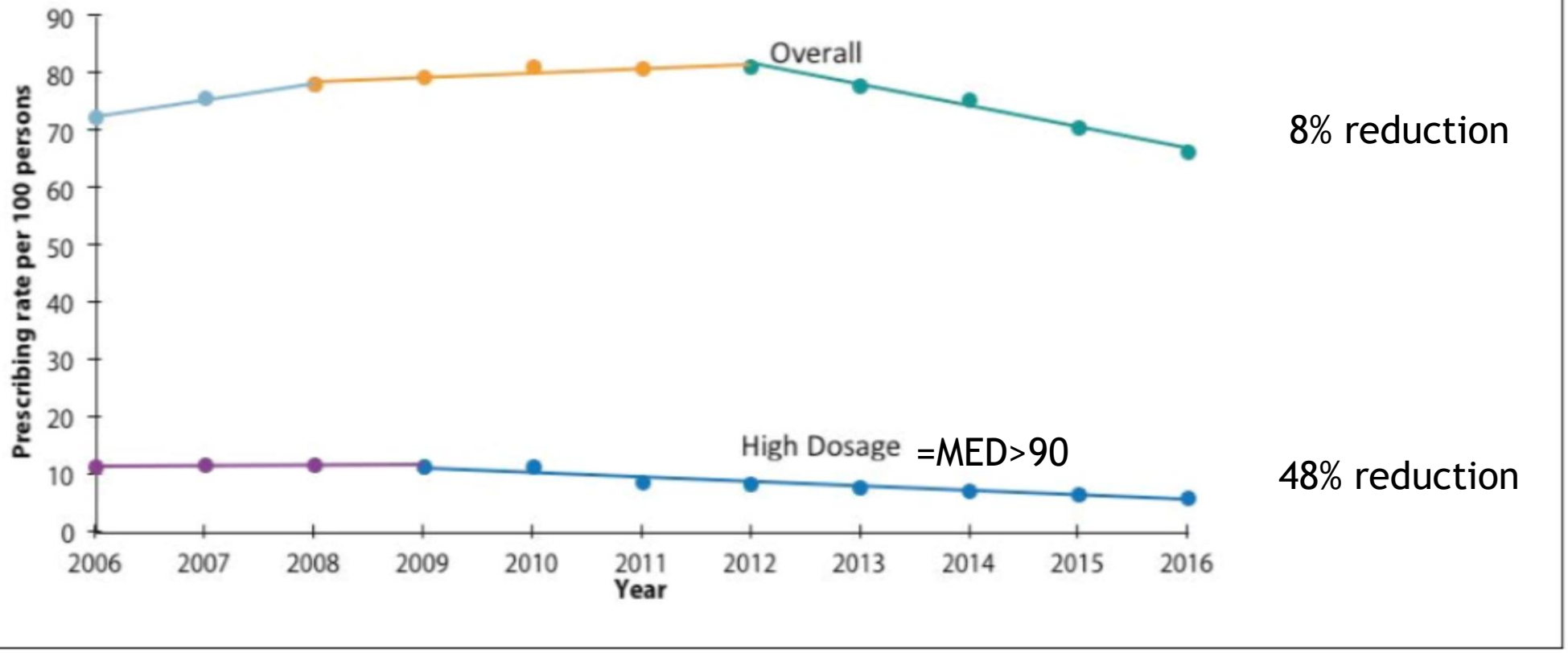
heroin addict Jason Amaral works to help others

