Changemakers in Addiction Care: Creation of Pathways for PAs

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Josh Luftig, PA-C

CA BRIDGE

No financial disclosures…

But we may say brand names on accident!

Some Terms

Regular Drug Use → Desensitization → Tolerance

- Tolerance - requires higher dose for same effect
- Dependence - will enter withdrawal without it, must use to feel normal
- Addiction - complex diagnosis related to negative psychosocial behaviors and consequences because of substance use disorder

Not all drug use is addiction.

*"**Pt with Substance Use Disorder**" – Not "addict," "druggie," etc.*

Educational Objectives

At the conclusion of this session, participants should be able to:

- Recognize the opioid overdose epidemic as an urgent public health emergency that PAs are well positioned to address
- Recommend evidence-based medication and harm reduction interventions to treat opioid use disorder
- Formulate a plan to implement a change in or improvement in the care of people who use drugs


The new
standard
of care.

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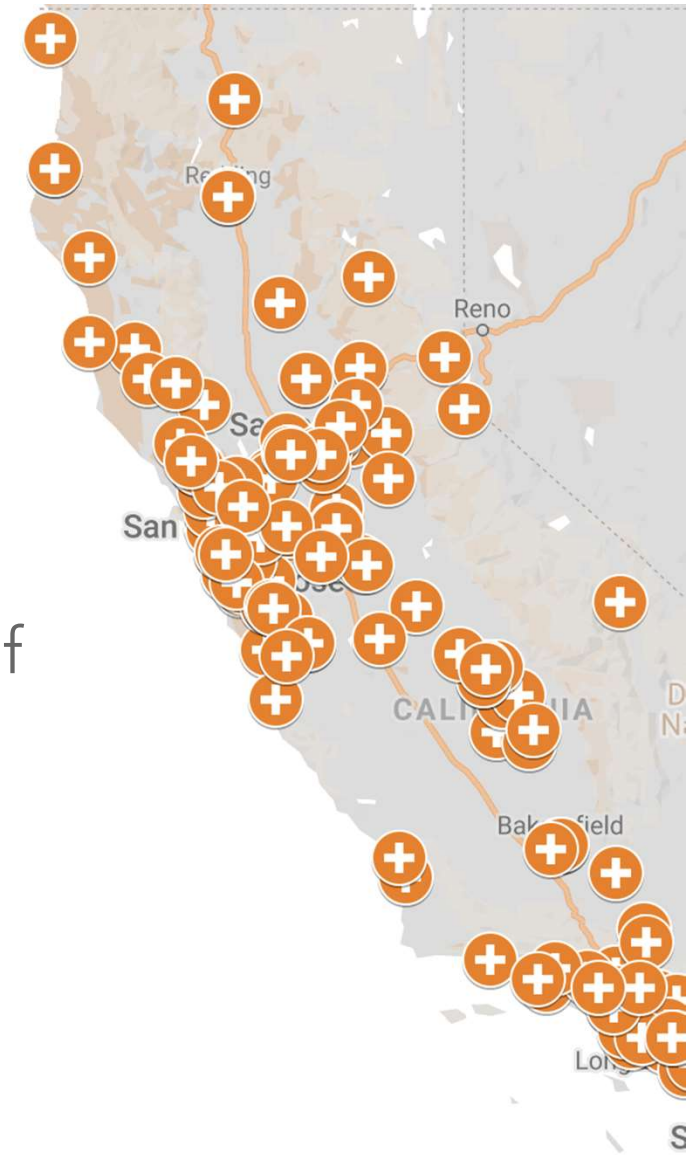
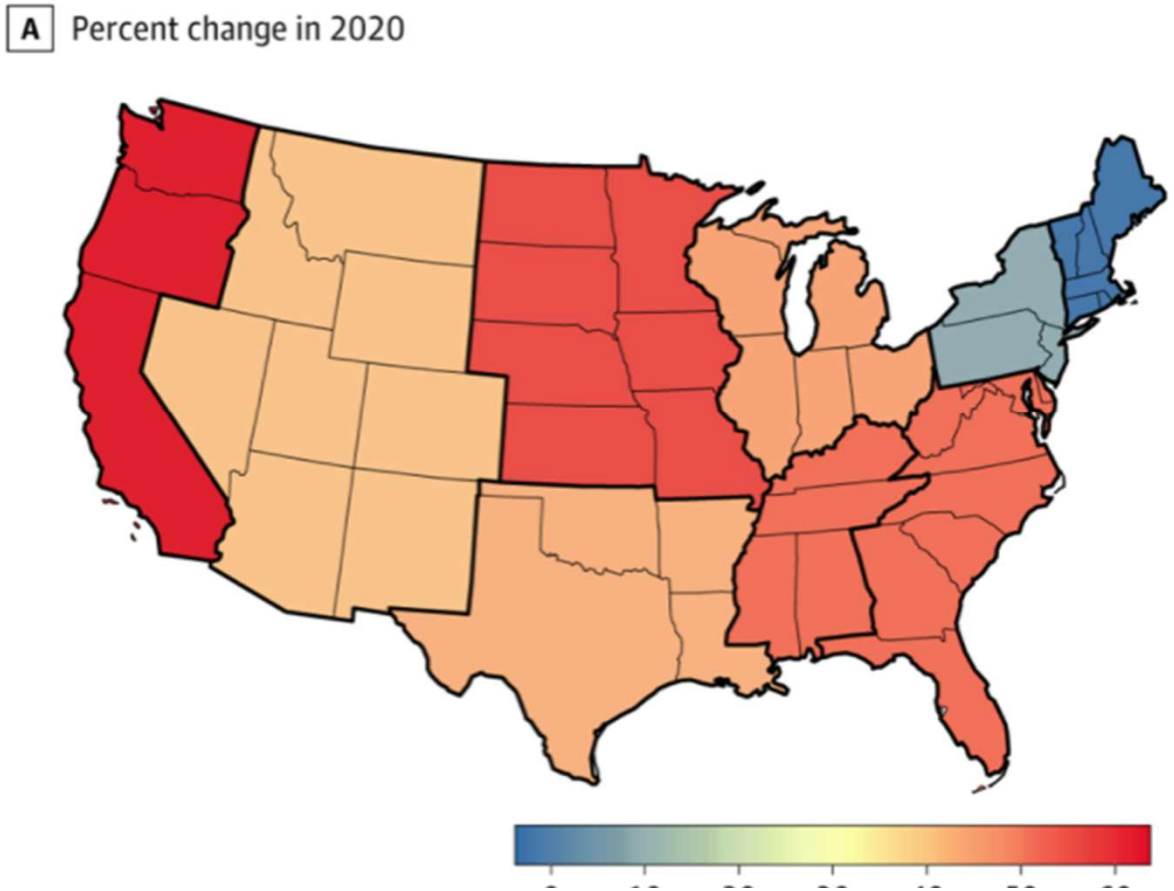
Goal: 24-7 access to high quality treatment of substance use disorders in all California hospitals by 2025.



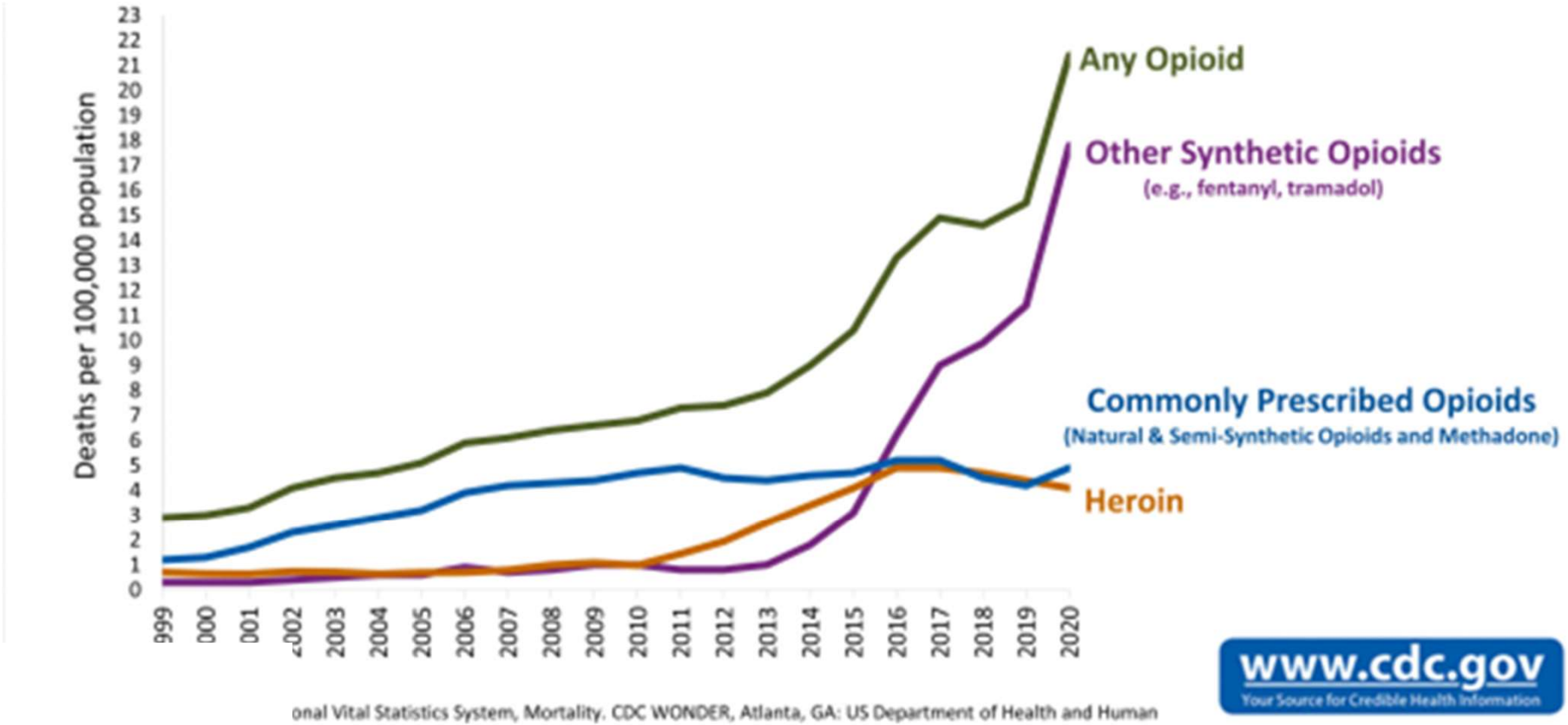
Goal: 24/7 Access to MOUD in EDs in every state by 2027

Figure 3. Overdose-Associated Cardiac Arrests (OCAs) per 100 000 Activations and Percentage Increases by Census Division, 2020



