



Bupe FIRST: Addiction Care Beyond the Clinic

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Disclosure

No financial conflicts of interest to disclose.

Objectives

Recognize	Recognize opioid use disorder as a chronic medical condition and identify its implications for prehospital care.
Identify	Identify medications for opioid use disorder and explain the mechanism of action of buprenorphine in the management of opioid withdrawal.
Apply	Apply prehospital buprenorphine protocols by assessing withdrawal severity using the Clinical Opiate Withdrawal Scale (COWS), identifying appropriate patients, and managing naloxone- or abstinence-induced withdrawal.
Describe	Describe patient outcomes associated with EMS-initiated buprenorphine, including withdrawal symptom improvement, engagement in follow-up care, and changes in EMS utilization.

Is this an
Emergency?

10% Mortality

VS

STEMI-11.5%

One-Year Mortality of Opioid Overdose Victims Who Received Naloxone by Emergency Medical Services

Weiner SG, Baker O, Bernson D, Schuur JD/Brigham and Women's Hospital, Boston, MA; Massachusetts Department of Public Health, Boston, MA

Death records indicated that 6.5% (n1/4787) died the same day as the documented naloxone administration, 9.3% (n1/41,132) died within one year and 84.3% (n1/410,273) were alive at one year.

Excluding those who died the same day as naloxone administration, **9.9% (1,132/11,405) died within one year.**

Unintentional Overdose in New Jersey



Total annual overdose deaths. Fewer than 10 deaths are not shown for privacy reasons.

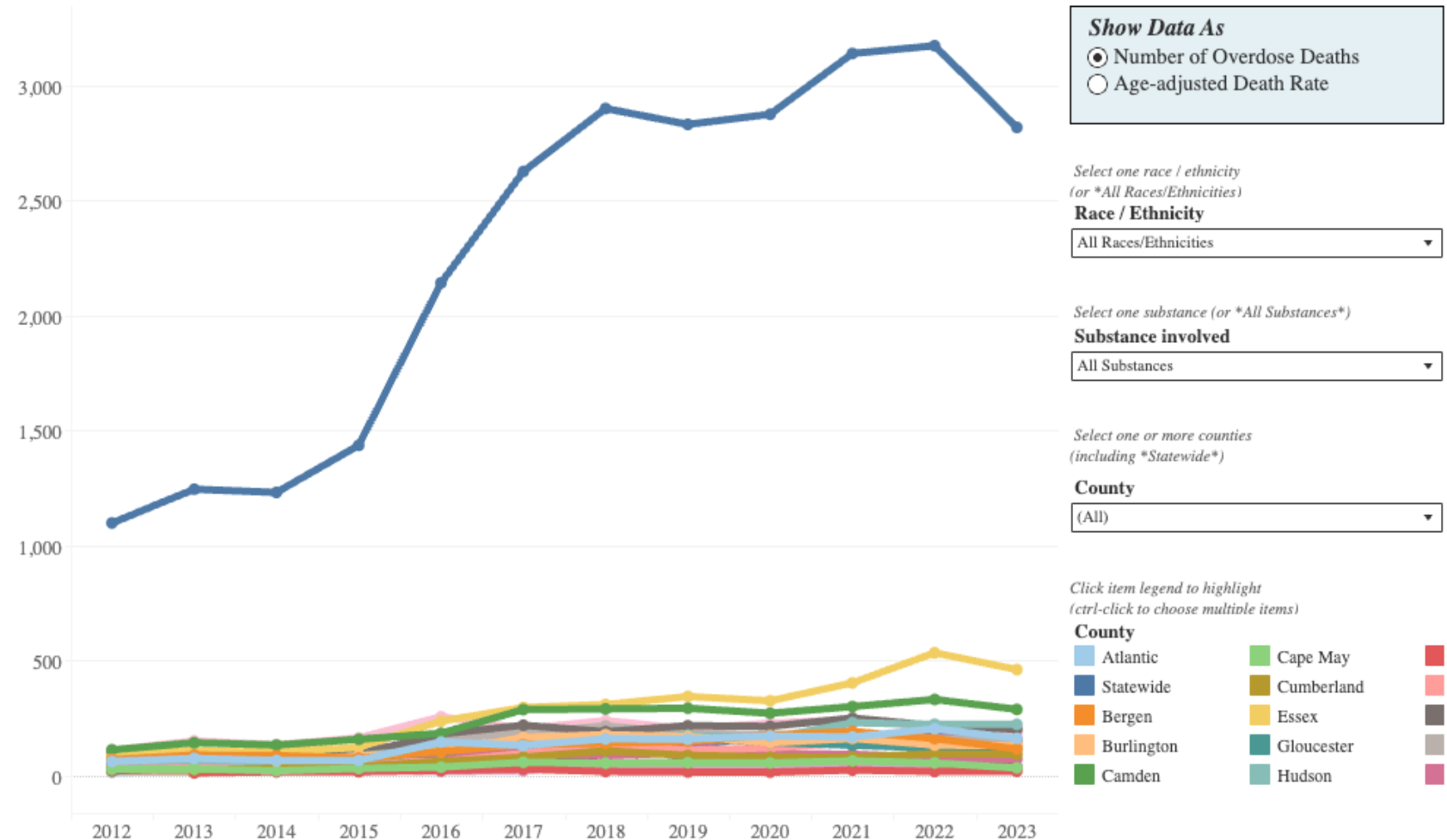
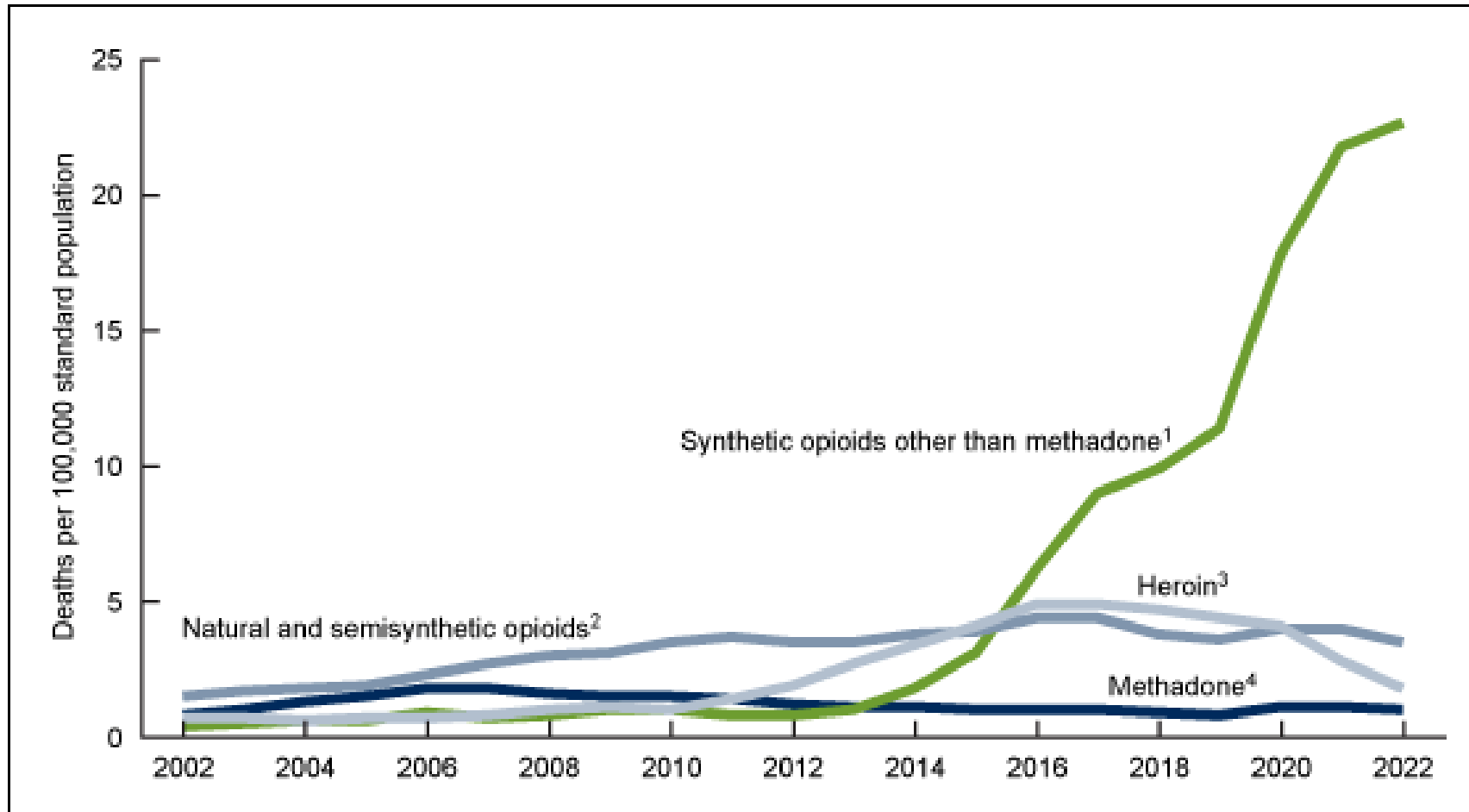