Expert: Arizona 'proactive' in fighting opioid abuse, but has more work to do

By Michelle Chance | Cronkite News

Thursday, January 5, 2017

Prescribing opioids

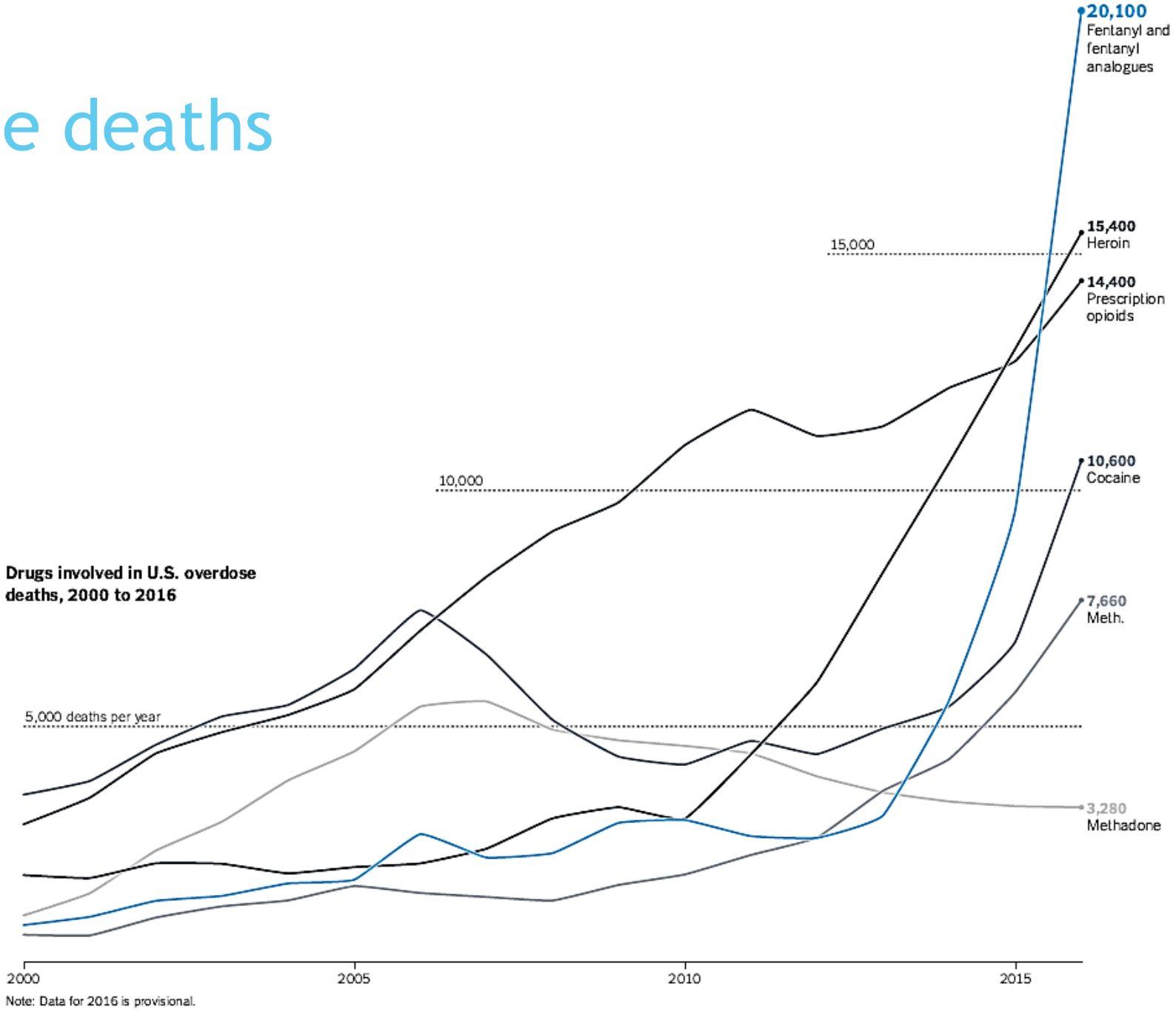


8% reduction

48% reduction

cdc.gov, 2017d

Overdose deaths



Katz, J, Sep. 7, 2017. TNYT

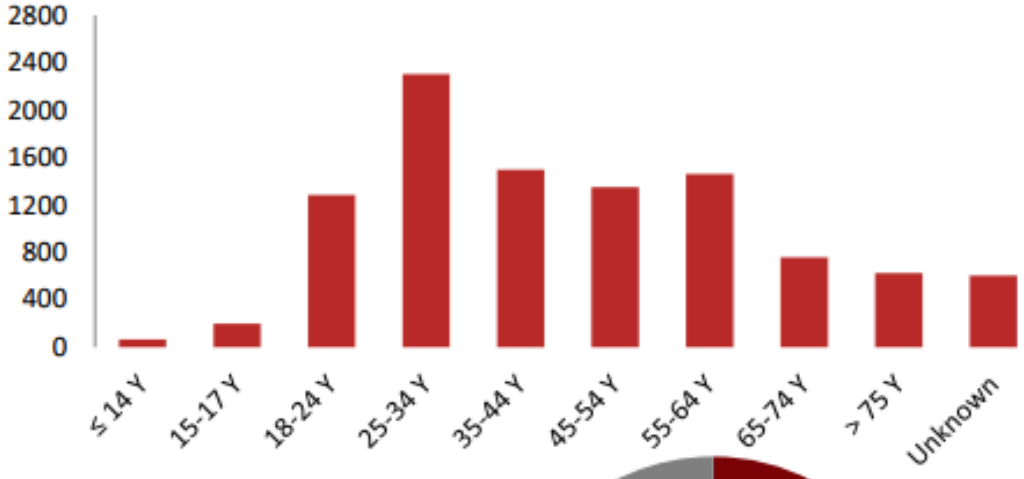
Opioid Report

June 15, 2017– August 9 2018

Opioid Overdoses & Deaths

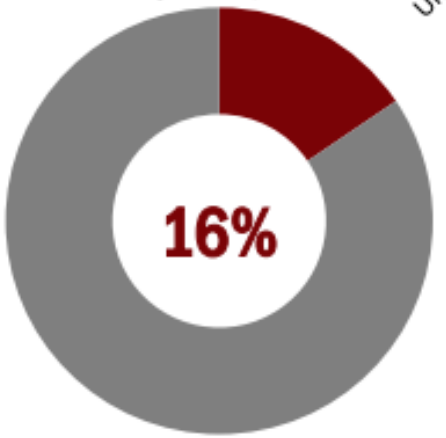
1,613 Opioid Deaths

10,401 possible opioid overdoses reported

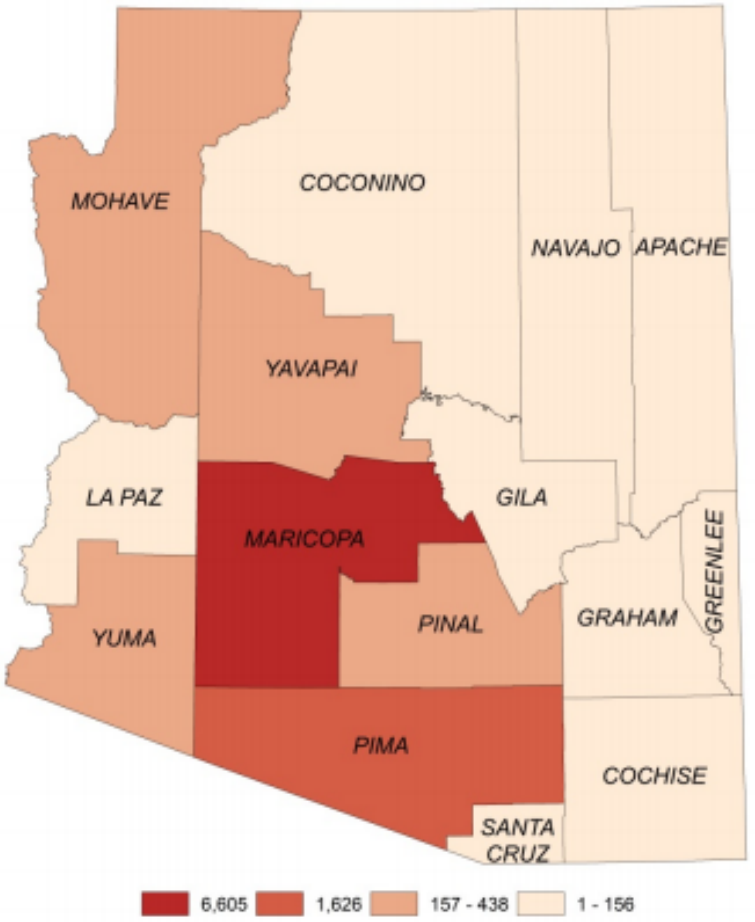


41%

59%



of the possible opioid overdoses were **fatal**

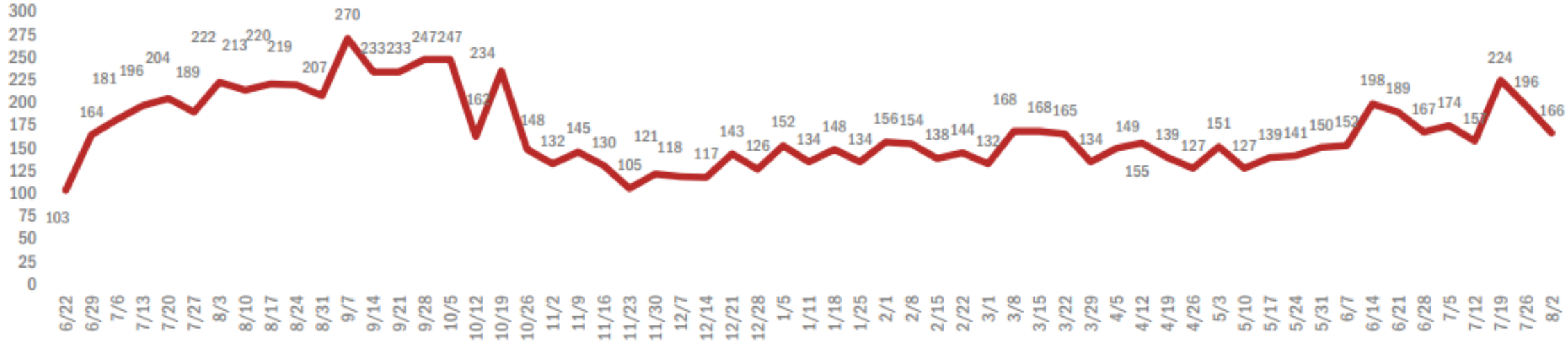


ARIZONA DEPARTMENT OF HEALTH SERVICES

Data Source: AZ-PIERS and MEDSIS

Opioid Overdoses & Deaths

The number of possible opioid overdoses reported weekly* has ranged from 103 to 270.