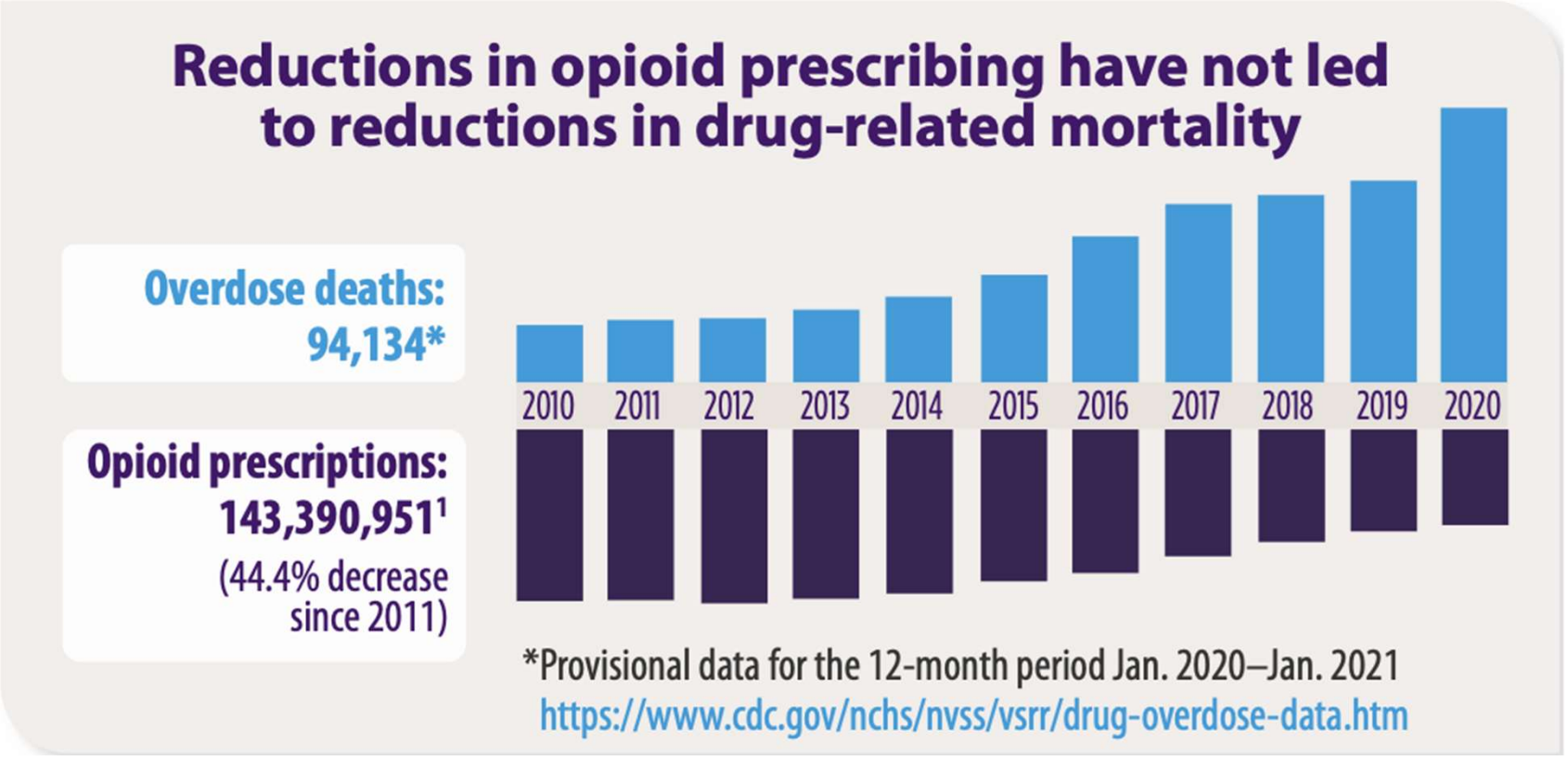
Overdose Death Rates Involving Opioids, by Type

United States, 1999-2020



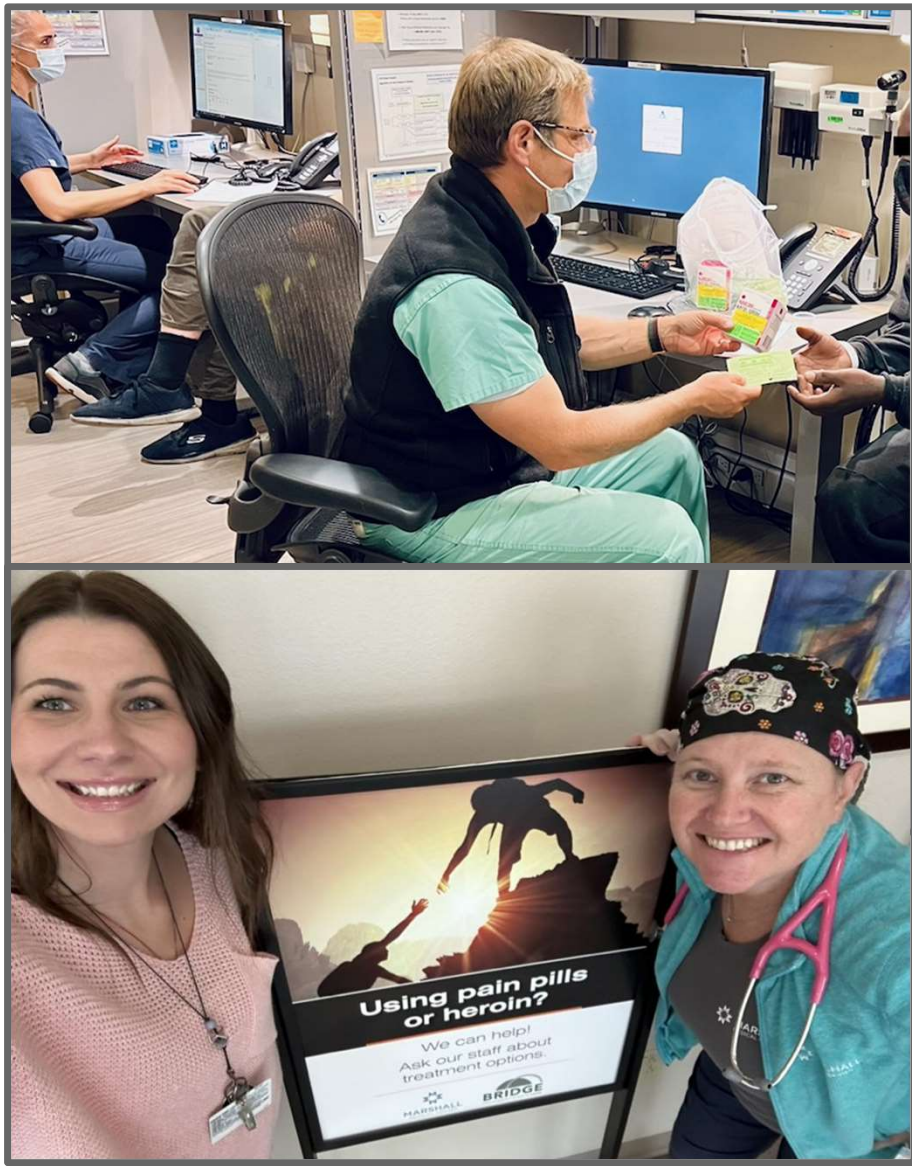
onal Vital Statistics System, Mortality. CDC WONDER, Atlanta, GA: US Department of Health and Human
://wonder.cdc.gov/.

As Opioid Prescribing Decreased, Overdose Deaths Increased



Why PAs?

- Serve areas of little access
- Collaborative by profession choice
- Patient facing - at many sites, bulk of patients seen by PAs
- Mobile/flexible- ED and clinic
- Adaptable – able to cross-train & work in different settings



SUD is a…

chronic

TREATABLE

disease.

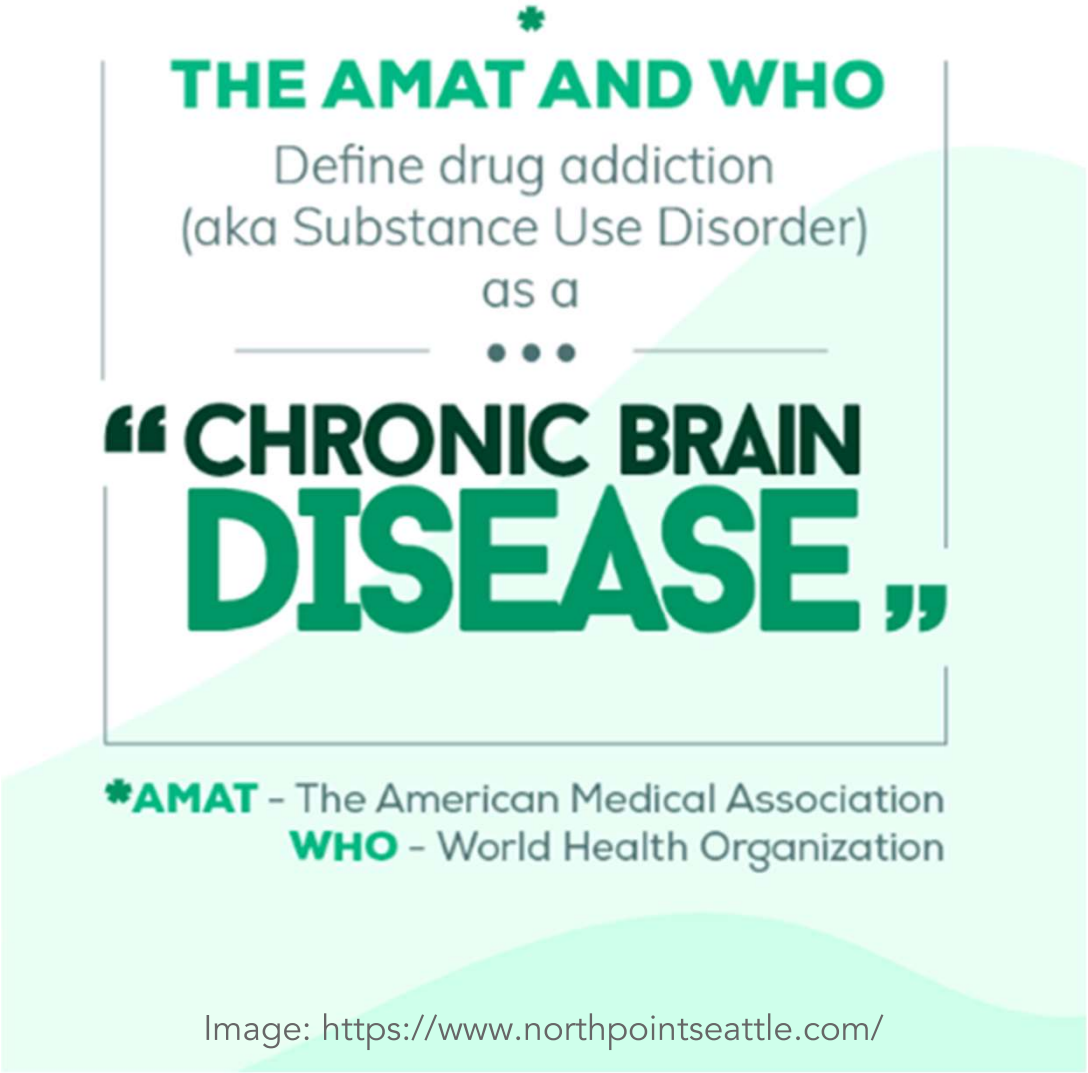
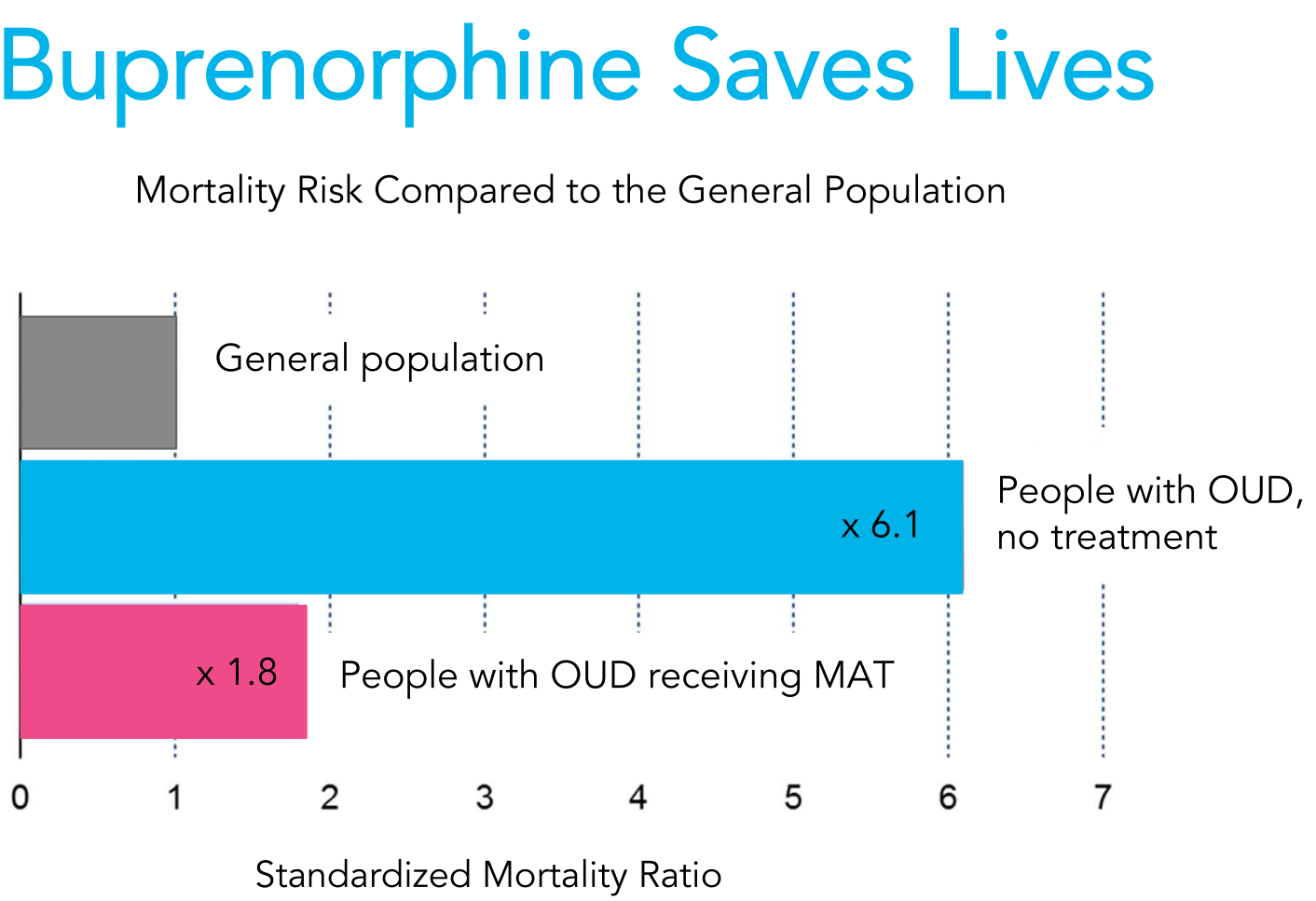