Figure 4. Age-adjusted rate of drug overdose deaths involving opioids, by type of opioid: United States, 2002–2022



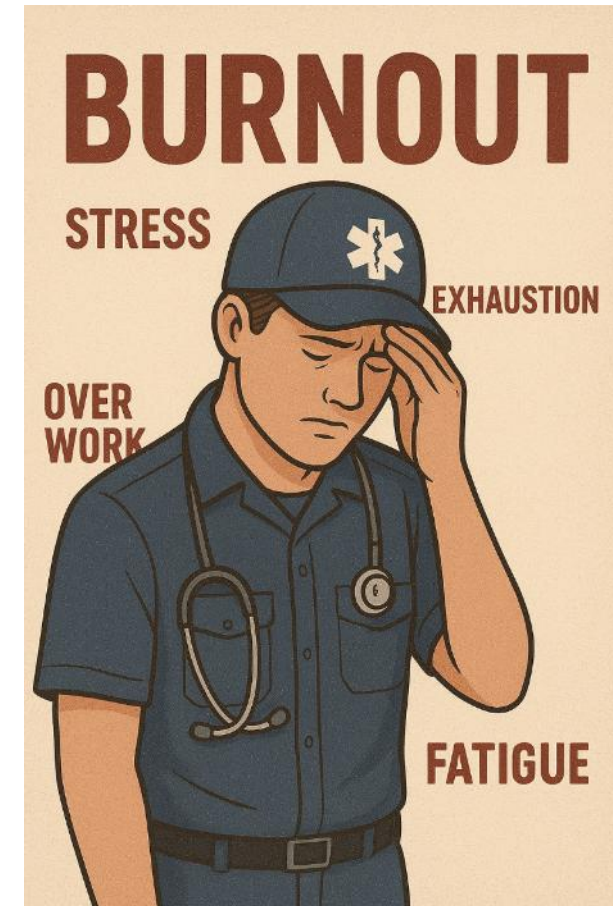
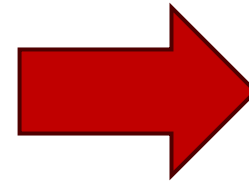
SOURCE: National Center for Health Statistics, National Vital Statistics System, mortality data file.

Where We Work: Camden, NJ



What It Was Like

Complaint
Shortness of Breath
Drug Overdose
Drug Overdose
Drug Overdose
Alcohol Intoxication
Suicidal
Drug Overdose
Drug Overdose
Drug Overdose
Dialysis Related
Drug Overdose
Epistaxis
Groin Pain
Abdominal Pain; Shoulder Pain



The Creation of Bupe FIRST

In 2019, Cooper University Health Care created Bupe FIRST (Buprenorphine Field-Initiated ReScue Treatment by EMS), a first-in-the-nation program to equip ambulances with buprenorphine.

We aimed to rapidly relieve withdrawal symptoms and improve linkage to addiction treatment among individuals post-naloxone administration.

Bupe FIRST has since spread across New Jersey, and EMS teams throughout the United States have since launched similar programs equipping paramedic teams with buprenorphine.



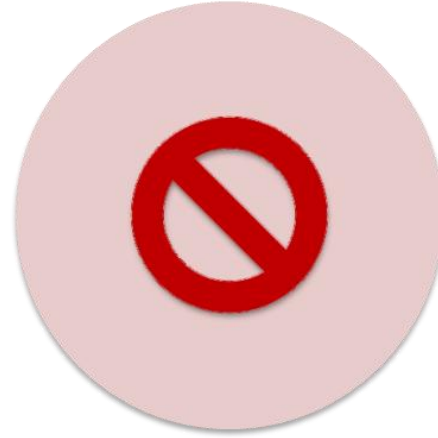
How It Used to Be



What We Know Now



CHRONIC BRAIN DISEASE



CAN BE TREATED

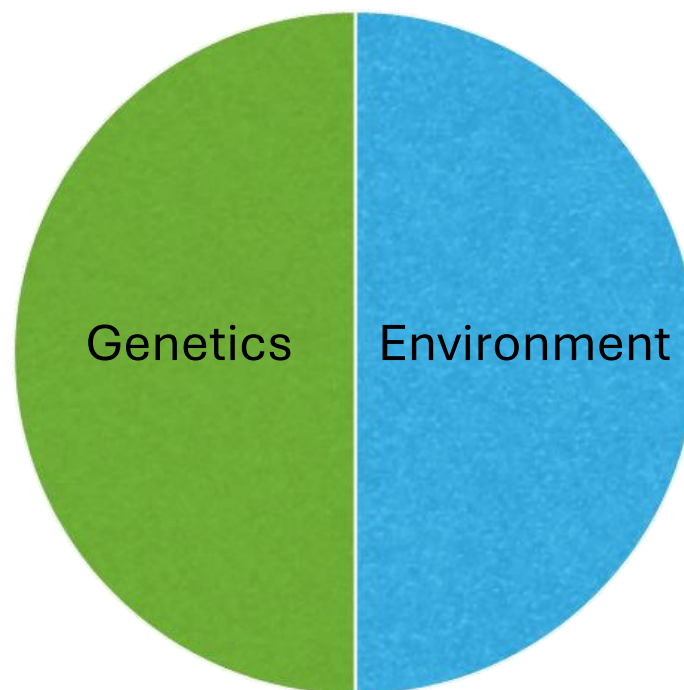
Vulnerability to SUDs

Biochemical

- opioid receptors
- dopamine
- other transmitters
- intracellular signals

Behavioral

- novelty seeking
- harm avoidance
- impulsivity
- psychiatric disorders



Social influence

- parents
- siblings
- friends
- Adverse Childhood Experiences
- psychiatric disorders
- stressors
- lack of positive experiences