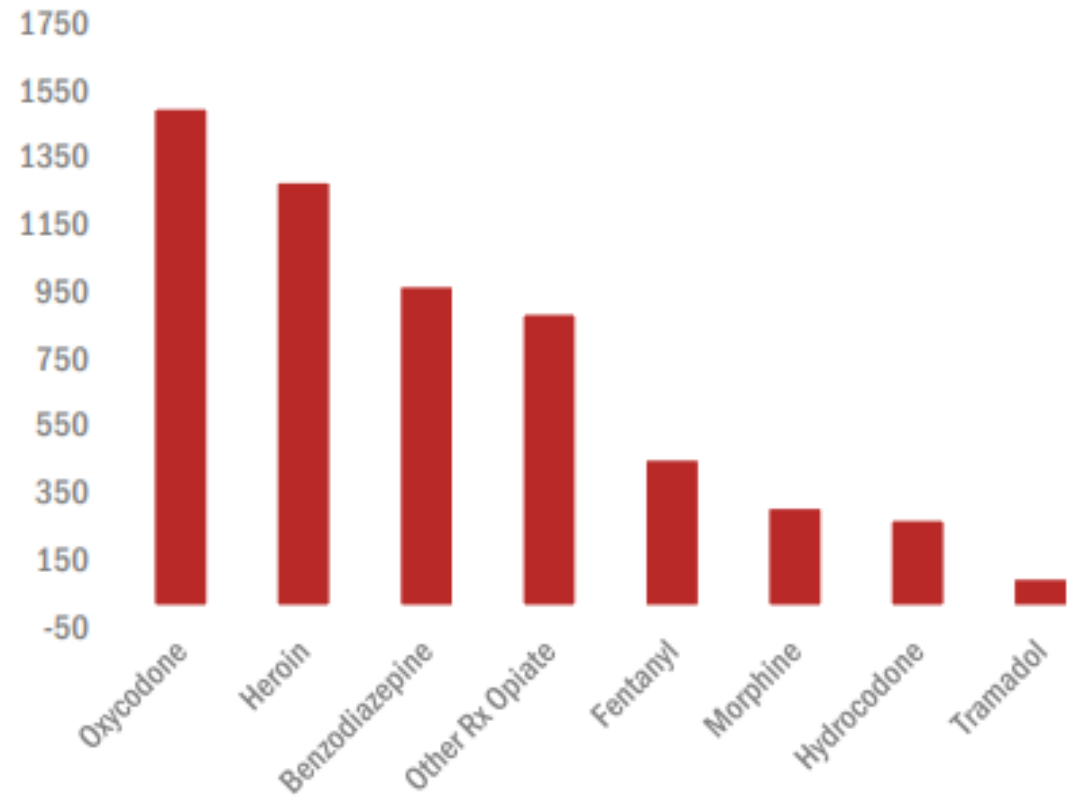
* Reported through 8/2 due to 5 business day reporting lag

ARIZONA DEPARTMENT OF HEALTH SERVICES

Data Source: AZ-PIERS and MEDSIS

Opioid Overdoses & Deaths

53% of individuals with a possible opioid overdose used at least one prescription drug

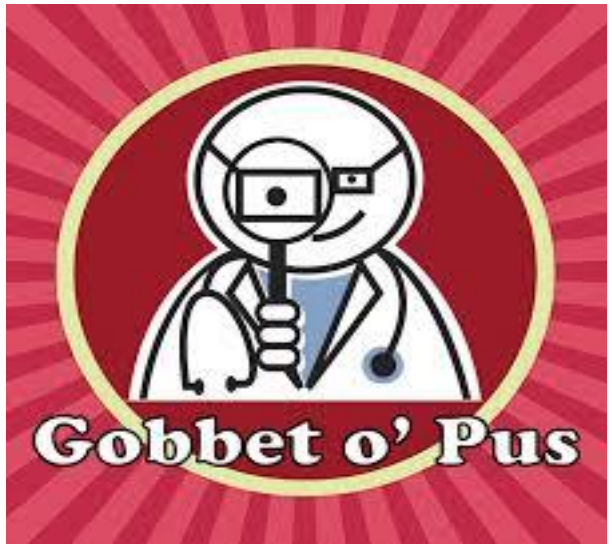


ARIZONA DEPARTMENT OF HEALTH SERVICES

Data Source: AZ-PIERS and MEDSIS

Please scan the QR code and complete the quiz and find more content

Gobbet o’ Pus #926: Siren Call



https://goo.gl/CWqmJY

EdgyDoc

Because the world needs more Mark Crislip

What is the root cause of addiction?

What is a Substance Use Disorder ?

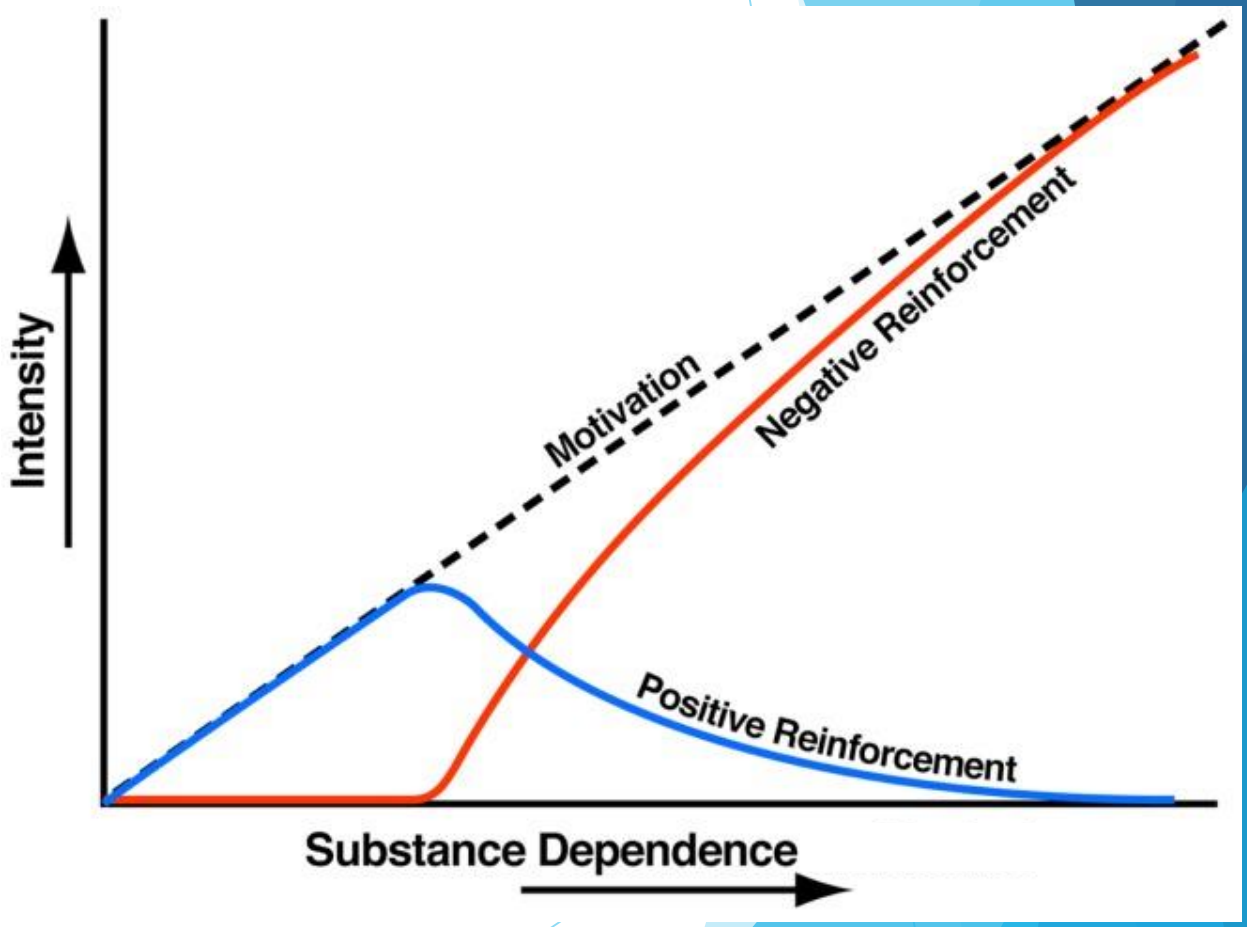
"Addiction is a primary, chronic disease of brain **reward**, **motivation**, **memory** and related circuitry"

Chronic, relapsing disorder characterized by
(a) **Compulsion** to seek and take drugs
(b) Loss of **control** over drug intake
(c) Use despite **consequence**
(d) Development of **craving**

Emergence of **negative emotional state**

The ASAM Principles of Addiction Medicine, 5th ed, 2014
Koob, Addiction is reward deficit, stress surfeit, 2013

Reward Deficit - Stress Surfeit



What is an Opioid Use Disorder ?