Image: https://www.northpointseattle.com/

Buprenorphine Saves Lives



Evans et al., 2015.

OUD is an EMERGENCY… & this is our JOB.

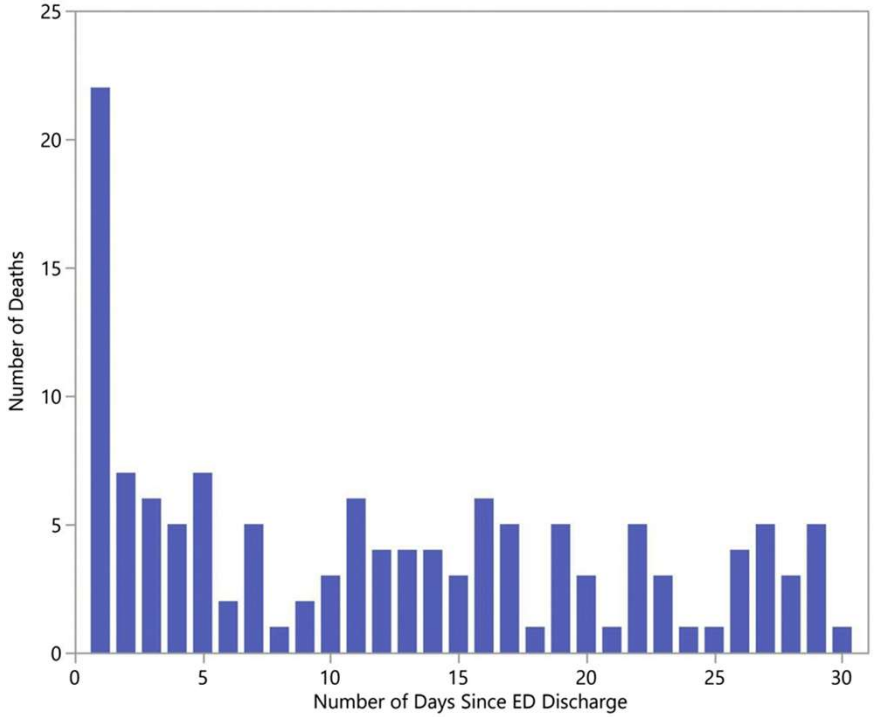
One-Year Mortality of Patients After Emergency Department Treatment for Nonfatal Opioid Overdose

Scott G. Weiner, MD, MPH[a,*], Olesya Baker, PhD[a], Dana Bernson, MPH[b], Jeremiah D. Schuur, MD, MHS[c]

Study of patients treated in Massachusetts EDs for opioid overdose 2011-2015

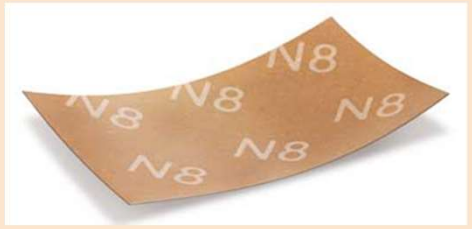
- Illustrates the short-term increase in mortality risk post-ED discharge
- Of patients that died, 20% died in the first month
- Of those that died in the first month, 22% died within the first 2 days

Number of deaths after ED treatment for nonfatal overdose by number of days after discharge in the first month (n=130)



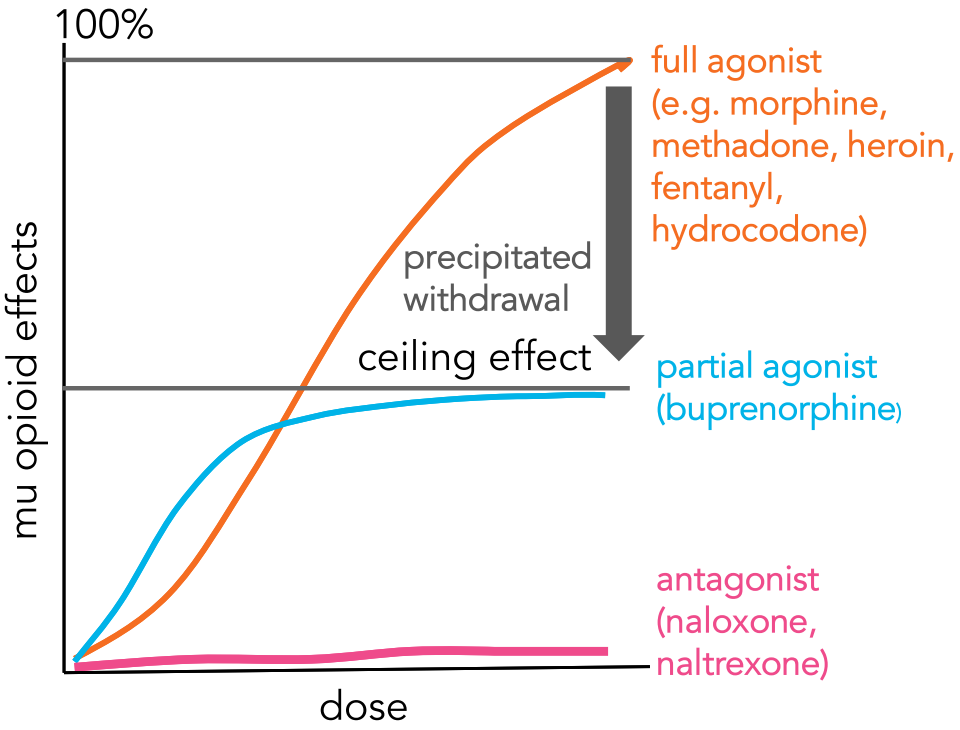
Source: Weiner, Scott, et al.. *One-Year Mortality of Patients After Emergency Department Treatment for Nonfatal Opioid Overdose.* Annals of Emergency Medicine. April 2, 2019.

Medications for Opioid Use Disorder

Methadone	Buprenorphine ± Naloxone	Naltrexone
Full mu (opioid) receptor agonist	Partial mu receptor agonist	Mu receptor antagonist (blocker)
	 	
Oral (often solution)	Sublingual (tab, film), IV, IM, subcutaneous injection, transdermal patch	Intramuscular injection (extended release) or oral Ex: “Vivitrol,” “ReVia”

Understanding Buprenorphine (Bup)

- Treats withdrawal, cravings, & overdose
- Partial agonist → less respiratory depression & sedation
- High affinity
  - Blocks & displaces other opioids
  - Can precipitate withdrawal
- Half-life ~ 24-36 hours (long acting)



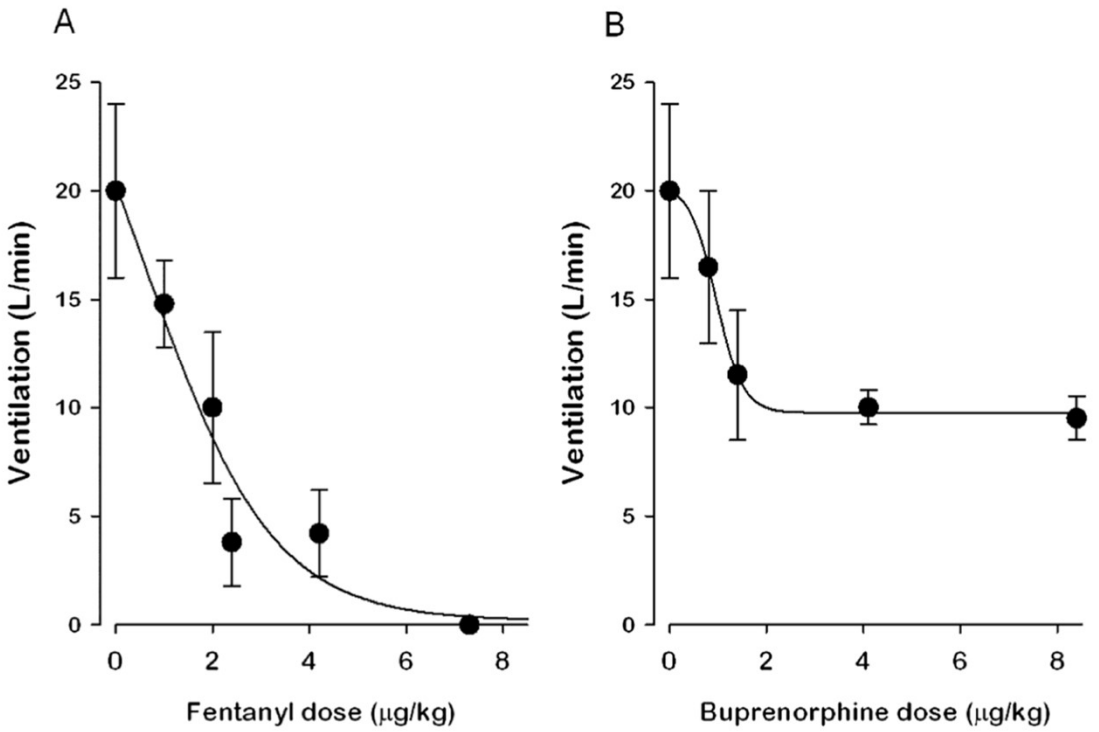
Ceiling On Respiratory Depression

British Journal of Anaesthesia **96** (5): 627–32 (2006)
doi:10.1093/bja/ael051 Advance Access publication March 17, 2006

BJA

Buprenorphine induces ceiling in respiratory depression but not in analgesia

A. Dahan[1]*, A. Yassen[2], R. Romberg[1], E. Sarton[1], L. Teppema[1], E. Olofsen[1] and M. Danhof[2]



Emergency Department Medication Starts Save Lives

Original Investigation

Emergency Department–Initiated Buprenorphine/Naloxone Treatment for Opioid Dependence

A Randomized Clinical Trial

Gail D'Onofrio, MD, MS; Patrick G. O'Connor, MD, MPH; Michael V. Pantalon, PhD; Marek C. Chawarski, PhD; Susan H. Busch, PhD; Patricia H. Owens, MS; Steven L. Bernstein, MD; David A. Fiellin, MD