Availability

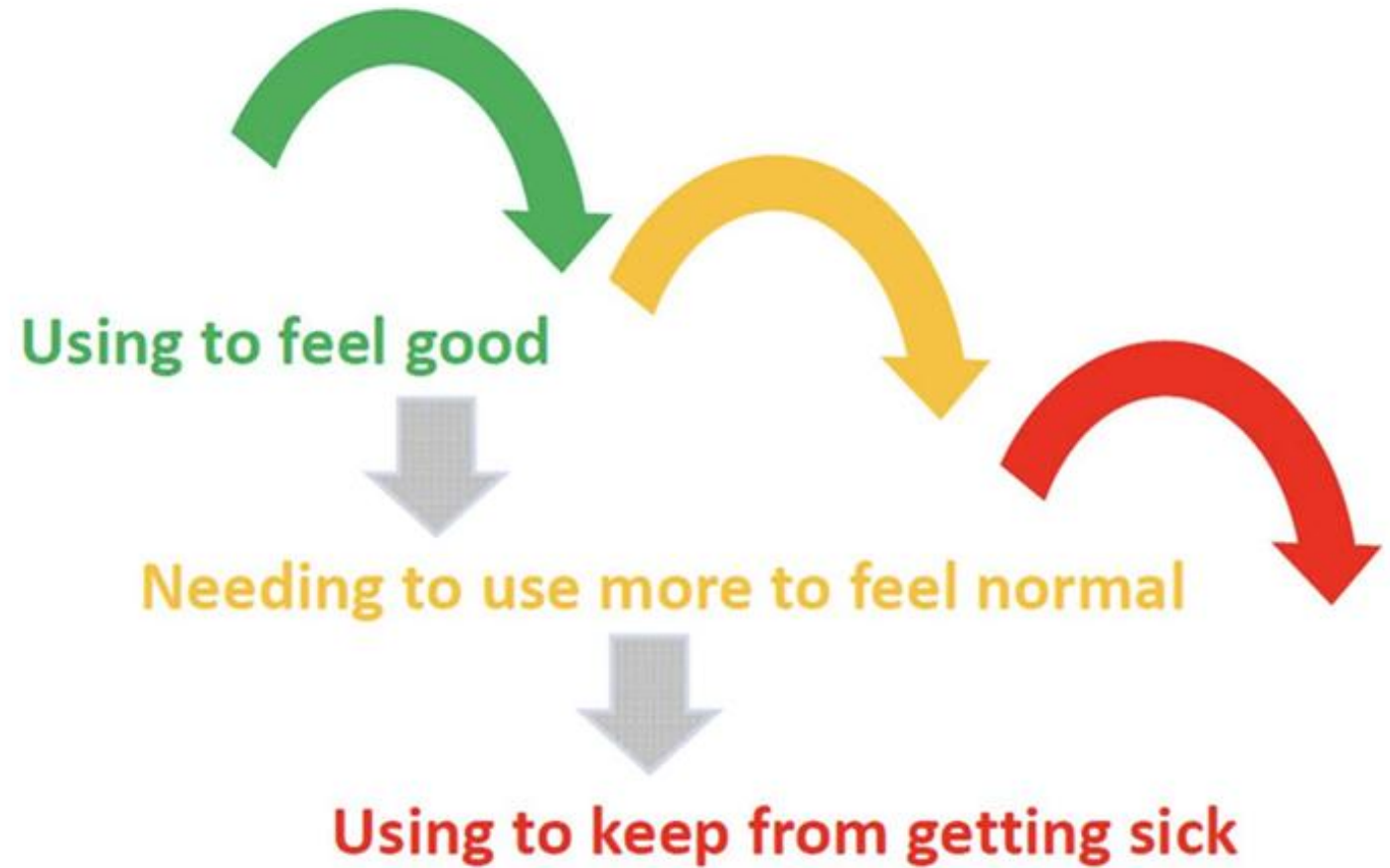
- illicit sources
- prescription
- family and friends

Anokhin et al., 2015
Milivojevic et al., 2012
Reed et al., 2014
Volkow et al., 2016

What is OUD?

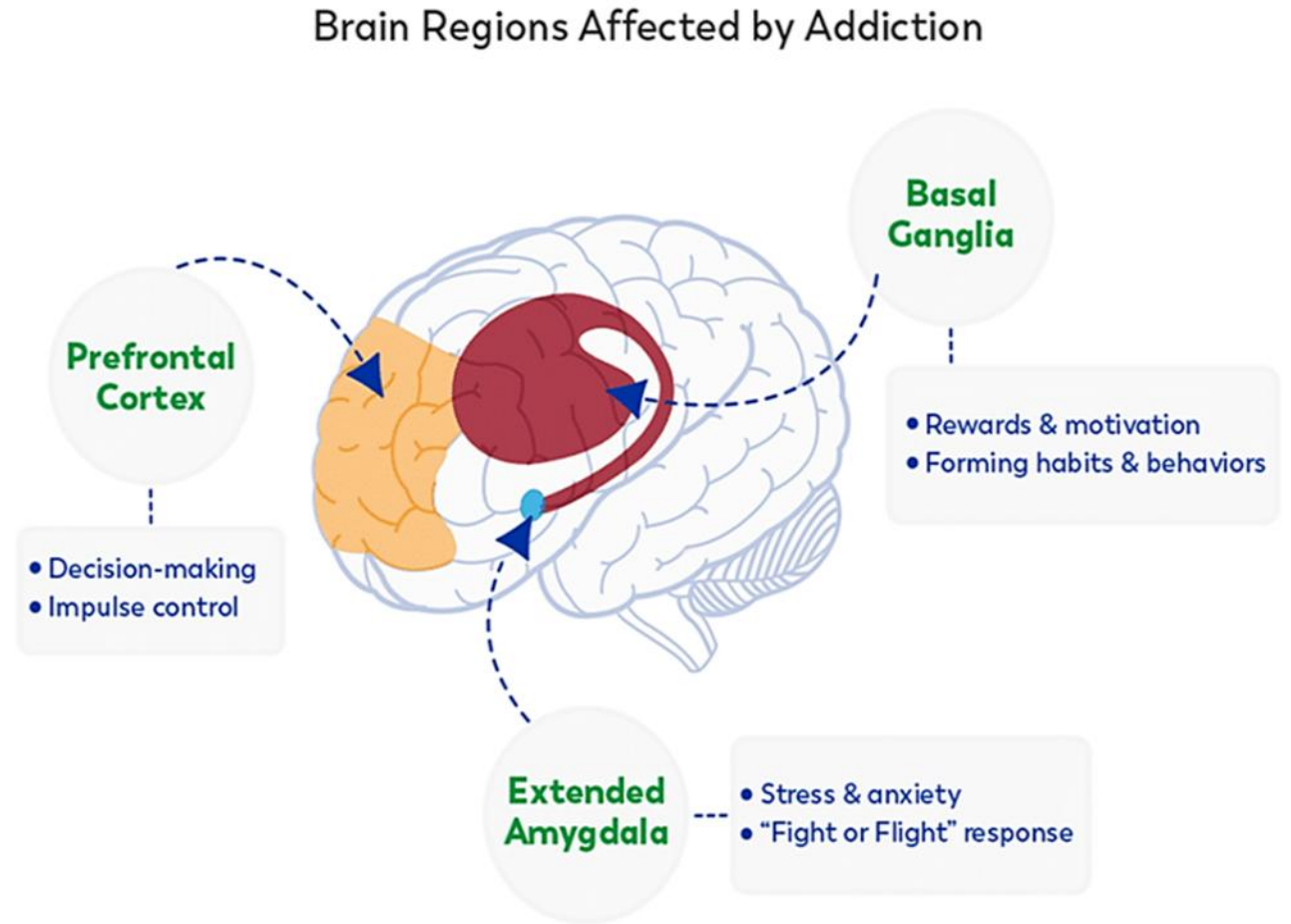
Opioid Use Disorder is a problematic pattern of opioid use that leads to severe impairment or distress.