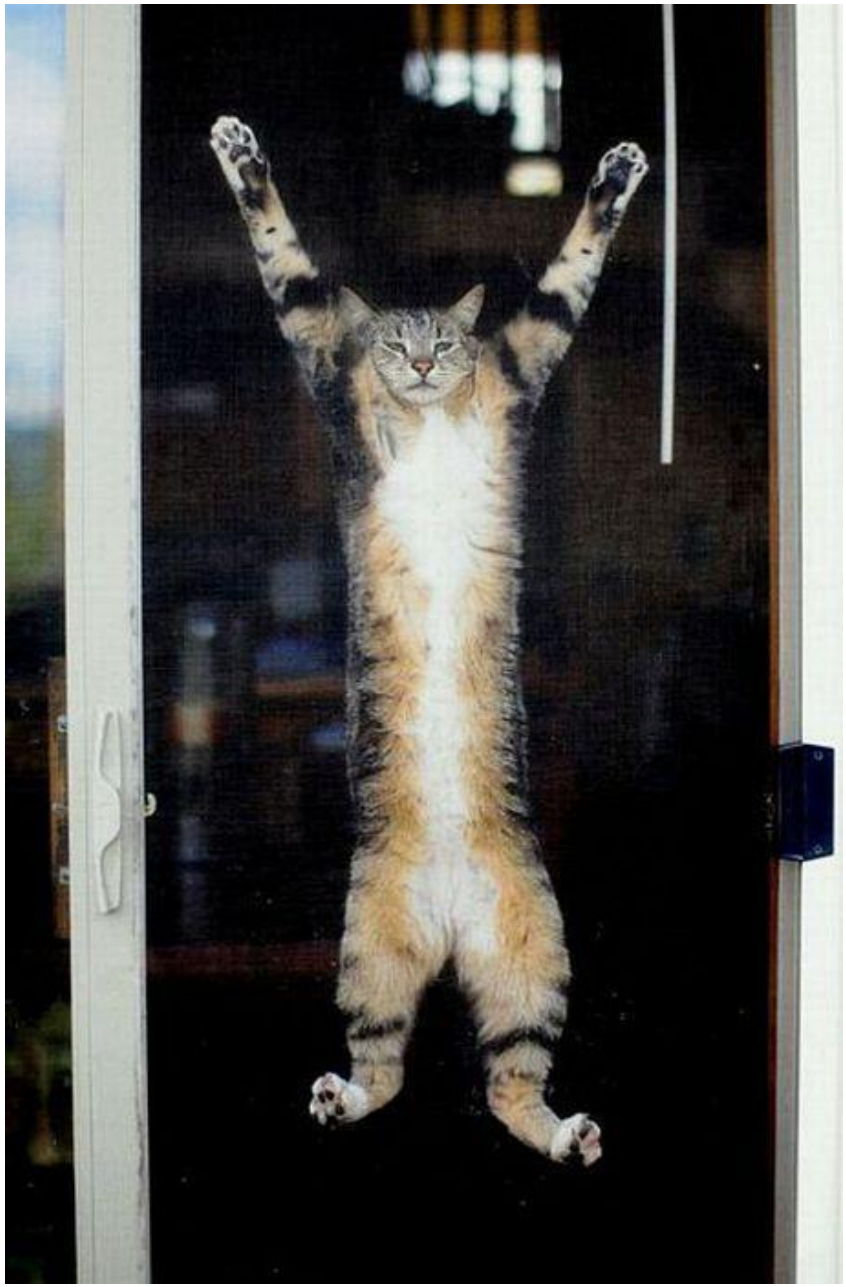
DSM-V criteria

1. Using more than intended
2. Unsuccessful efforts to cut back
3. Great deal of time obtaining
4. Strong craving to use
5. Failure to carry out obligations
6. Continued use despite social problems
7. Important activities given up
8. Use in hazardous areas
9. Use despite harm
10. Withdrawal*
11. Tolerance*

2-3 Mild, 4-5 Moderate, 6-11 Severe

*This criterion not met for those individuals taking medications under appropriate medical supervision [as prescribed]

Screen



Cases #1 or #2

- Work in small groups to answer the questions in one of the cases
- 10 minutes
- One person to give one-liner about the case and share your answers

Opioid Laws

- **1914 - Harrison Anti-Narcotic Act**

  Designated physicians/pharmacists as gatekeepers of opioids
- **1919 - U.S. Supreme Court ruling**

  Disallows physicians prescribing opioids for “maintenance”
- **1974 - Narcotic Addict Treatment Act**

  Methadone distribution

  21 CFR 1306.7 C - allows opioid maintenance and detox in hospital as incidental adjunct if admitted for condition other than addiction
- **2000 - Children’s Health Act Provision - Drug Addiction Treatment Act (DATA)**

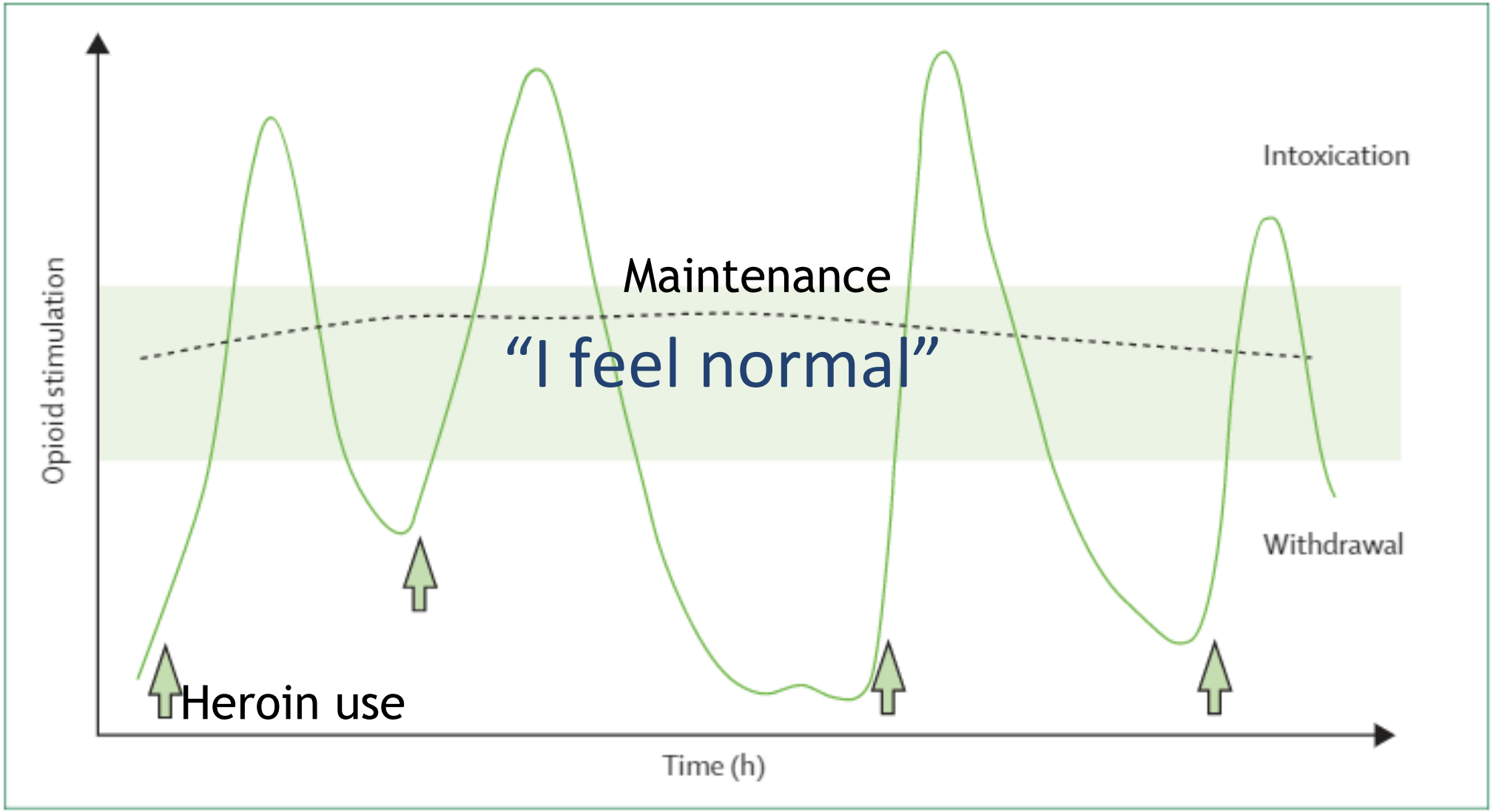
  FDA approved meds: Buprenorphine and Buprenorphine+Naloxone