37% vs 78%

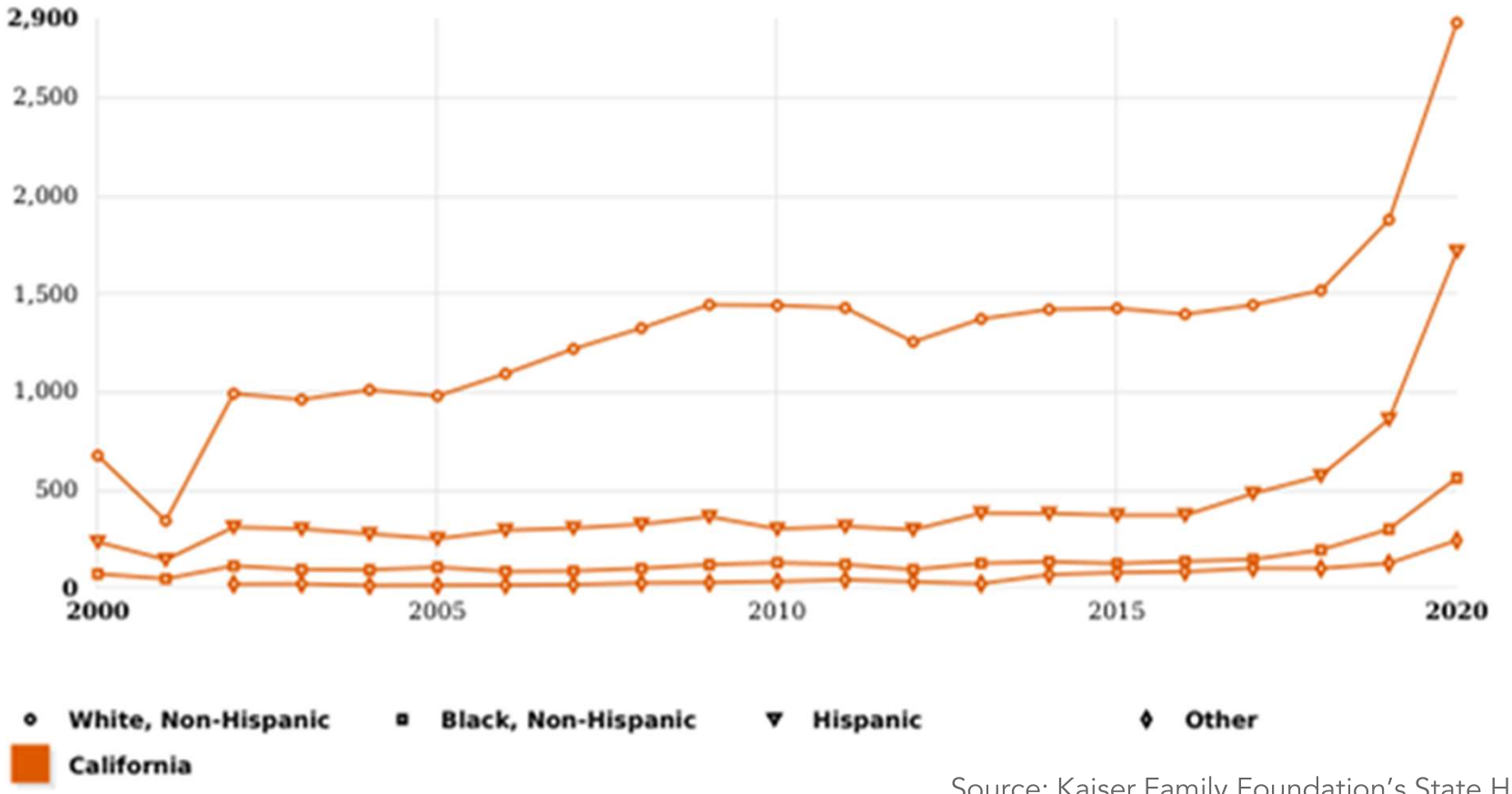
CONCLUSIONS AND RELEVANCE Among opioid-dependent patients, ED-initiated buprenorphine treatment vs brief intervention and referral significantly increased engagement in addiction treatment, reduced self-reported illicit opioid use, and decreased use of inpatient addiction treatment services but did not significantly decrease the rates of urine samples that tested positive for opioids or of HIV risk. These findings require replication in other centers before widespread adoption.

The Numbers for Success

Number Needed to Treat	
Aspirin in ST-elevation myocardial infarction	42 to save a life
Warfarin in atrial fibrillation	25 to prevent a stroke
Steroids in chronic obstructive pulmonary disease (COPD)	10 to prevent treatment failure
Defibrillation in cardiac arrest	2.5 to save a life
Buprenorphine in opioid use disorder	2 to retain in treatment

https://clincalc.com/Stats/NNT.aspx

Opioid Overdose Deaths by Race/Ethnicity:
White, Non-Hispanic & Hispanic & Other 2000-2020



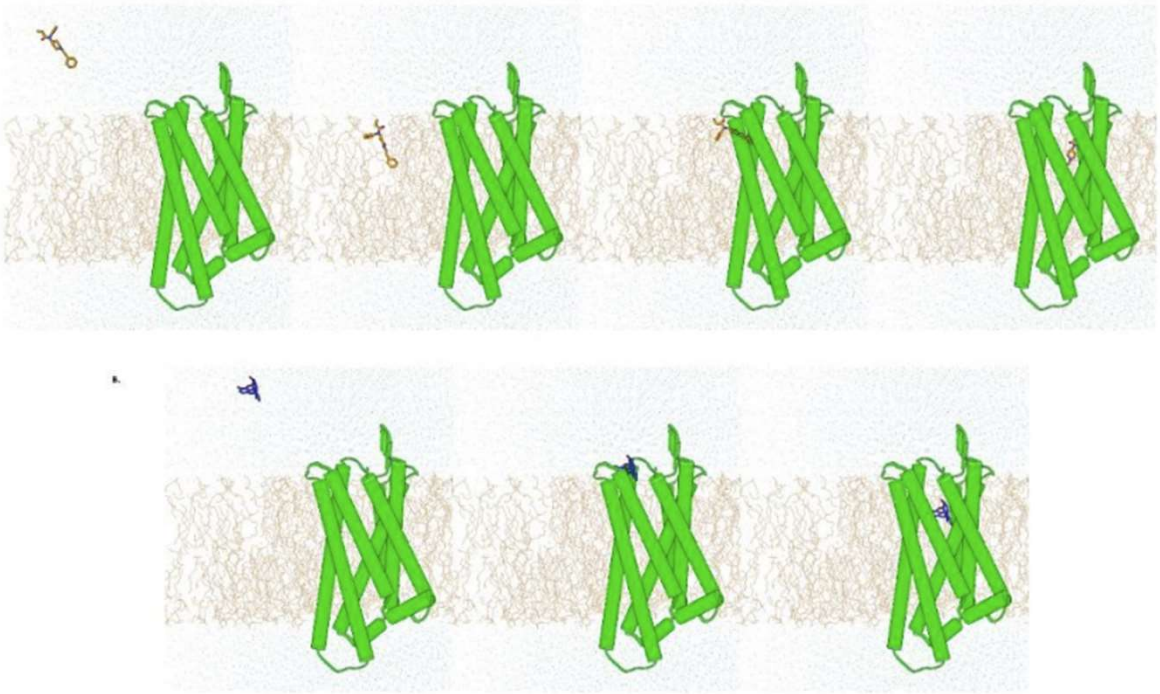
Source: Kaiser Family Foundation's State Health Facts

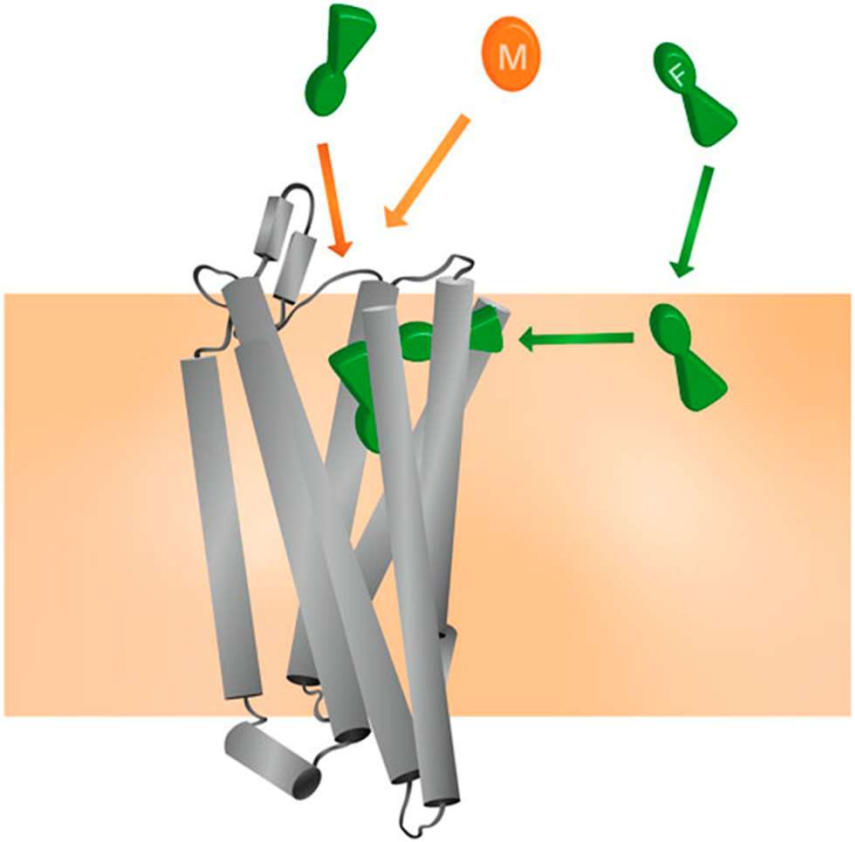
What about Fentanyl?

Pharmacology

- 25 x potency of heroin—narrow “therapeutic” window
- Lipophilicity high volume of distribution (3 compartment model)
  - Rapid crossing of blood brain barrier
  - Rapidly distributed to adipose tissue/muscles, slowly returns
- Pharmacokinetics
  - Distribution time 1.7 min, redistribution 13 min
  - Elimination half life: 3-5 hours
  - Short half life after bolus, long half life after ongoing administration (slowly leaving fat stores)
- Hepatic metabolism (CYP3A4) to inactive metabolite
- Utox pos for mean 7.3 days in treatment program

Lipid binding and accumulation



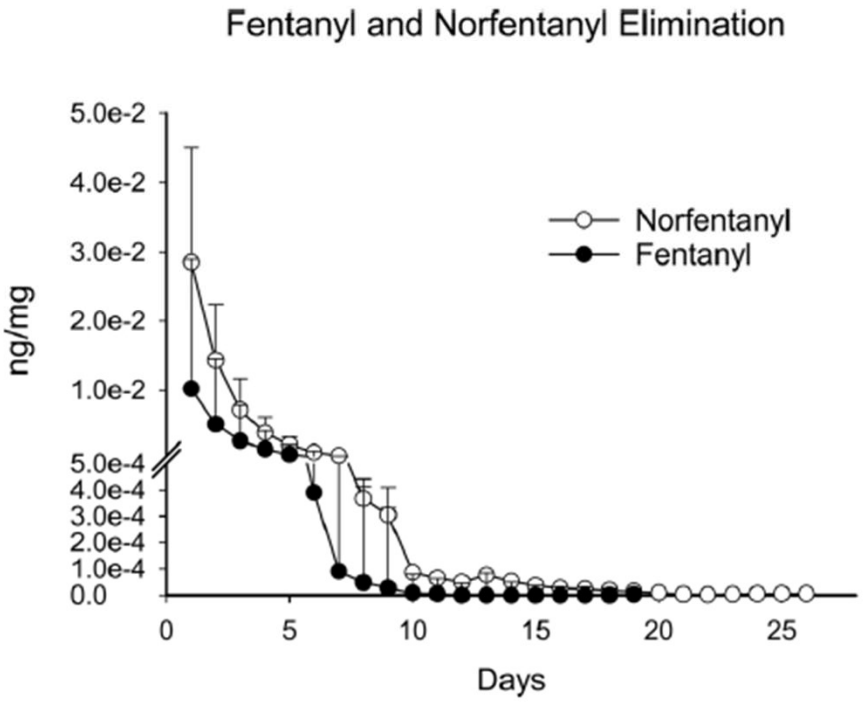


Kelly, E., Sutcliffe, K., Cavallo, D., Ramos-Gonzalez, N., Alhosan, N. and Henderson, G., 2021. The anomalous pharmacology of fentanyl. *British Journal of Pharmacology*.