Natural History of Opioid Use Disorder



Three Domains of Dysfunction

- Incentive Salience/Reward (Binge-Intoxication)
- Negative Emotionality (Withdrawal-Negative Affect)
- Executive Function (Preoccupation-Anticipation)



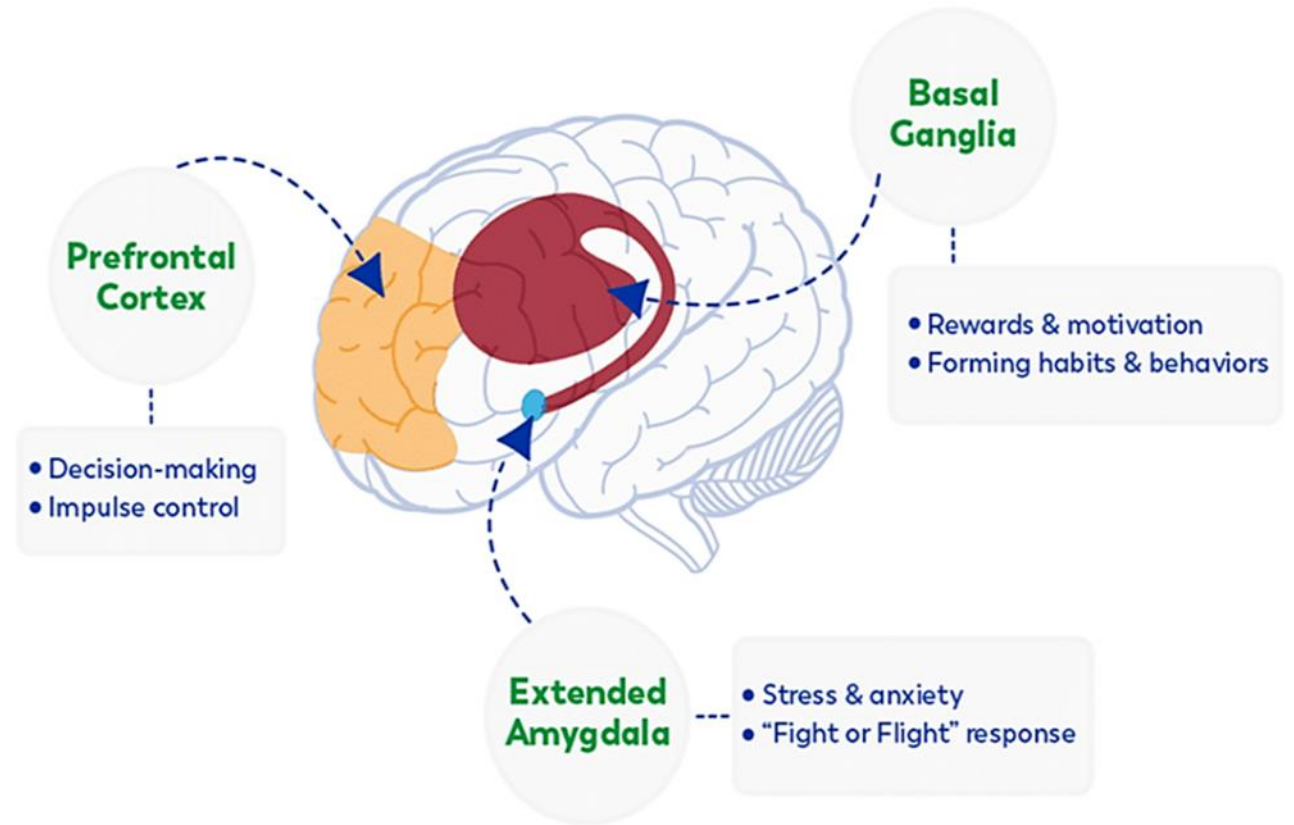
Course of Addiction

- Initial use and dopamine surge
- Positive reinforcement pathways
- Actively seek out substance to feel good



Using to feel good

Brain Regions Affected by Addiction



Effects of Drugs on Dopamine Levels

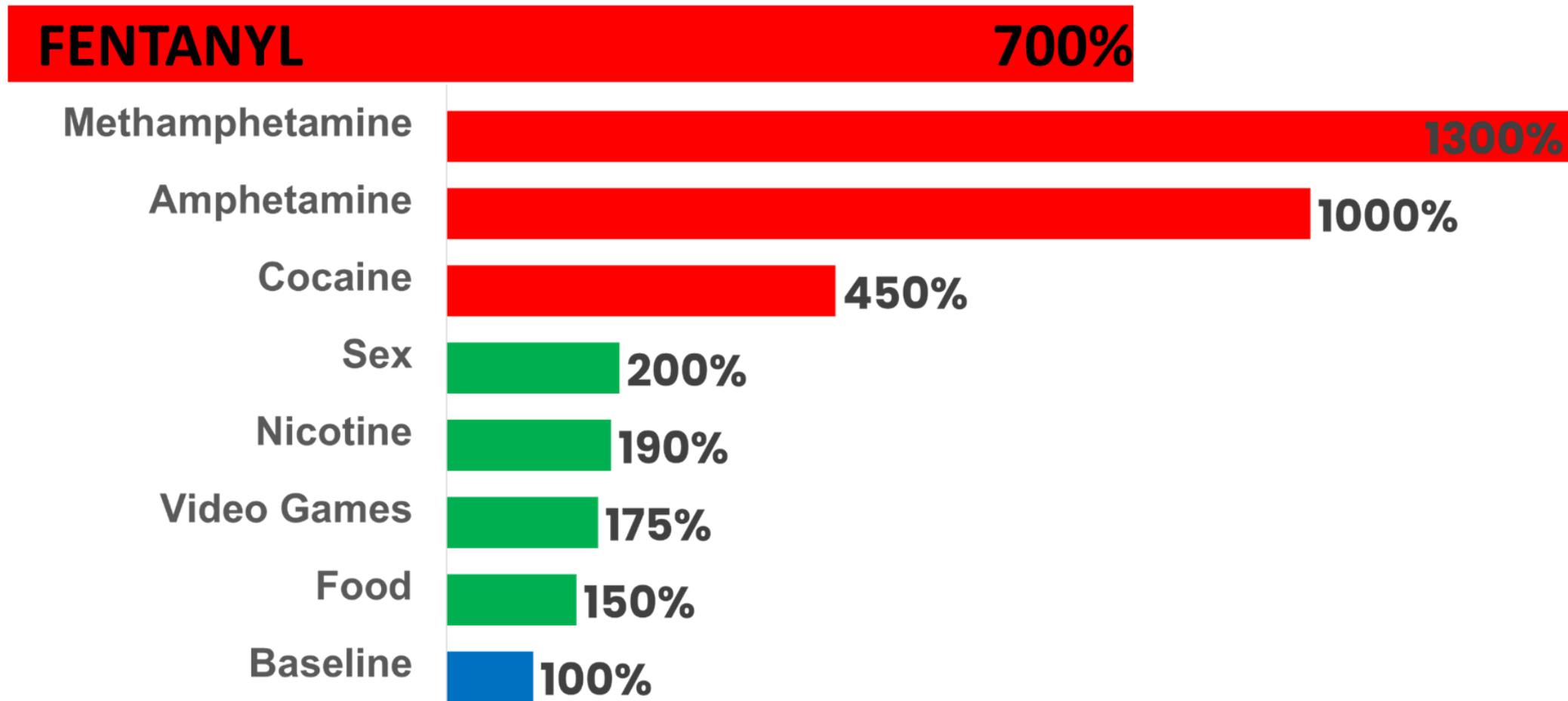
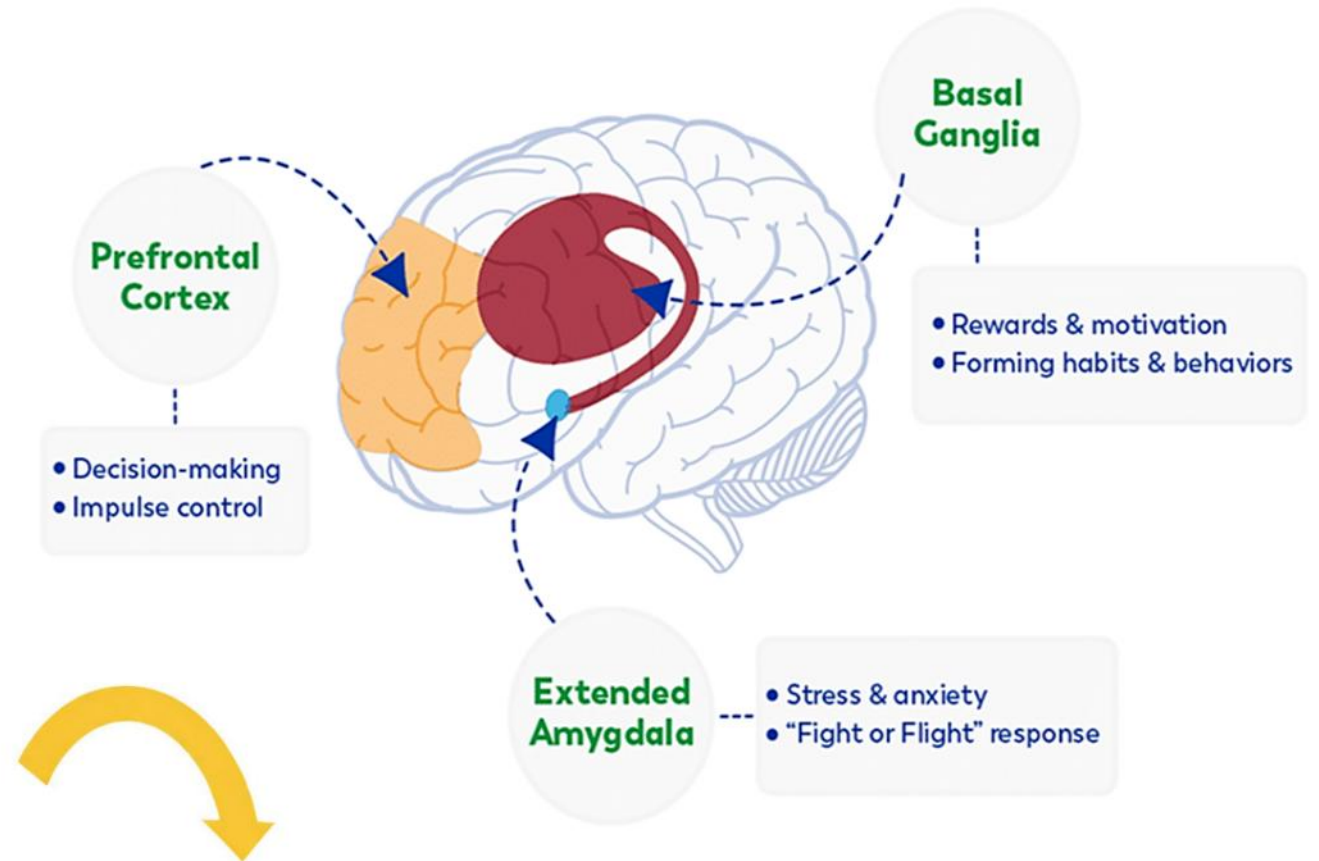