Treatment Opioid Use Disorder

- **Medication + Behavioral treatment**
- **Opioid agonist therapy**
  - **Methadone** (1974) or **Buprenorphine** (2000)
    - Decreased mortality
    - Higher treatment retention
    - Decreased positive UDS
    - Decreased HIV Transmission
    - Decreased healthcare costs
- **Opioid antagonist**
  - Naltrexone (PO/XR-IM)
  - Non inferior to buprenorphine at 12 weeks
- **Opioid Detox**
  - Relapse rate 60-90%

Tanum et al, 2017, JAMA
Mattick et al, 2014, Cochrane

Managing Opioid Use Disorder



Treatment Opioid Use Disorder

Methadone

Full mu-opioid receptor agonist

NMDA antagonist (prevents tolerance)

$t_{1/2}$ 36-48 hours

Dispensed daily at opioid treatment program (OTP)

Start at 10-30 mg/day

- OP first dose limited to 30 mg
- IP can order 10 mg BID or TID, hold for RR<12
- Can increase 5-10 mg every 4-5 day if still in withdrawal

Transfer to methadone clinic at time of discharge within 24 hours

Treatment Opioid Use Disorder

Buprenorphine

Partial mu-opioid receptor agonist

Administered **sublingual**

$t_{1/2}$ 3-5 hours,

duration of action 36 hours due to low disassociation and high affinity

Prescribed by DATA waivered physician

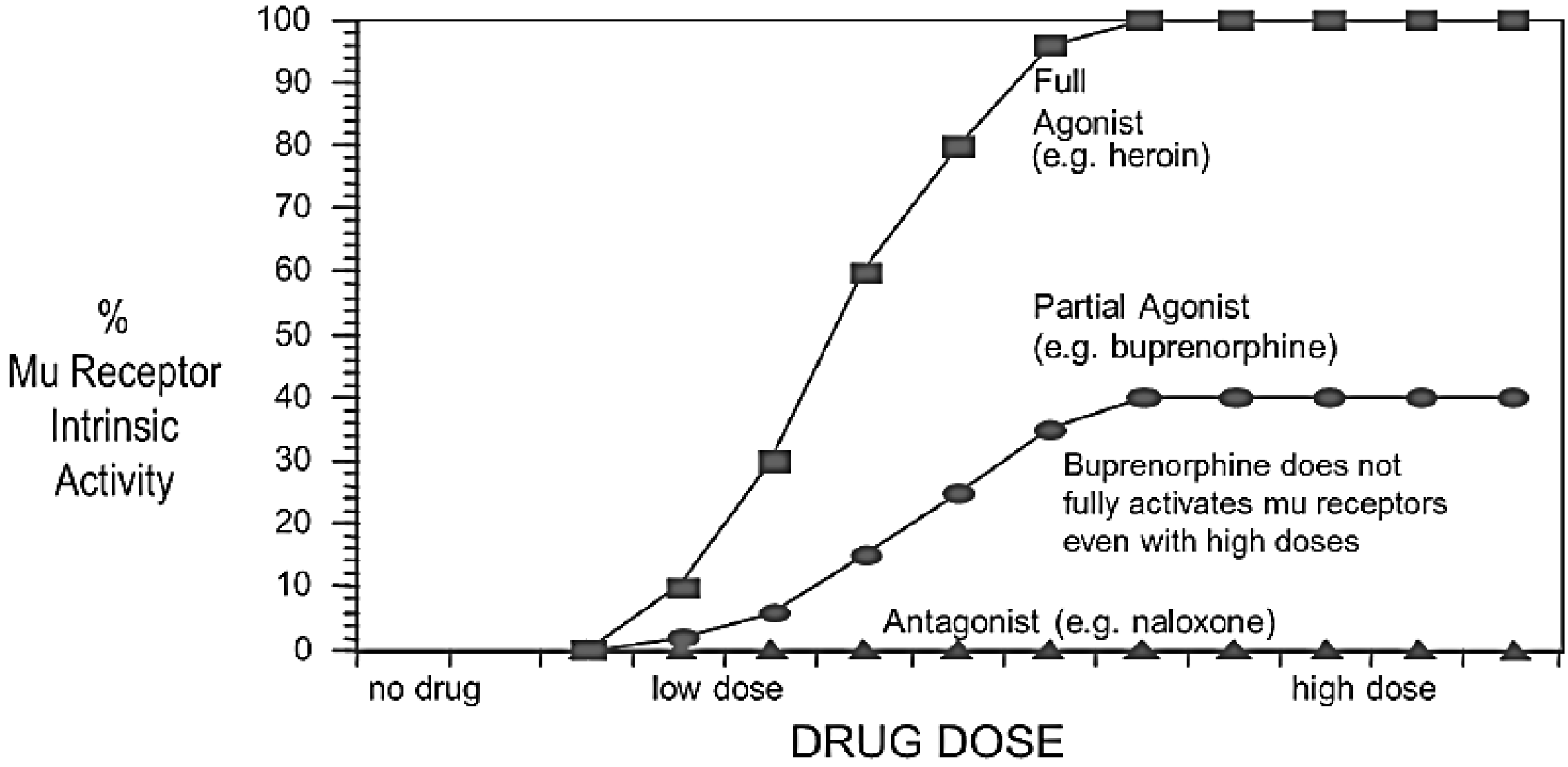
Providers need to complete 8 hour training (link)

Must start while patient in withdrawal and COWS > 8

12-24 hours short acting opioid (heroin, oxycodone)

>24 hours for long acting formulations (MS Contin, OxyContin)

>72 hours for methadone



PCSS DATA Training, 2016

Medication Interactions

Methadone

Decreased effect

- Rifampin, carbamazepine, phenytoin, efavirenz, nevirapine, lopinavir/ritoavir

Increased effect

- Azoles, macrolides, MOAIs, SSRIs, TCA

Prolonged QT

- Fluoroquinolones, macrolide, antiemetics, antipsychotics

Buprenorphine

May increase effect

- Atazanavir (ART) and phenytoin

Rifampin may produce opioid withdrawal

Warning:

Caution when either is used with sedative/hypnotics

Methadone v Buprenorphine

Methadone

Pros:

- Daily observed dose
- Less risk for diversion
- Ancillary services
- Better retention

Cons:

- Daily observed dose
- QTc prolongation
- Medication interaction
- Prolonged induction 1 mo
- More stigma
- Less available in rural area

Buprenorphine

Pros:

- Office based treatment
- Less stigma
- Less overdose risk
- Induction faster 1-2 days
- Improved NAS in pregnancy

Cons:

- Withdrawal to start
- Risk of precipitated withdrawal
- Higher diversion risk
- Lower retention

Opioid Use Disorder - Outpatient

Opioid Use Disorder - Outpatient

- **Methadone clinic**
  - Only legal way to prescribe methadone for opioid use disorder
  - Counseling + peer + relapse prevention + drug screen
  - Retention 60-80%

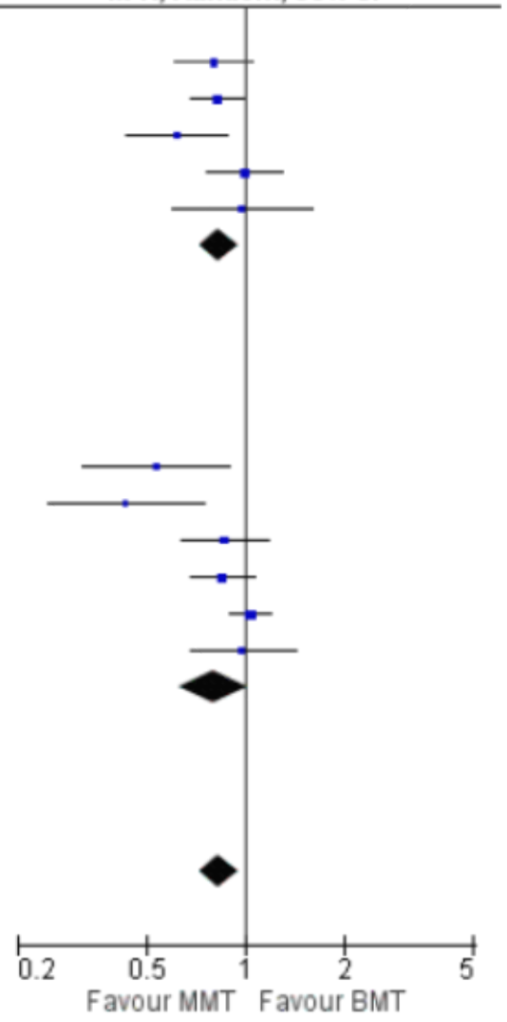
- **Office-Based Opioid-Agonist Treatment (OBOT) - Buprenorphine**
  - Multiple effective Primary Care models
  - PCP doing motivational interviewing non-inferior to PCP + CBT
  - Retention 50-70% 30d-12mo

- **Behavioral therapies + MAT = Gold Standard**
  - CBT (group, individual)
  - Peer support (AA, NA, HA, SMART Recovery, Refuge Recovery)
  - Residential Treatment
  - Sober living

Korthuis et al, 2017
Bart et al, 2012

Figure 4. Forest plot of comparison: 1 Flexible dose buprenorphine versus flexible dose methadone, outcome: 1.1 Retention in treatment.

Study or Subgroup	buprenorphine Events	Total	methadone Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
1.1.1 Double-blind flexible dose studies						
Johnson 2000	32	55	40	55	10.2%	0.80 [0.61, 1.05]
Mattick 2003	96	200	120	205	13.5%	0.82 [0.68, 0.99]
Petitjean 2001	15	27	28	31	7.9%	0.62 [0.43, 0.88]
Strain 1994a	47	84	45	80	10.4%	0.99 [0.76, 1.30]
Strain 1994b	13	24	15	27	5.1%	0.97 [0.59, 1.61]
Subtotal (95% CI)		**390**		**398**	**47.2%**	**0.83 [0.72, 0.95]**
Total events	203		248			
Heterogeneity: Tau² = 0.00; Chi² = 4.94, df = 4 (P = 0.29); I² = 19%						
Test for overall effect: Z = 2.63 (P = 0.009)						
1.1.2 Open label flexible dose studies						
Fischer 1999	11	29	22	31	4.9%	0.53 [0.32, 0.90]
Kristensen 2005	9	25	21	25	4.4%	0.43 [0.25, 0.74]
Lintzeris 2004	38	81	42	77	9.2%	0.86 [0.63, 1.17]
Magura 2009	49	77	42	56	11.9%	0.85 [0.68, 1.06]
Neri 2005	29	31	28	31	14.9%	1.04 [0.89, 1.20]
Soyka 2008a	28	64	34	76	7.5%	0.98 [0.67, 1.42]
Subtotal (95% CI)		**307**		**296**	**52.8%**	**0.80 [0.63, 1.02]**
Total events	164		189			
Heterogeneity: Tau² = 0.06; Chi² = 18.72, df = 5 (P = 0.002); I² = 73%						
Test for overall effect: Z = 1.81 (P = 0.07)						
Total (95% CI)		**697**		**694**	**100.0%**	**0.83 [0.73, 0.95]**
Total events	367		437			
Heterogeneity: Tau² = 0.03; Chi² = 22.79, df = 10 (P = 0.01); I² = 56%						
Test for overall effect: Z = 2.77 (P = 0.006)						
Test for subgroup differences: Chi² = 0.05, df = 1 (P = 0.82), I² = 0%						