Fentanyl

- **Fast onset and potent:**
  Fentanyl rapidly crosses the blood-brain barrier
- **Short acting:**
  Fentanyl levels rapidly decline due to redistribution to body fat
- **long acting:**
  With chronic use sequestered fentanyl accumulates and establishes equilibrium with plasma

Drug and Alcohol Dependence 214 (2020) 108147



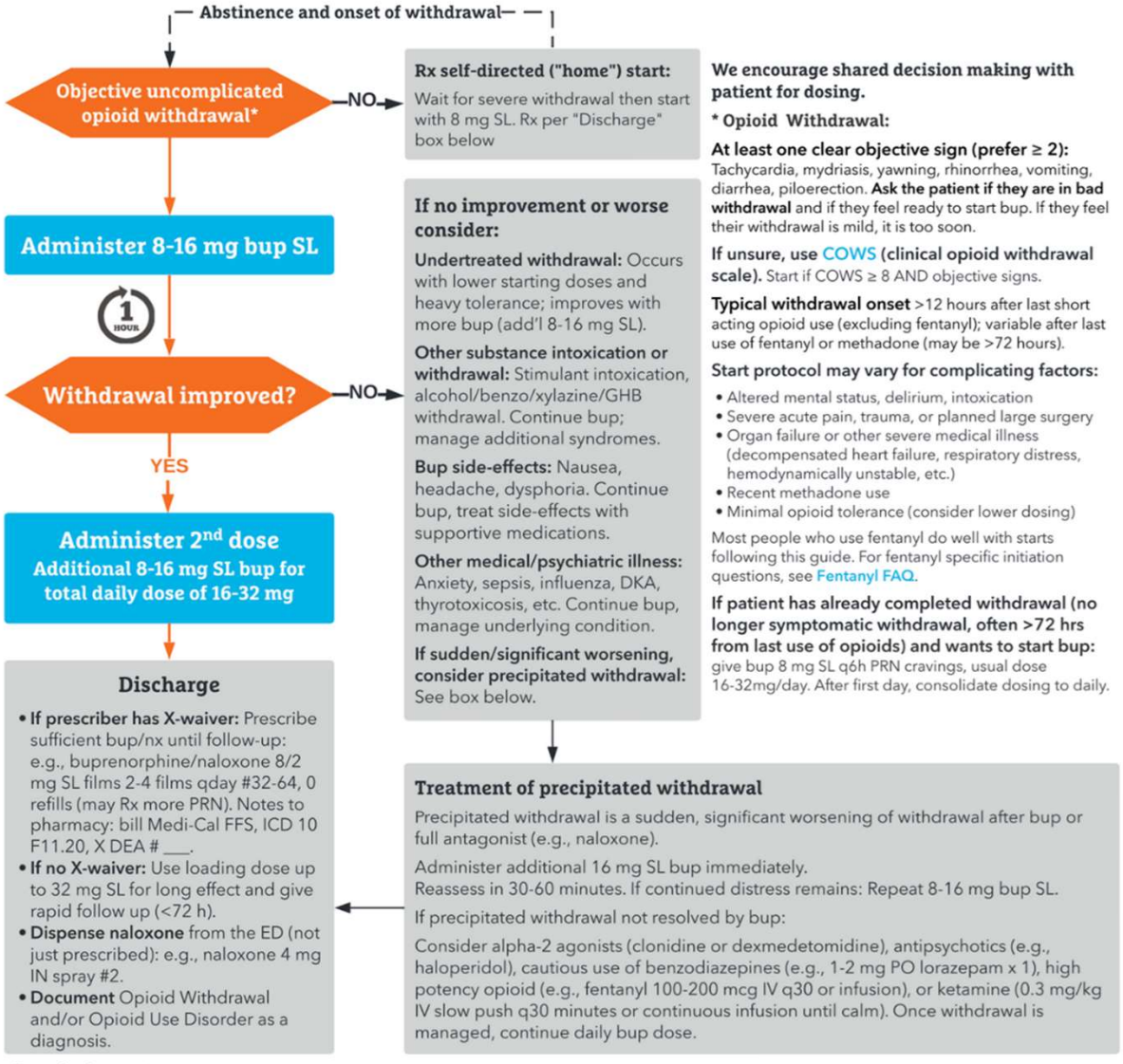
Huhn, A.S., Hobelmann, J.G., Oyler, G.A. and Strain, E.C., 2020. Protracted renal clearance of fentanyl in persons with opioid use disorder. *Drug and alcohol dependence*, *214*, p.108147.

Good News:

Medication for Addiction Treatment (MAT) Works

Buprenorphine (Bup) Emergency Department Quick Start

View or download on your device



Identify withdrawal & Rule-Out Contraindications

*** Opioid Withdrawal:**

At least one clear objective sign (prefer ≥ 2): Tachycardia, mydriasis, yawning, rhinorrhea, vomiting, diarrhea, piloerection. **Ask the patient if they are in bad withdrawal** and if they feel ready to start bup. If they feel their withdrawal is mild, it is too soon.

If unsure, use COWS (clinical opioid withdrawal scale). Start if COWS ≥ 8 AND objective signs.

Typical withdrawal onset >12 hours after last short acting opioid use (excluding fentanyl); variable after last use of fentanyl or methadone (may be >72 hours).

Start protocol may vary for complicating factors:

- Altered mental status, delirium, intoxication
- Severe acute pain, trauma, or planned large surgery
- Organ failure or other severe medical illness (decompensated heart failure, respiratory distress, hemodynamically unstable, etc.)
- Recent methadone use
- Minimal opioid tolerance (consider lower dosing)

Most people who use fentanyl do well with starts following this guide. For fentanyl specific initiation questions, see Fentanyl FAQ.

Wesson & Ling, J Psychoactive Drugs. 2003 Apr-Jun;35(2):253-9

COWS Clinical Opiate Withdrawal Scale

Resting Pulse Rate: _____beats/minute *Measured after patient is sitting or lying for one minute* 0 Pulse rate 80 or below 1 Pulse rate 81-100 2 Pulse rate 101-120 4 Pulse rate greater than 120	GI Upset: *over last 1/2 hour* 0 No GI symptoms 1 Stomach cramps 2 Nausea or loose stool 3 Vomiting or diarrhea 5 Multiple episodes of diarrhea or vomiting
Sweating: *over past 1/2 hour not accounted for by room temperature or patient activity.* 0 No report of chills or flushing 1 Subjective report of chills or flushing 2 Flushed or observable moistness on face 3 Beads of sweat on brow or face 4 Sweat streaming off face	Tremor *observation of outstretched hands* 0 No tremor 1 Tremor can be felt, but not observed 2 Slight tremor observable 4 Gross tremor or muscle twitching
Restlessness *Observation during assessment* 0 Able to sit still 1 Reports difficulty sifting still, but is able to do so 3 Frequent shifting or extraneous movements of legs/arms 5 Unable to sit still for more than a few seconds	Yawning *Observation during assessment* 0 No yawning 1 Yawning once or twice during assessment 2 Yawning three or more times during assessment 4 Yawning several times/minute
Pupil size 0 Pupils pinned or normal size for room light 1 Pupils possibly larger than normal for room light 2 Pupils moderately dilated 5 Pupils so dilated that only the rim of the iris is visible	Anxiety or irritability 0 None 1 Patient reports increasing irritability or anxiousness 2 Patient obviously irritable anxious 4 Patient so irritable or anxious that participation in the assessment is difficult
Bone or Joint aches *If patient was having pain previously, only the additional component attributed to opiates withdrawal is scored* 0 Not present 1 Mild diffuse discomfort 2 Patient reports severe diffuse aching of joints/ muscles 4 Patient is rubbing joints or muscles and is unable to sit still because of discomfort	Gooseflesh skin 0 Skin is smooth 3 Piloerrection of skin can be felt or hairs standing up on arms 5 Prominent piloerrection
Runny nose or tearing *Not accounted for by cold symptoms or allergies* 0 Not present 1 Nasal stuffiness or unusually moist eyes 2 Nose running or tearing 4 Nose constantly running or tears streaming down cheeks	Total Score _____ The total score is the sum of all 11 items Initials of person completing Assessment:_____

Score: 5-12 mild; 13-24 moderate; 25-36 moderately severe; more than 36 = severe withdrawal

Fentanyl? Higher COWS + "Hard Signs"

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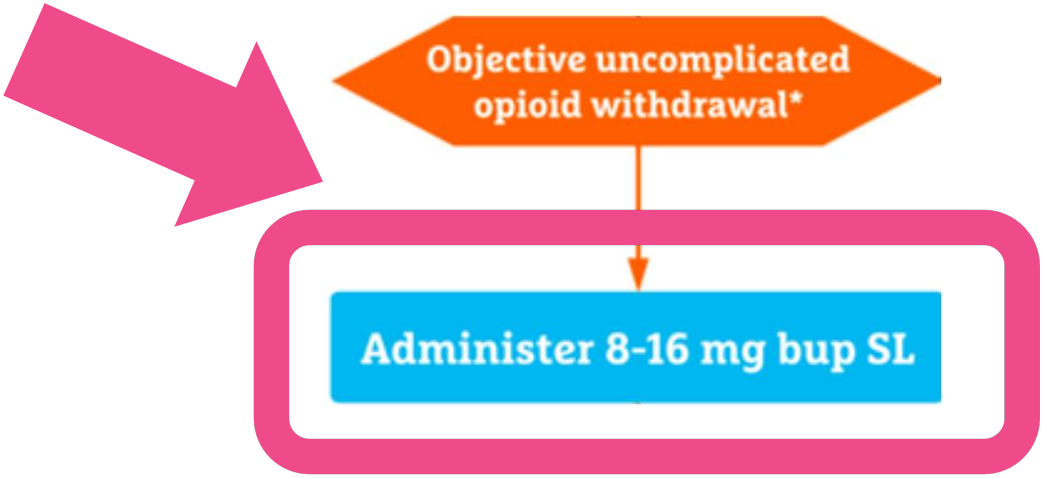
- Recent methadone use
- Minimal opioid tolerance (consider lower dosing)

Most people who use fentanyl do well with starts following this guide. For fentanyl specific initiation questions, see Fentanyl FAQ.

Include 2+ ***objective*** signs!

- Dilated pupils
- "Goose bumps"
- Vomiting
- Tachycardia
- Yawning
- Runny nose & eyes

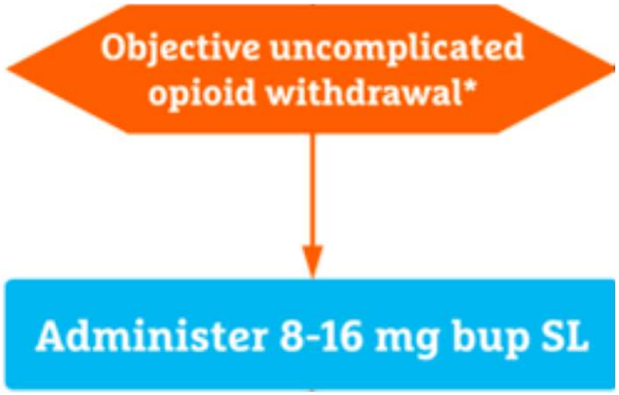
Patient in Moderate to Severe Withdrawal & Interested in Buprenorphine?



Buprenorphine is given as sublingual, *dissolvable* dose.

No PO for 15-20min!