Chart: The Conversation, CC-BY-ND • Source: [National Institute on Drug Abuse](#) • [Get the data](#)

Course of Addiction

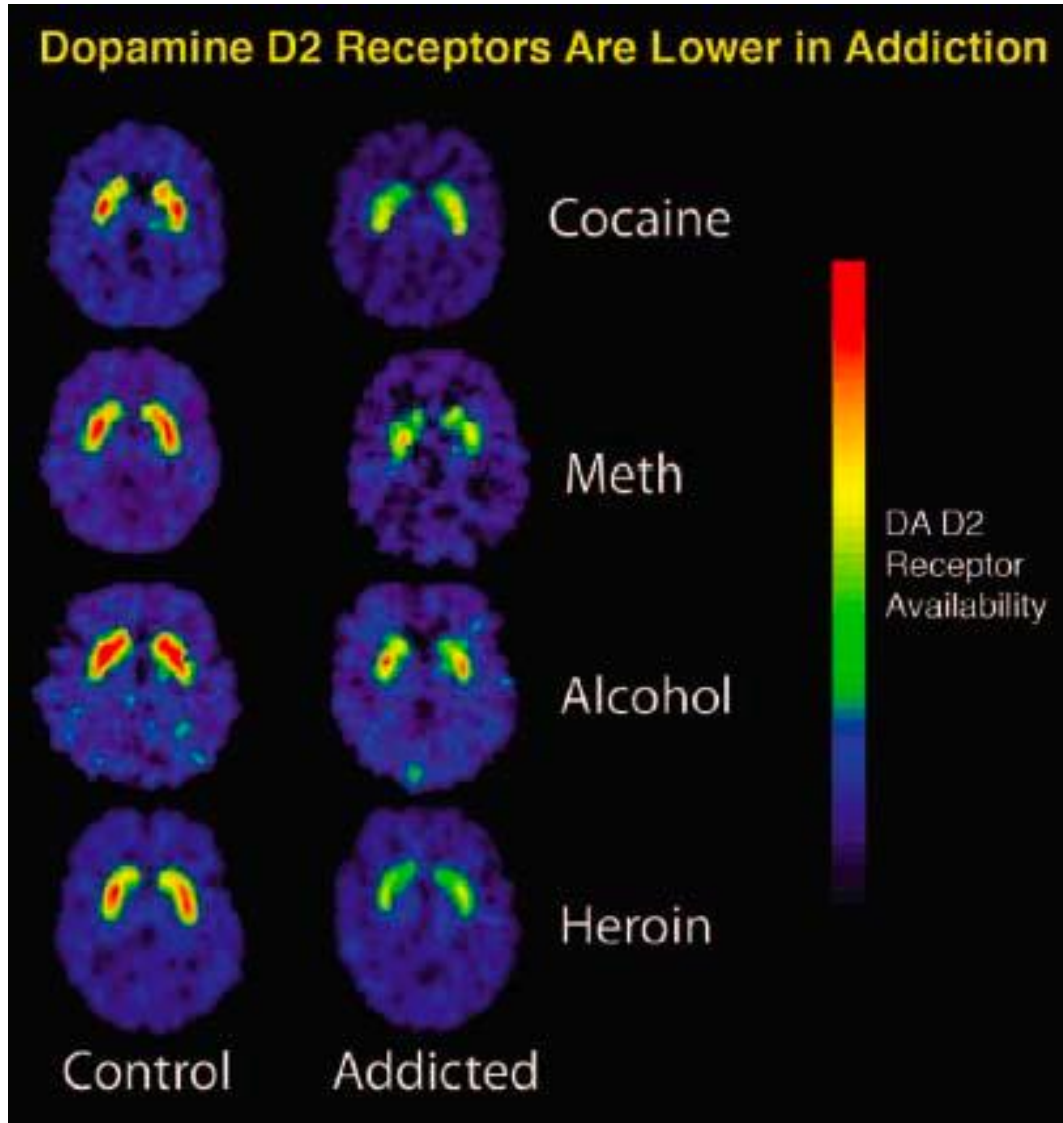
- Initial use and dopamine surge
↓
- Positive reinforcement pathways
 - Actively seek out substance to feel good
↓
- Downregulation of Dopamine Receptor
 - Need more for same effect/feel normal

Brain Regions Affected by Addiction



Needing to use more to feel normal

Chronic Brain Disease



Addiction is a chronic brain disease involving real changes in brain chemistry.