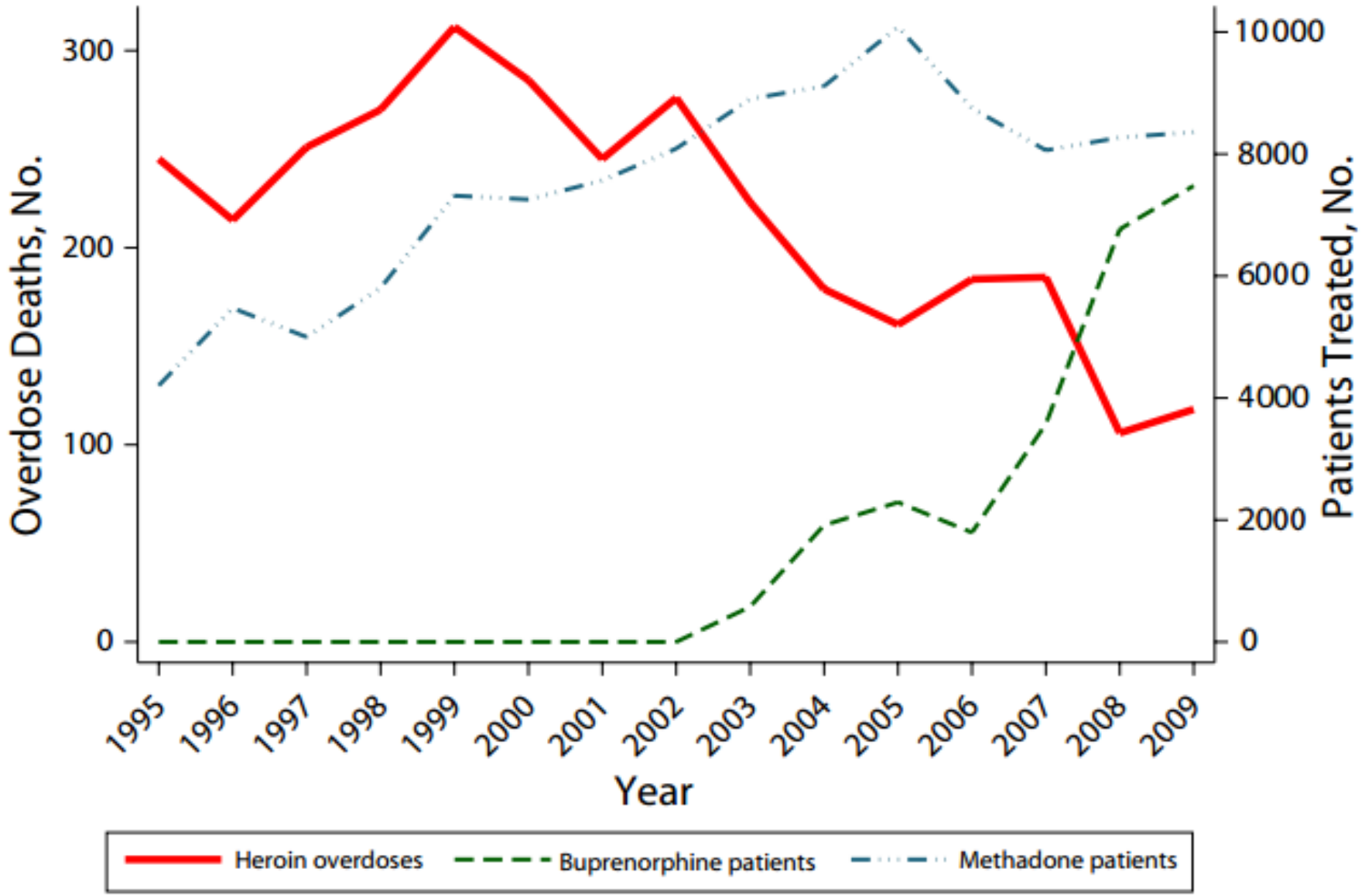


Mattick et al, 2014

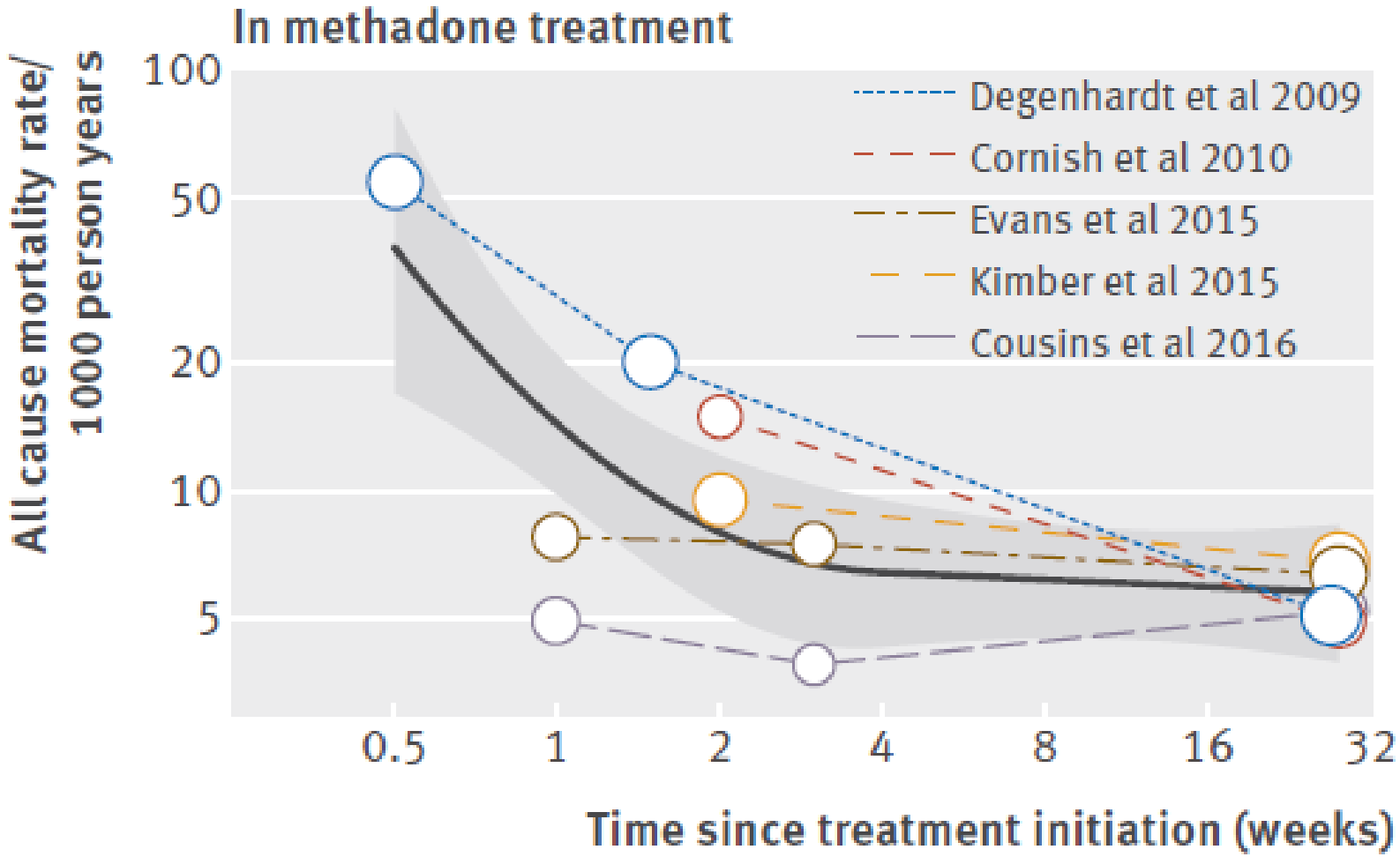
Overdose deaths in Baltimore after MAT expansion 1995-2009

Regression:

- Bup R=-0.88
- Methadone R=-0.48



Schwartz et al 2013



Reduction of 25 deaths for every 1000 person years on methadone (95% CI 14-36)

Opioid Use Disorder – Acute Care Setting

Opioid Use Disorder – Acute Care Setting

Patients accept maintenance when offered in hospital

- In one observational study, 29 cases
  - 9 (30%) accepted buprenorphine
  - 9 (30%) accepted methadone
  - 11 (38%) refused OAT

Less likely to leave AMA if methadone started in hospital

- Retrospective study N=480 IVDU
- Adjusted OR 0.49, 95% CI 0.32-0.77

Methadone maintenance reduces risk of overdose death by 50%

- Retrospective study N=480 IVDU

Opioid Use Disorder - Acute Care Setting

Buprenorphine maintenance (M) v detoxification (D)

- Linkage to treatment 6 mo - M 72%, D 12% - NNT 1.6
- Engaged in treatment 6 mo - M 17%, D 3% - NNT 7
  - No difference in illicit opioid use

Methadone maintenance increases outpatient follow up

- 50-60% engage in treatment
  - Observational study 52% patients remained at 6 mo

Factors increasing linkage to treatment

- Referral to specific clinic
- Prior treatment experience
- Longer hospital stay