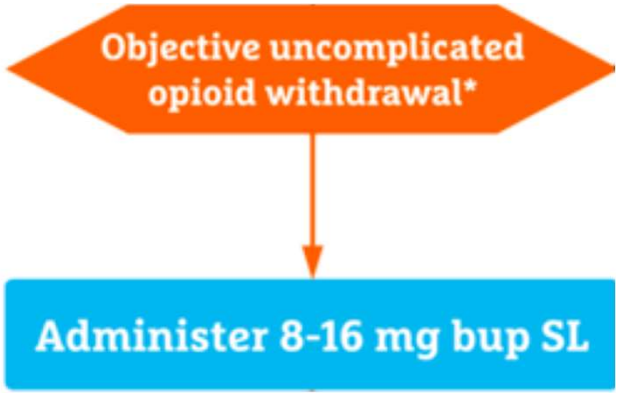
Patient in Moderate to Severe Withdrawal & Interested in Buprenorphine?



No methadone for 72+hrs

CAUTION: benzodiazepines, EtOH, other respiratory suppressants

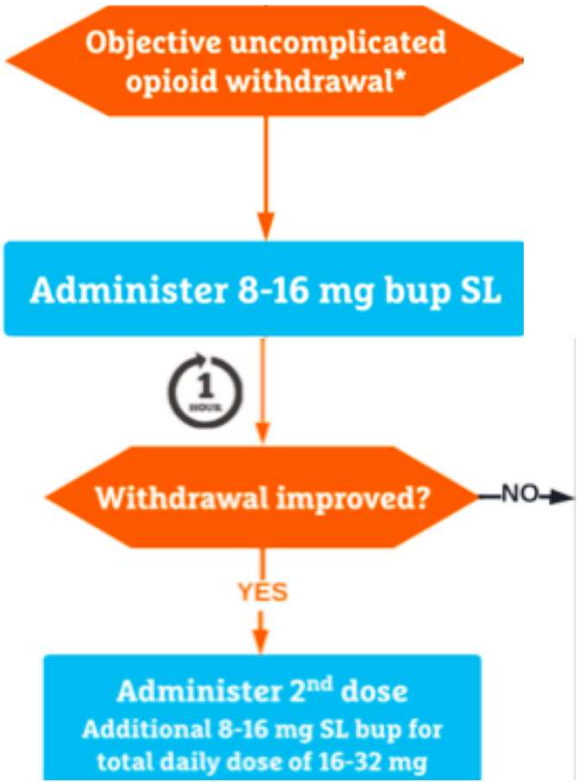
Patient in Moderate to Severe Withdrawal & Interested in Buprenorphine?



Typically start 8mg bup SL.

Fentanyl use may require higher dose, e.g., 16-32 mg.

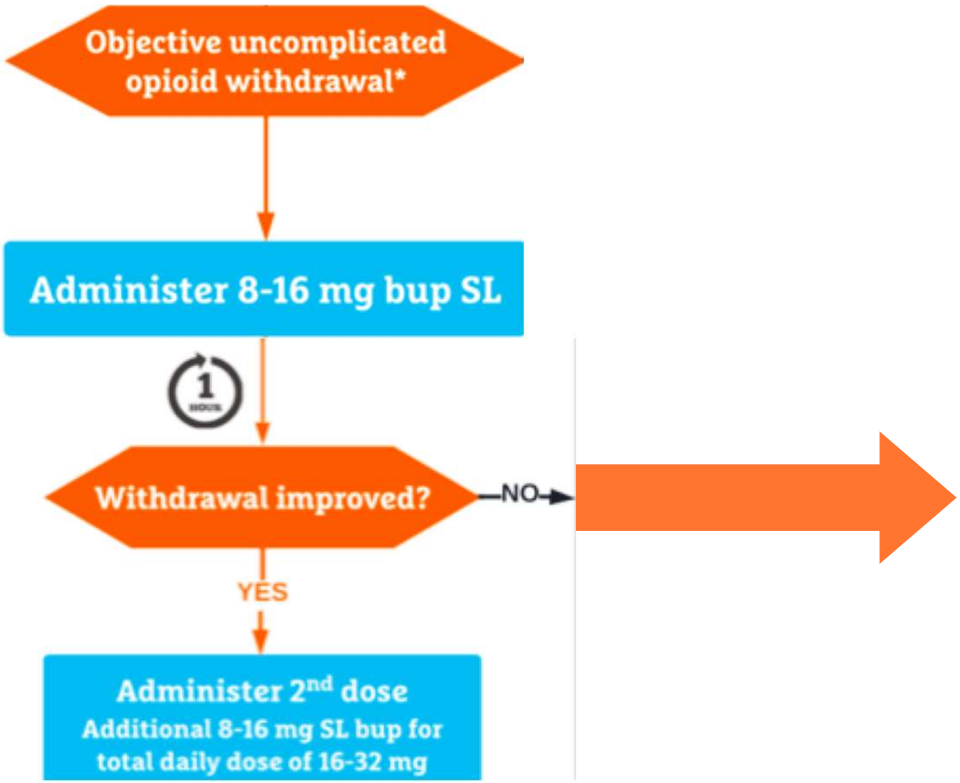
Wait 1 hour. Reassess.
Better? Give another dose.



Don't be afraid to repeat dose!
Fentanyl use may take more doses.

Note: *Most* patients will ***still*** do great with 16-32 mg total buprenorphine.

Wait 1 hour. Reassess.
Not better? Widen your ddx.



If no improvement or worse consider:

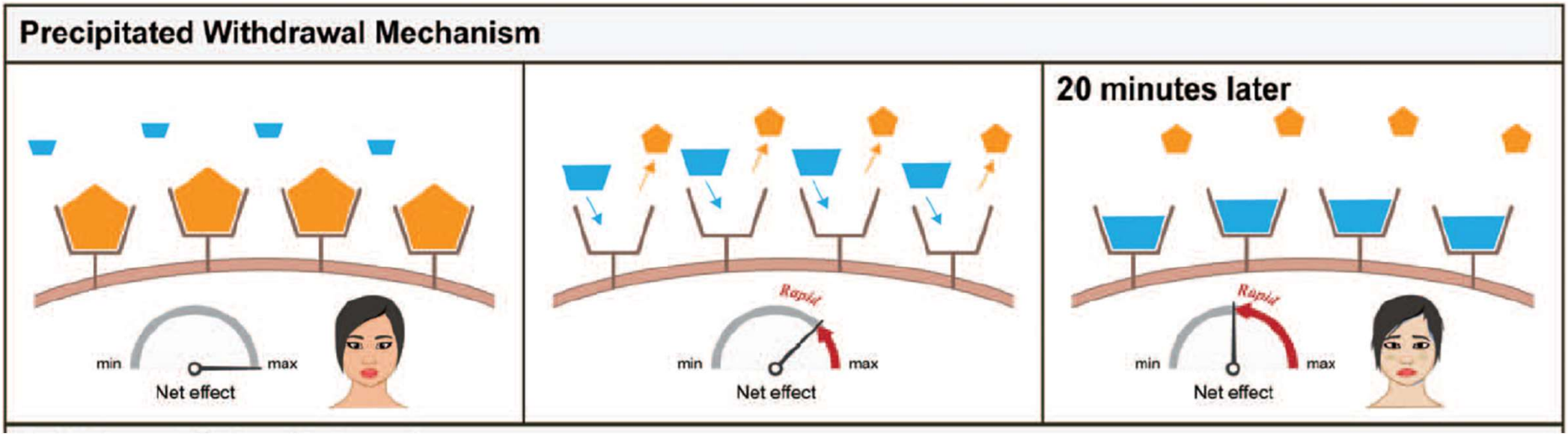
Undertreated withdrawal: Occurs with lower starting doses and heavy tolerance; improves with more bup (add'l 8-16 mg SL).

Other substance intoxication or withdrawal: Stimulant intoxication, alcohol/benzo/xylazine/GHB withdrawal. Continue bup; manage additional syndromes.

Bup side-effects: Nausea, headache, dysphoria. Continue bup, treat side-effects with supportive medications.

Other medical/psychiatric illness: Anxiety, sepsis, influenza, DKA, thyrotoxicosis, etc. Continue bup, manage underlying condition.

What's precipitated withdrawal again?



Undertreated Withdrawal

- Small bup doses given to pt with high tolerance → ongoing sxs
- Incomplete treatment of sxs
- As time goes on between doses, sxs get worse – from ***lack of enough*** bup, not ***because*** of it
- Can be *normal* part of the buprenorphine induction experience

Precipitated Withdrawal

- Very rare! (<1% in NIDA data)
- How? *"Too little bup too soon"*
- What? Rapid, *significant* & *sudden* worsening withdrawal sxs
- Painful, unpleasant, agitation, "excited delirium"
- Note: this is what happens *on purpose* when we give naloxone!

Why the hype?!

- A rough patient experience – patients talk to each other!
- A rough provider experience – do not want to lose trust!

We need to normalize the withdrawal experience for pts.

If you *do* precipitate withdrawal…

KEEP
CALM
AND
GIVE
BUP *…and more bup!*

Treatment of precipitated withdrawal

Precipitated withdrawal is a sudden, significant worsening of withdrawal after bup or full antagonist (e.g., naloxone).

Administer additional 16 mg SL bup immediately.
Reassess in 30-60 minutes. If continued distress remains: Repeat 8-16 mg bup SL.

If precipitated withdrawal not resolved by bup:

Consider alpha-2 agonists (clonidine or dexmedetomidine), antipsychotics (e.g., haloperidol), cautious use of benzodiazepines (e.g., 1-2 mg PO lorazepam x 1), high potency opioid (e.g., fentanyl 100-200 mcg IV q30 or infusion), or ketamine (0.3 mg/kg IV slow push q30 minutes or continuous infusion until calm). Once withdrawal is managed, continue daily bup dose.

For Discharge:

Maintenance Treatment
16 mg Bup SL/day
Titrate to suppress cravings

Usual dose 16-32 mg/day

Discharge

- **If prescriber has X-waiver:** Prescribe sufficient bup/nx until follow-up: e.g., buprenorphine/naloxone 8/2 mg SL films 2-4 films qday #32-64, 0 refills (may Rx more PRN). Notes to pharmacy: bill Medi-Cal FFS, ICD 10 F11.20, X DEA # ___.
- **If no X-waiver:** Use loading dose up to 32 mg SL for long effect and give rapid follow up (<72 h).
- **Dispense naloxone** from the ED (not just prescribed): e.g., naloxone 4 mg IN spray #2.
- **Document** Opioid Withdrawal and/or Opioid Use Disorder as a diagnosis.