It requires **medical treatment**.

Course of Addiction

- Initial use and dopamine surge
- ↓
- Positive reinforcement pathways
 - Actively seek out substance to feel good



- Downregulation of Dopamine Receptor
 - need more for same effect/feel normal

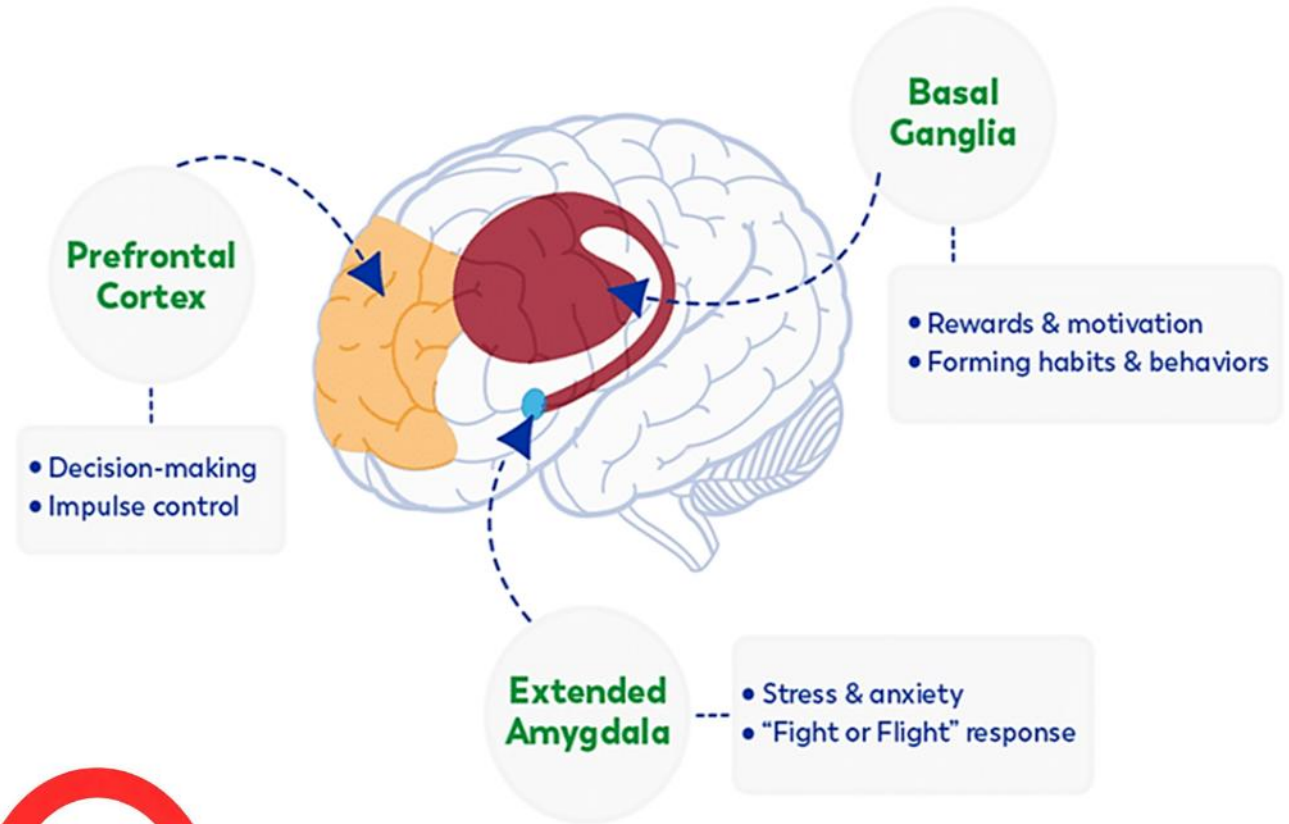


- Negative Reinforcement pathways take over
 - Use substances to avoid withdrawal



Using to keep from getting sick

Brain Regions Affected by Addiction



Course of Addiction

- Initial use and dopamine surge
- ↓
- Positive reinforcement pathways
 - Actively seek out substance to feel good



- Downregulation of Dopamine Receptor
 - Need more for same effect/feel normal

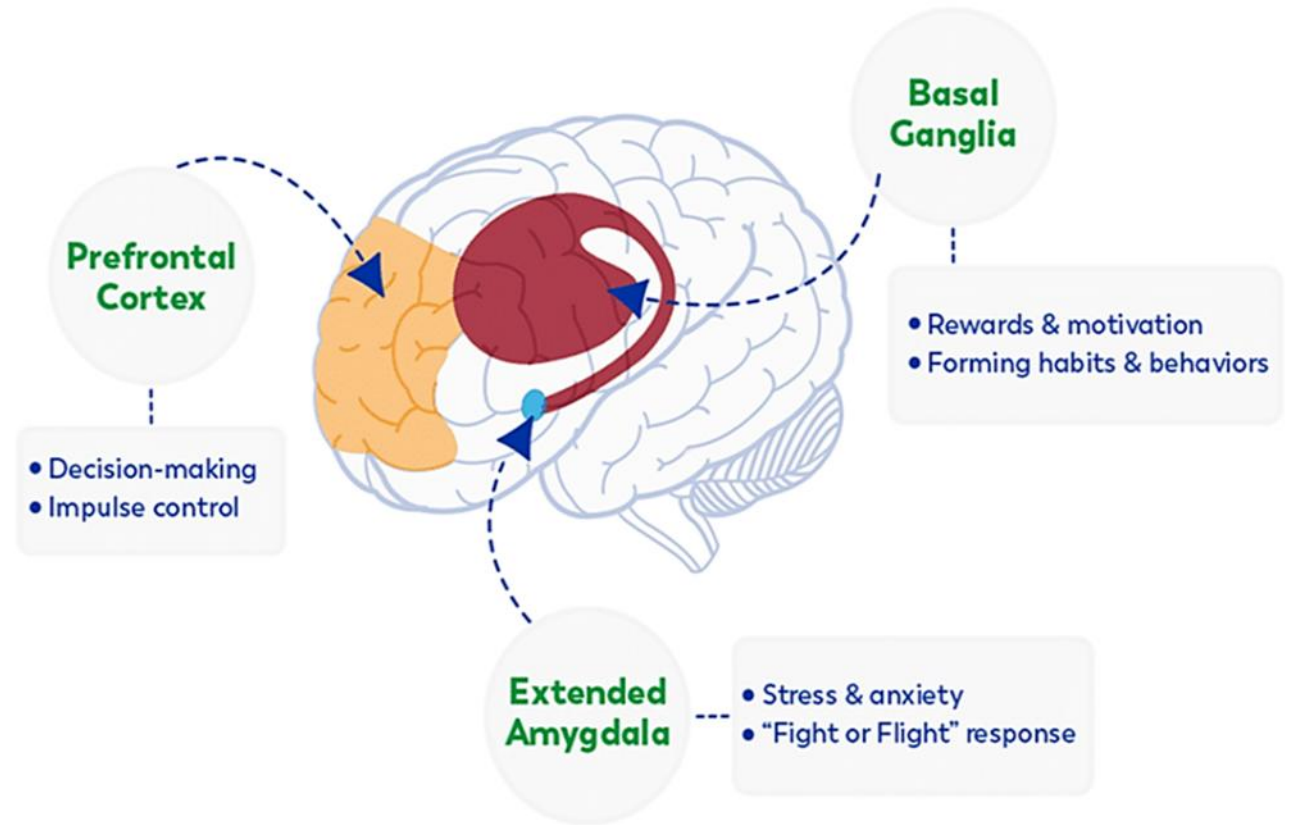


- Negative Reinforcement pathways take over
 - Use substances to avoid withdrawal