Opioid Use Disorder – ED

D'Onofrio et al 2015, 2017

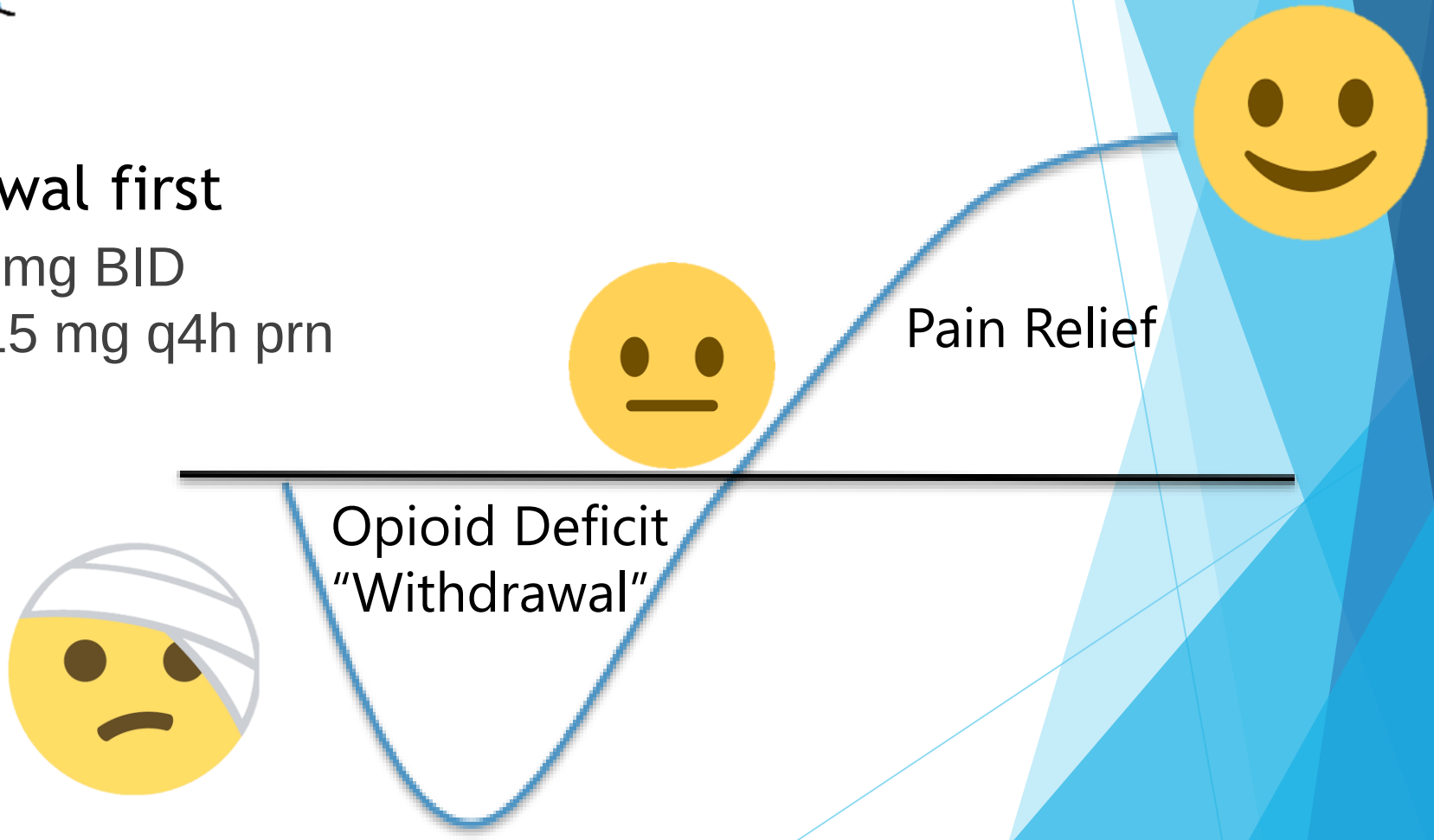
Initiating buprenorphine in the ER increases treatment at 1 and 2 months and decreases self reported opioid use, but does not decrease + opioid u-tox.

- N=329, RCT
- Engagement in treatment (*p<0.001)

Intervention	1 mo	2 mo
Referral (handout)	37%	53%
SBIRT	45%	47%
SBIRT + Buprenorphine	78%*	74%*

Opioid Use Disorder

1. Treat withdrawal first
   - Methadone 10 mg BID
   - Oxycodone 5-15 mg q4h prn



Opioid Use Disorder

2. Be aggressive with short acting high affinity opioids
3. Once pain well controlled schedule with holding parameters RR<12
4. PCA's work great initially (12-24 hours)
5. Transition to oral when pain controlled if used IV
   - Equation: IV dose * PO equivalence divided by #doses/24hours
   - Ie, Dilaudid PCA 30 mg in 24 hours → (1 mg IV = 3mg PO)
     - 90 mg PO divided by 8 doses (q3h) = 11.25 mg → 8-10 mg q3h
6. Require 2-5 x's normal dose BUT same duration

Opioid Use Disorder

5. Communicate with Surgery / Anesthesia preoperatively
   - Start PCA post op
   - Local and regional anesthesia
     - Prolonged epidural 24 hours, Duramorph spinal
     - Transverse abominis plane (TAP) block
   - Ketamine gtt post operatively
6. Utilize multimodal approach when not contraindicated
   - Schedule acetaminophen 1000 mg q6h, ibuprofen 600 mg q8h
   - Muscle relaxers (ie tizanidine 2-4 mg q4hr, hold for hypotension)
   - Topical lidocaine
   - Antiepileptic medications (gabapentin 300-600 mg q8h)
   - Mindfulness, novel environment, music therapy, aroma therapy

Risk Mitigation
Obtain informed consent
Controlled substance agreement
Avoid concurrent use with sedative hypnotics
Check AZ CSPMP
Discuss reproduction plans and risk of NAS
Prescribe lowest effective dose <50-90 MED
Counsel safe storage
Evaluate for substance use disorder
Co-prescribe naloxone to at risk patients
Individualize exit strategy

Naloxone saves lives!

- Coprescribe naloxone to patients and family/friends at risk
  - Overdose
  - Illicit use
  - MME>90 mg/day
  - Release from abstinence program or jai
  - Has opioid use disorder +/- MAT
  - Coprescribed sedative hypnotics
  - SI
  - History of OUD re-initiating opioids
  - Medical comorbidity
- Decreases overdoses, death

Harm Reduction

- Naloxone prescribing
  - Sonoran Prevention Works
- Needle exchange
  - Shot in the Dark
- Safe injection education
- Safe consumption site
  - Not in AZ
- HIV Pre Exposure Prophylaxis
  - emtricitabine 200 mg/tenofovir disoproxil fumarate 300 mg (Truvada) once daily

Shot In The Dark Phoenix

SONORAN PREVENTION WORKS

Arizona Opioid Epidemic Act 2018

AZ SB1001	Date
Check AZ CSPMP (embedded in Cerner)	Oct 2017
Limit Rx to ≤5 days in naïve patients Exceptions: • Post-surgical • Active cancer • Trauma • Hospice/Palliative • MAT for SUD • NAS	Apr 2018
Limit MED ≤90 • >90MED requires consult from Pain Management or Opioid Assistance and Referral (OAR line) 1-888-688-4222	Apr 2018
e-Prescribe controlled substances	July 2019
Hospital systems • Controlled substance agreement • Informed consent • Substance use risk assessment	

Resources

- BUMCP Medical Toxicology & Addiction Medicine Consults
  - Call Poison Center and ask for Addiction Medicine Consult
  - 602-253-3334
- BUMCP Addiction Recovery Center
  - Order ambulatory referral
- Opioid Assistance and Referral Line 24/7
  - 1-888-688-4222

Conclusions

- Opioid use disorder is a chronic disease
- Screen using a validated tool
- MAT can be started in primary care or the hospital to control symptoms and behaviors and decrease mortality
- Risk mitigate when prescribing opioids and use harm reduction in patients who are not ready to change

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