High dose is safe

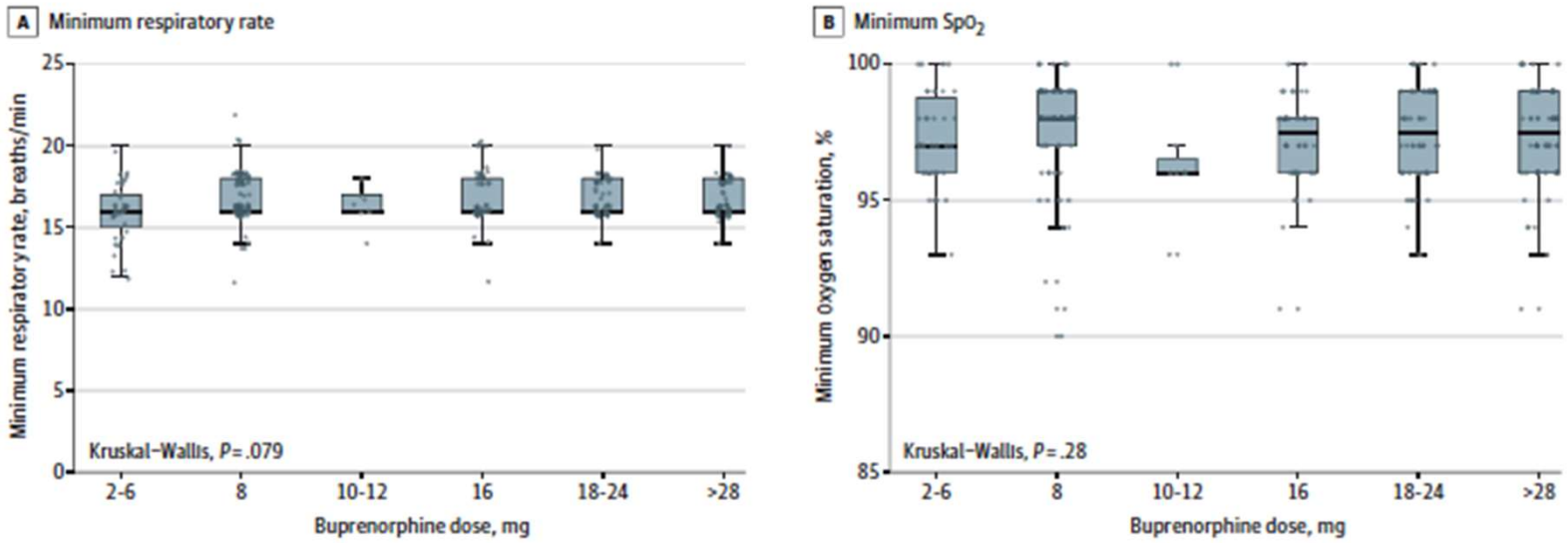
JAMA Network | Open

Original Investigation | Substance Use and Addiction

High-Dose Buprenorphine Induction in the Emergency Department for Treatment of Opioid Use Disorder

Andrew A. Herring, MD; Aidan A. Vosooghi, MS; Joshua Luftig, PA; Erik S. Anderson, MD; Xiwen Zhao, MS; James Dziura, PhD; Kathryn F. Hawk, MD, MHS; Ryan P. McCormack, MD, MS; Andrew Saxon, MD; Gail D'Onofrio, MD, MS

Figure 2. Minimum Respiratory Rate and Oxygen Saturation (SpO_2) Following Initial Dose by Buprenorphine Dose



Boxes correspond to 25th and 75th percentiles, with lines in boxes denoting medians. Dots denote outliers. Error bars denote 95% CIs. Kruskal-Wallis test compares distributions of respiratory rate and oxygen saturation across buprenorphine dose categories.

-ing the X-waiver!

As of Jan 1, 2023, an X-waiver is no longer required by federal law. Buprenorphine for medication for opioid use disorder no longer requires an X-waivered prescriber.

For Discharge:

Maintenance Treatment
16 mg Bup SL/day
Titrate to suppress cravings

Usual dose 16-32 mg/day

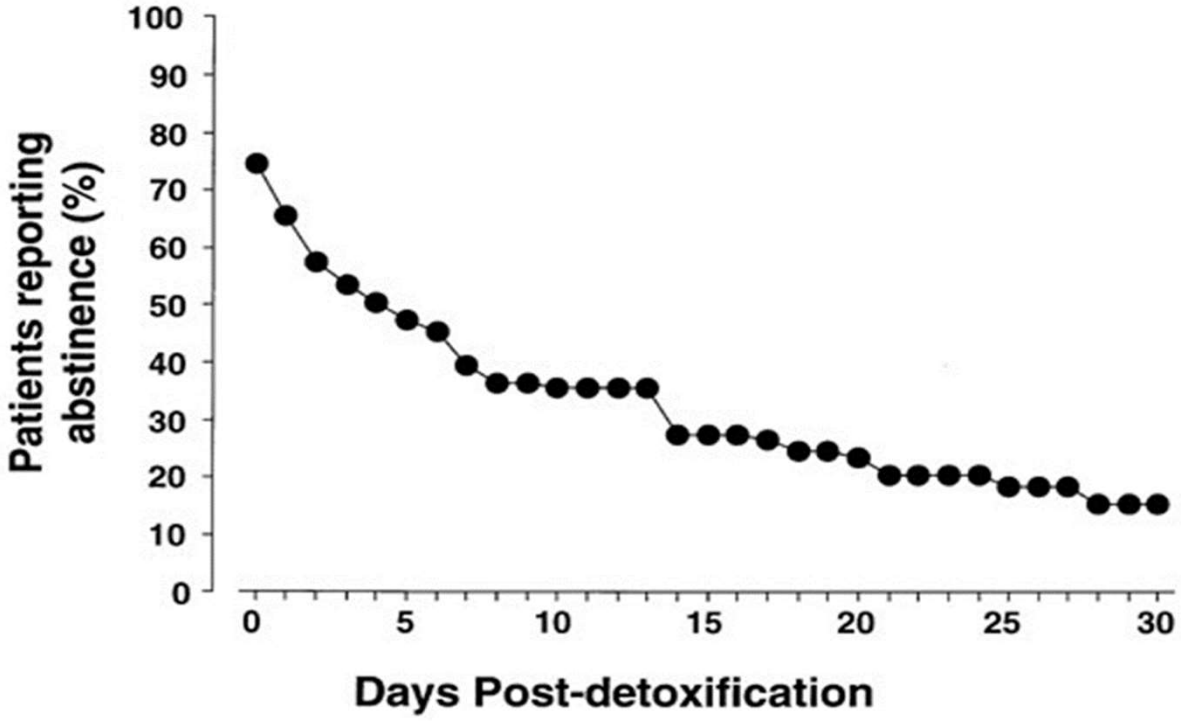
Prescribe sufficient quantity to bridge to outpatient care
(recommend 14 days)

Example Prescription:

Buprenorphine/Naloxone 8mg/2mg SL films, 2-4 films Q day, #32-64, 0 refills

Note to Pharmacy: "ICD10 F11.20" (ensures Rx gets filled correctly!)

Detox Doesn't Last



Chutuape, M et al. One-, three-, and six-month outcomes after brief inpatient opioid detoxification. The American Journal of Drug and Alcohol Abuse. Vol 27:1, 2001.

Patients can
self-start on bup!

Studies show pt's self-rating for withdrawal ≥ COWS.

Instructions mimic hospital start.

Safe, effective option.

CA BRIDGE

Buprenorphine Self-Start

Guidance for patients starting buprenorphine outside of hospitals or clinics

1. Plan to take a day off and have a place to rest.
2. Stop using and wait until you feel very sick from withdrawals (at least 12 hours is best, if using fentanyl it may take a few days).
3. Dose one or two 8mg tablets or strips UNDER your tongue (total dose of 8-16mg).
4. Repeat dose (another 8mg-16mg) in an hour to feel well.
5. The next day, take 16-32mg (2-4 tablets or films) at one time.

If you have started bup before:

- If it went well, that's great! Just do that again.
- If it was difficult, talk with your care team to figure out what happened and find ways to make it better this time. You may need a different dosing plan than what is listed here.

If you have never started bup before:

- Gather your support team and if possible take a "day off."
- You are going to want space to rest. Don't drive.
- Using cocaine, meth, alcohol or pills makes starting bup harder, and mixing in alcohol or benzos can be dangerous.

Place dose under your tongue (sublingual).

If you have a light habit: *(For example, 5 "Norco 10's" a day)*

- Consider a low dose: start with 4mg and stop at 8mg total.
- **WARNING:** Withdrawal will continue if you don't take enough bup.

If you have a heavy habit: *(For example, injecting 2g heroin a day or smoking 1g fentanyl a day)*

- Consider a high dose: start with a first dose of 16mg.
- For most people, the effects of bup max out at around 24-32mg.
- **WARNING:** Too much bup can make you feel sick and sleepy.

Not going well? Have questions? Contact your Navigator for help!

Call or text your Navigator for help at _____

3.28.22

CA Bridge Impact: To-Date

208,596

Patients seen for substance use disorders

156,599

Patients identified with opioid use disorder

71,445

MAT was prescribed or administered

129,120

Naloxone toolkits ordered by hospitals

From 2019 through now, 200 hospitals implemented the CA Bridge model, helping thousands of patients get treatment.

French Field Experience with Buprenorphine

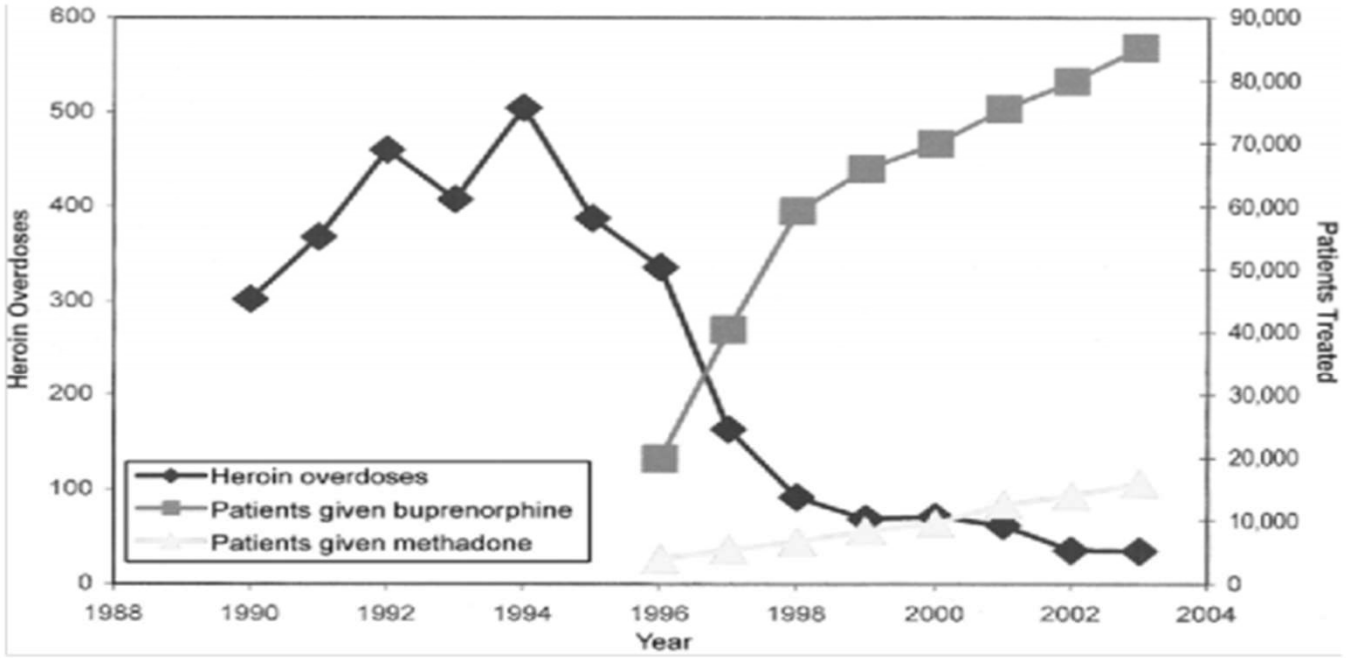
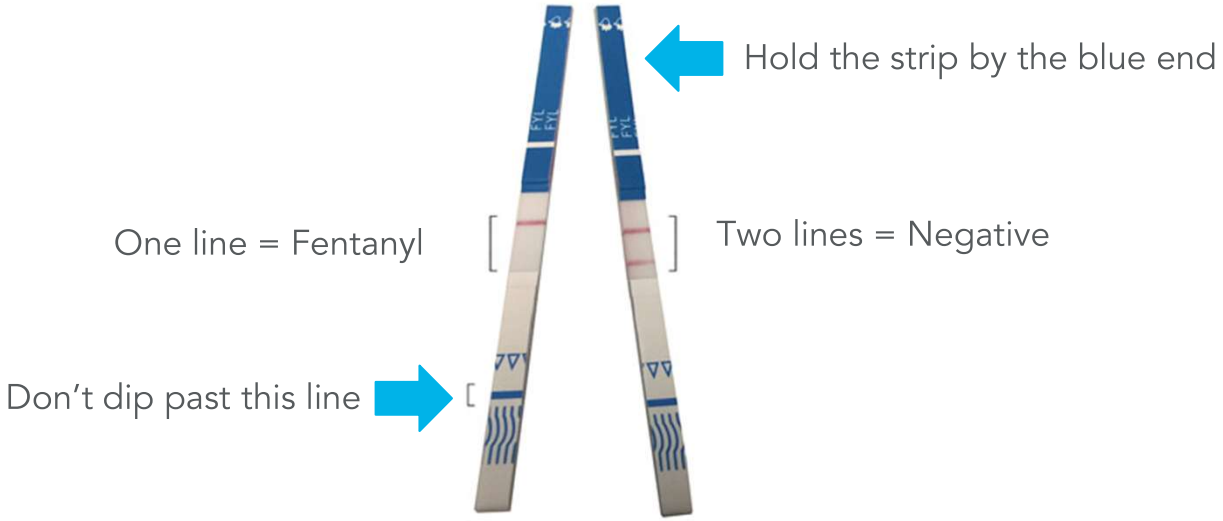


Figure 2. From: Carrieri, Maria Patrizia, et al. "Buprenorphine use: the international experience." Clinical Infectious Diseases 43.Supplement 4 (2006): S197-S215.