- Loss of prefrontal cortex function

Brain Regions Affected by Addiction



HEART DISEASE CANCER CHRONIC LUNG DISEASE STROKE ALZHEIMER'S DISEASE DIABETES CHRONIC KIDNEY DISEASE

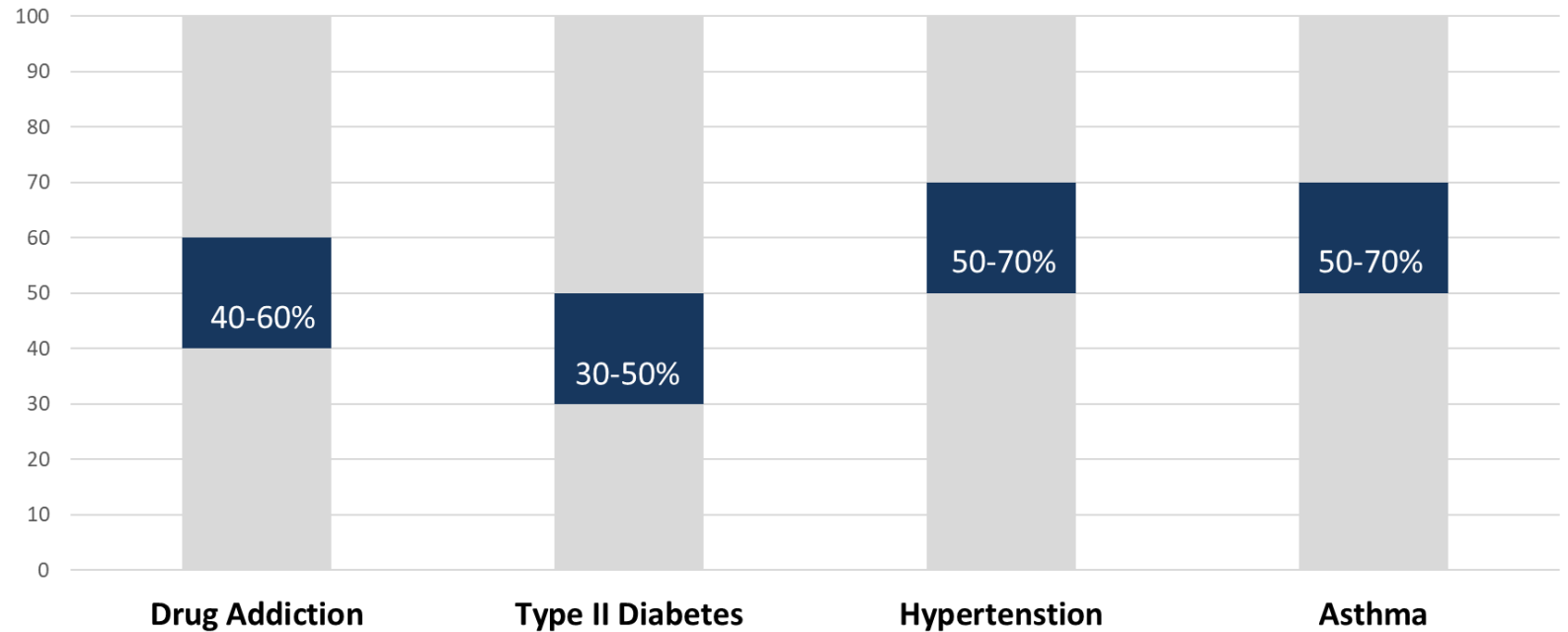


OD?

CHRONIC DISEASES

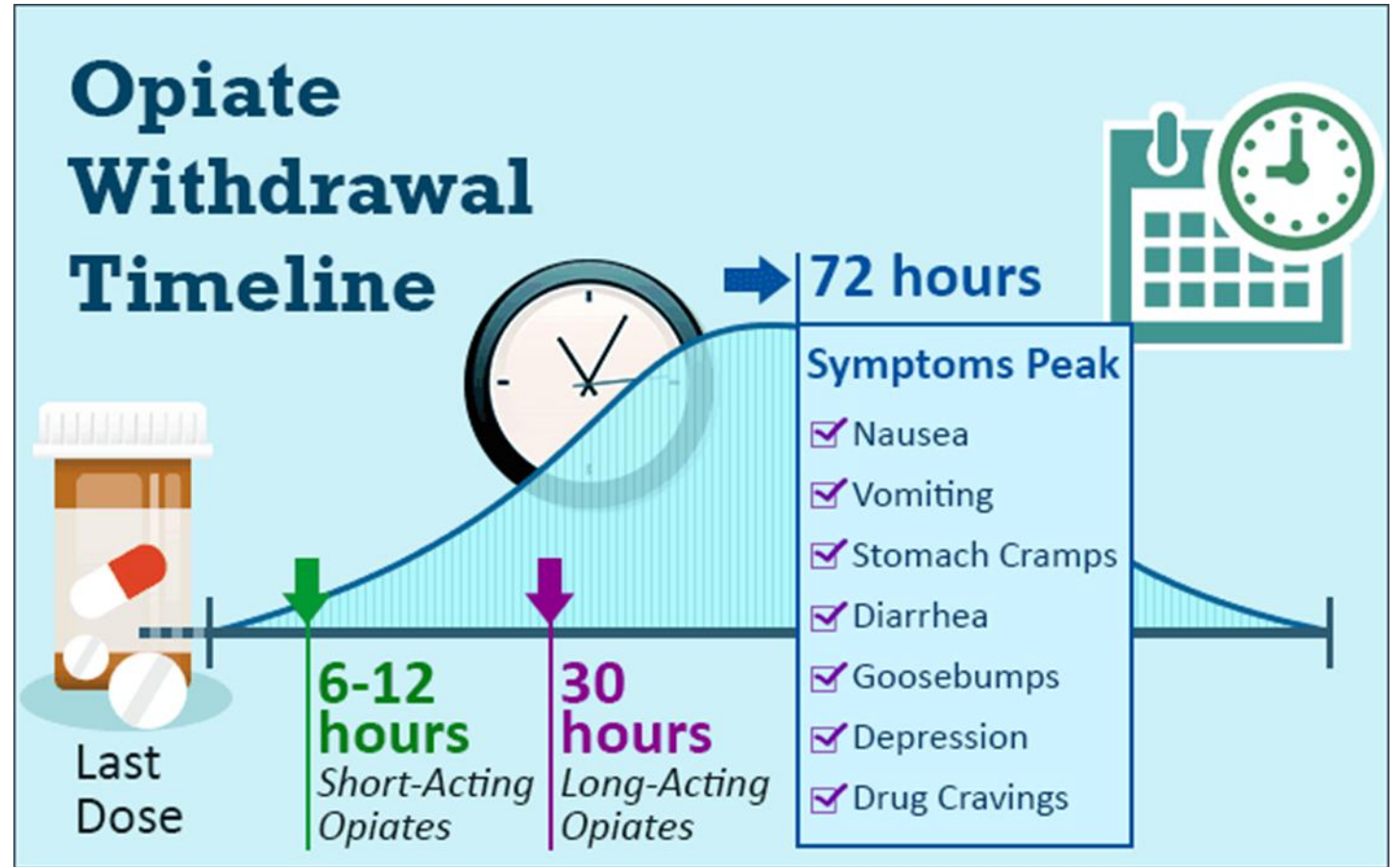
Recurrence Rates are Similar for Addiction and Other Chronic Illnesses