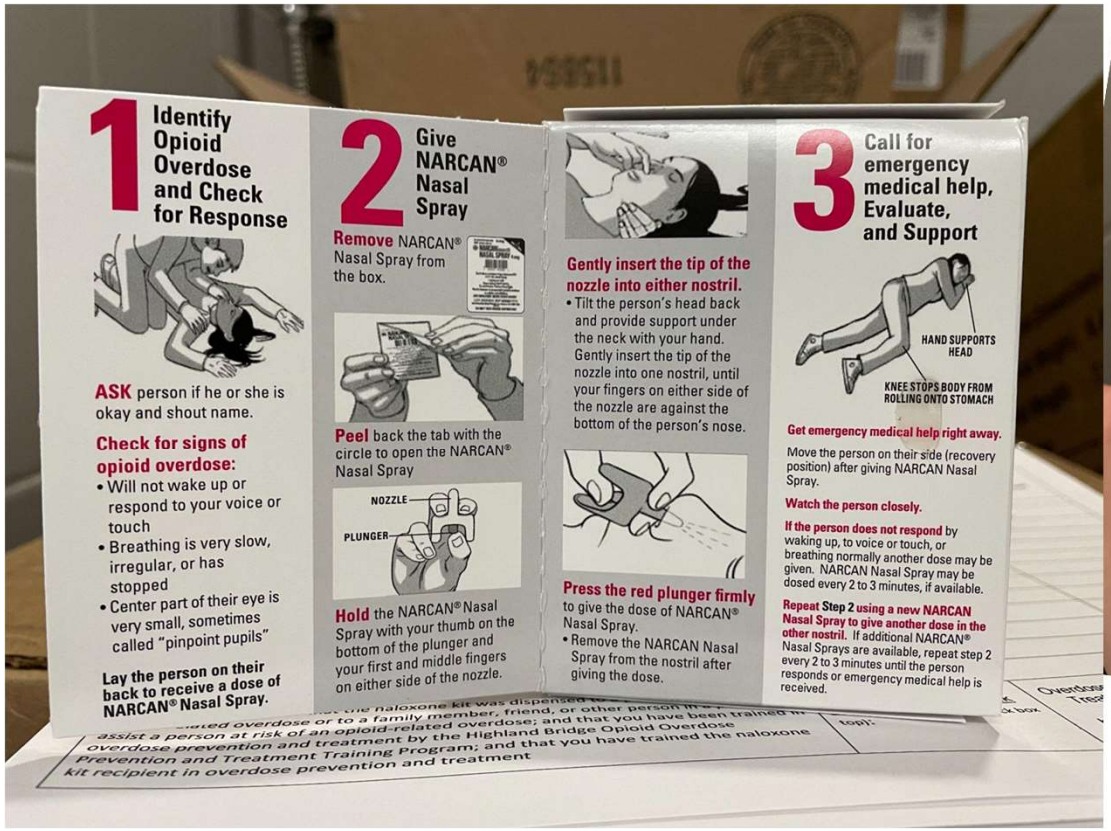
Auriacombe M, Fatséas M, Dubernet J, Daulouède JP, Tignol J. French field experience with buprenorphine. *Am J Addict*. 2004; 13:S17-S28. doi: 10.1080/10550490490440780.

Harm Reduction:
Fentanyl Test Strips



- *Help identify unintentional fentanyl in drugs*
- *Caution: High concentrations of meth can cause <u>false positive in older generation of</u>*

Harm Reduction:
Naloxone

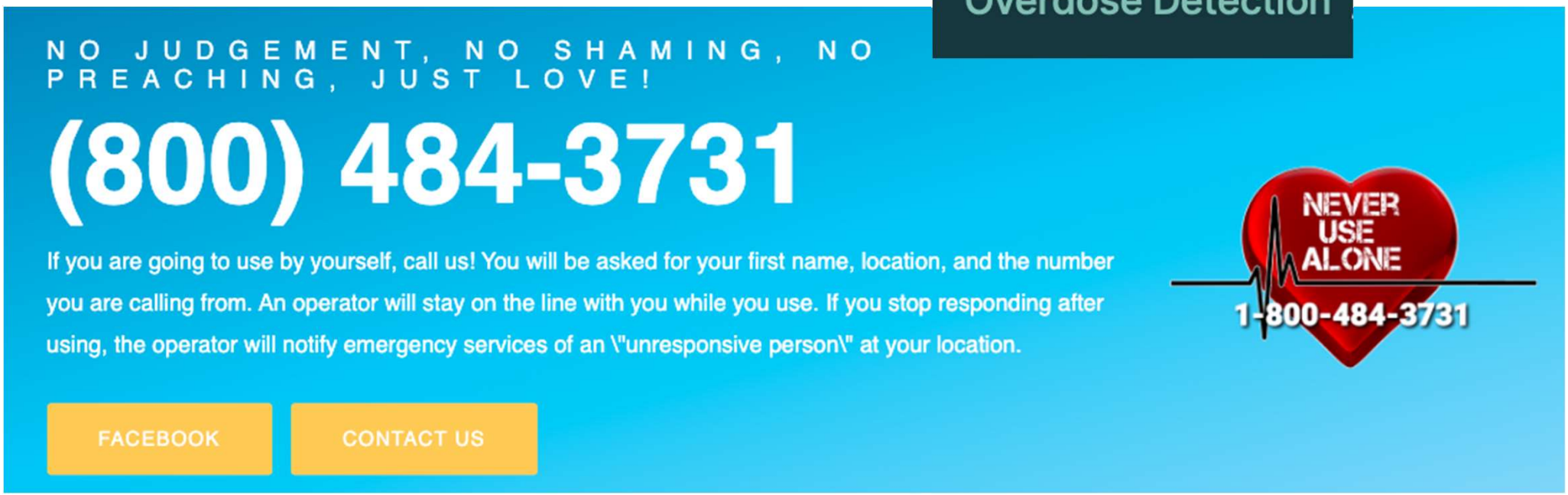


But I heard—first responders overdose

- Airborne
    - "At the highest airborne concentration encountered by [first responders], ***an unprotected individual would require nearly 200 minutes of exposure*** to reach a dose of 100 mcg of fentanyl.
    - The vapor pressure of fentanyl is very low (4.6 x 10-6 Pa) suggesting that evaporation of standing product into a gaseous phase is ***not a practical concern***"
- Transdermal
    - "If bilateral palmar surfaces were ***covered with fentanyl patches***, it would take approximately 14 minutes to receive 100 mcg of fentanyl.

Moss MJ, Warrick BJ, Nelson LS, McKay CA, Dubé PA, Gosselin S, Palmer RB, Stolbach AI. ***ACMT and AACT Position Statement: Preventing Occupational Fentanyl and Fentanyl Analog Exposure to Emergency Responders***. J Med Toxicol. 2017

Harm Reduction:
Never Use Alone



www.neverusealone.com, www.brave.coop

Harm Reduction:
Safe Injection Practices

- If possible, don't inject! Choose smoking, snorting, ingesting.
- Clean first with alcohol swabs
- Do not reuse or share needles or syringes
  - Use *sterile* equipment
  - Give info for syringe exchange programs
- Public health screening – HIV, HepC
- Check out Harm Reduction Coalition for more!

CA BRIDGE

June 2022

Guide to Naloxone Distribution

Numbers of naloxone kits ordered by hospitals

129,120

as of Dec 2022

Action Items: New Standard of Care

Update Your Practice to a NEW Standard of Care

- Give bup for OUD and withdrawal
- Find friends in your community

- Bring a harm reduction mindset to your work
- Be nice to people who use drugs
- MATE Act: all DEA prescribers will need 8 hrs of addiction education

Action Items: New Standard of Care

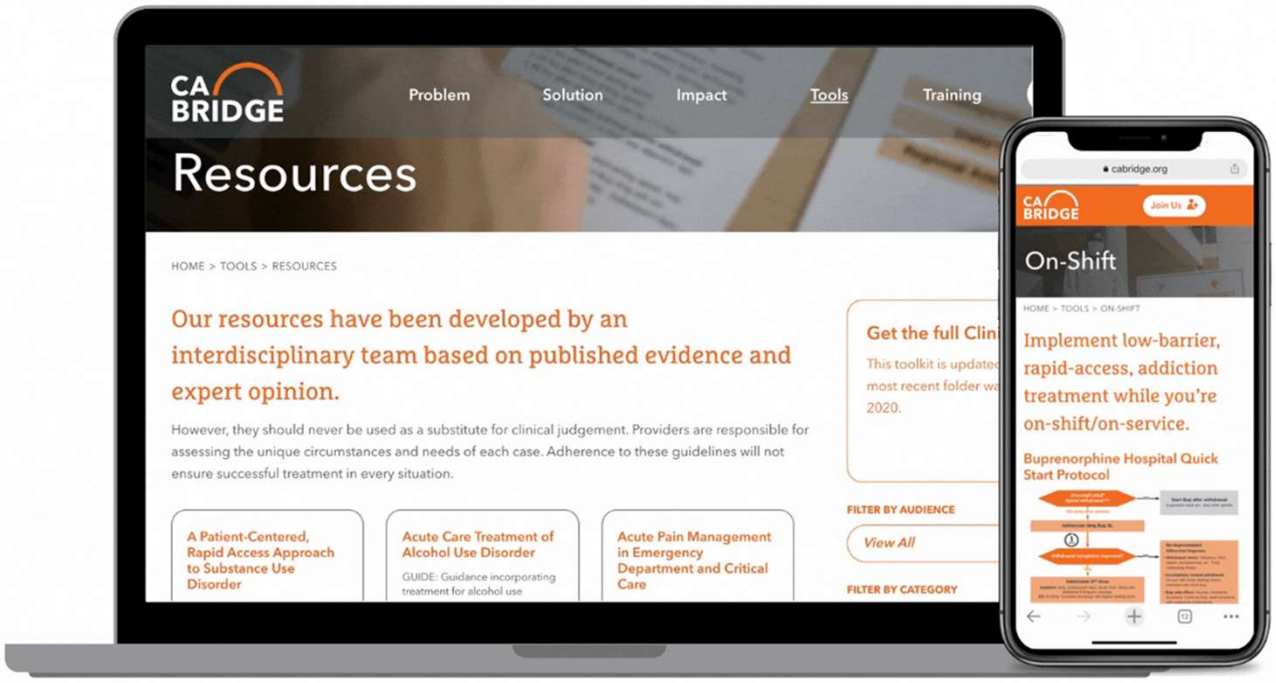
Be a Changemaker and a Leader - Save More Lives

- Join us as PAs leading the charge in your clinic
- Model language surrounding people who use drugs

- Educate others in your practice
- Develop an improved system of care for people who use drugs
  - Signage encouraging pts to ask for help
  - Normalize Bup rx for OUD
  - Easy access to naloxone
  - Linkage to care
- MAINSTREAM ADDICTION TREATMENT!

Q&A

CABridge.org Resources



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Request Technical Assistance

CA Bridge provides technical assistance to any hospital or health system seeking support to educate clinicians and health systems on medication for addiction treatment (MAT). Submit a formal request here.

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