*Source: JAMA,
284:1689-1695,
2000*



Opioid Withdrawal Symptoms

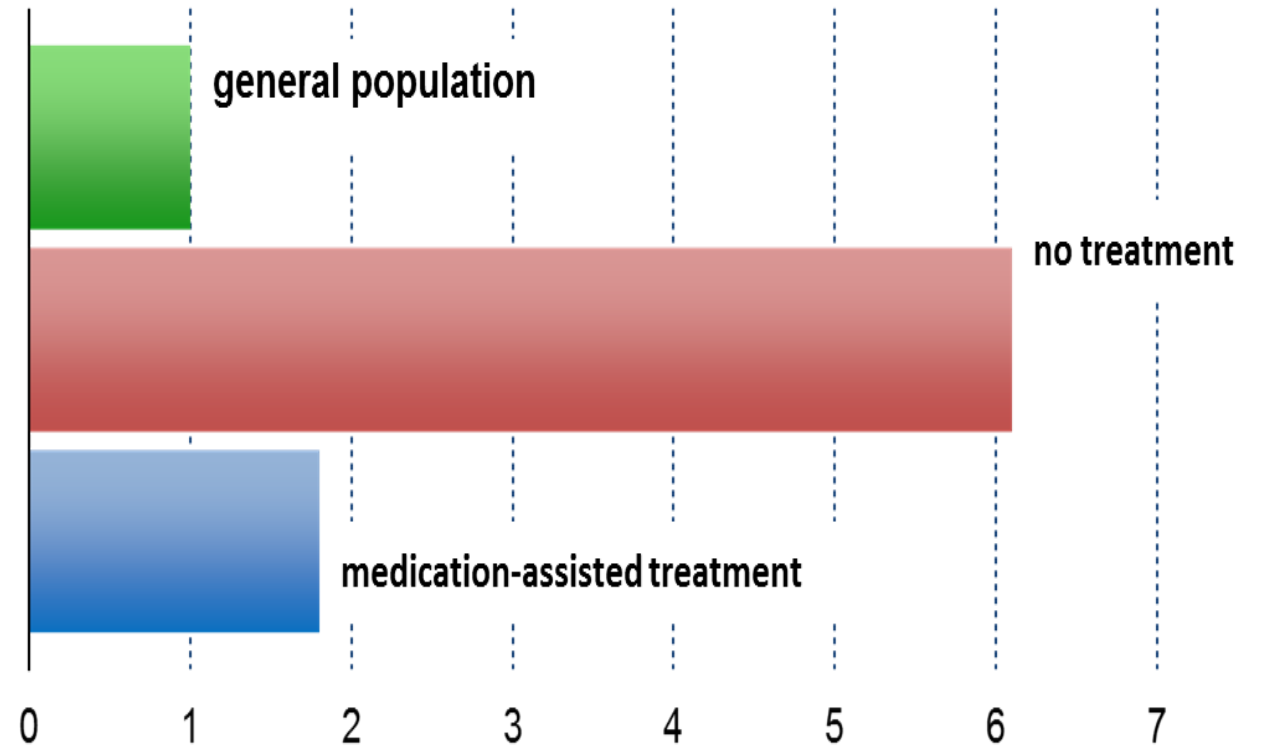
- **Occurs with physiological addiction to opioids**
 - Induced by abstinence or naloxone
 - 6 hours after short-acting opioids like heroin
- **Clinical symptoms and signs**
 - Abd pain, nausea, vomiting, diarrhea
 - Irritability, anxiety, restlessness, tremor
 - Arthralgias
 - Piloerection
 - Yawning
 - Lacrimation or rhinorrhea
 - Dilated pupils
 - Mild tachycardia



Medications for Opioid Use Disorder (MOUD)

2/3 Mortality Reduction

Death rates:



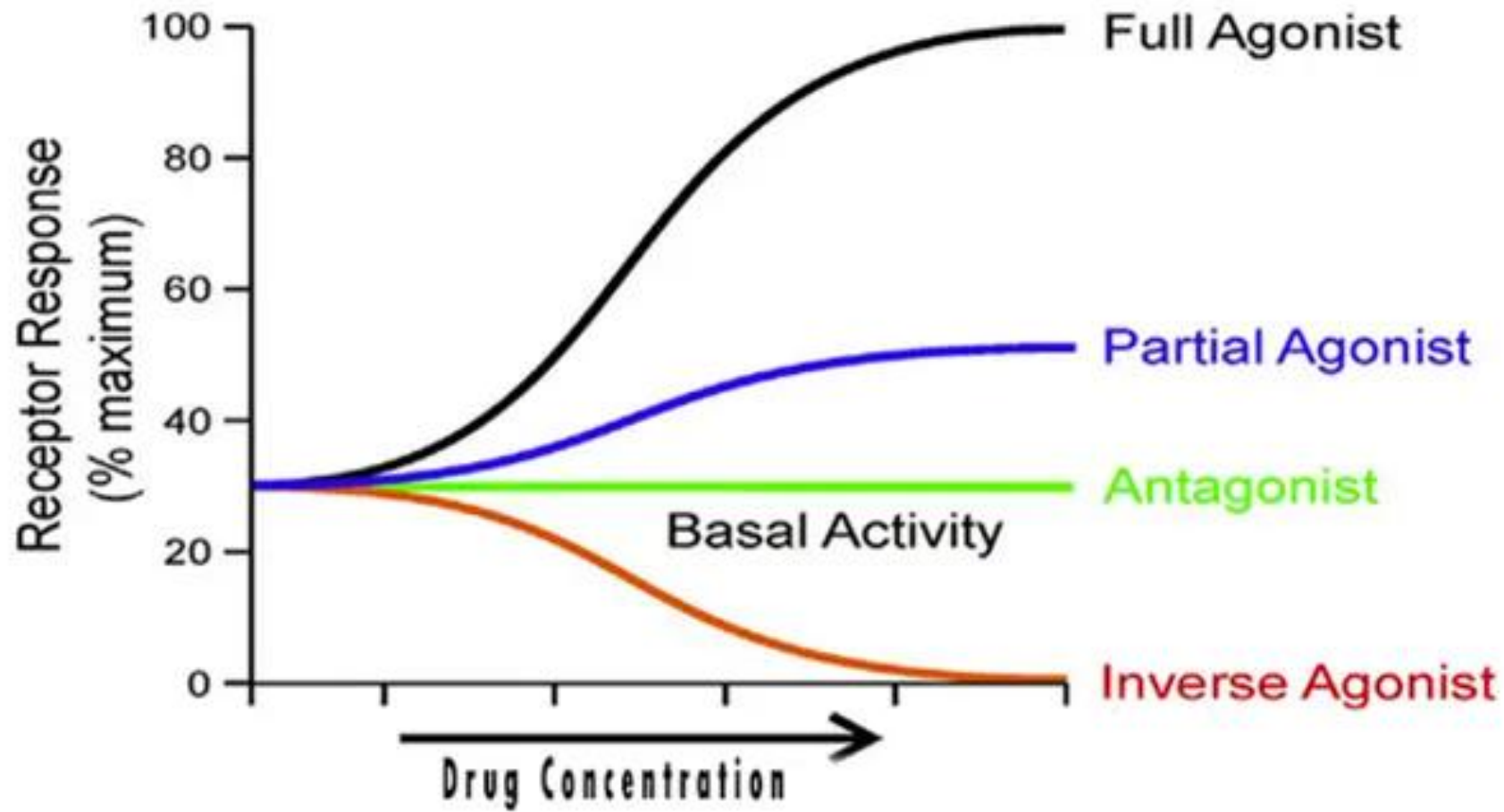
- Dupouy et al., 2017
- Evans et al., 2015
- Sordo et al., 2017

What about abstinence?

Abstinence-based therapy and/or rehabs don't work.

- 27% return to use on day of discharge
- 65% return to use at one month
- 90% return to use at one year

Abstinence = lower tolerance —> RTU = HIGH OD risk

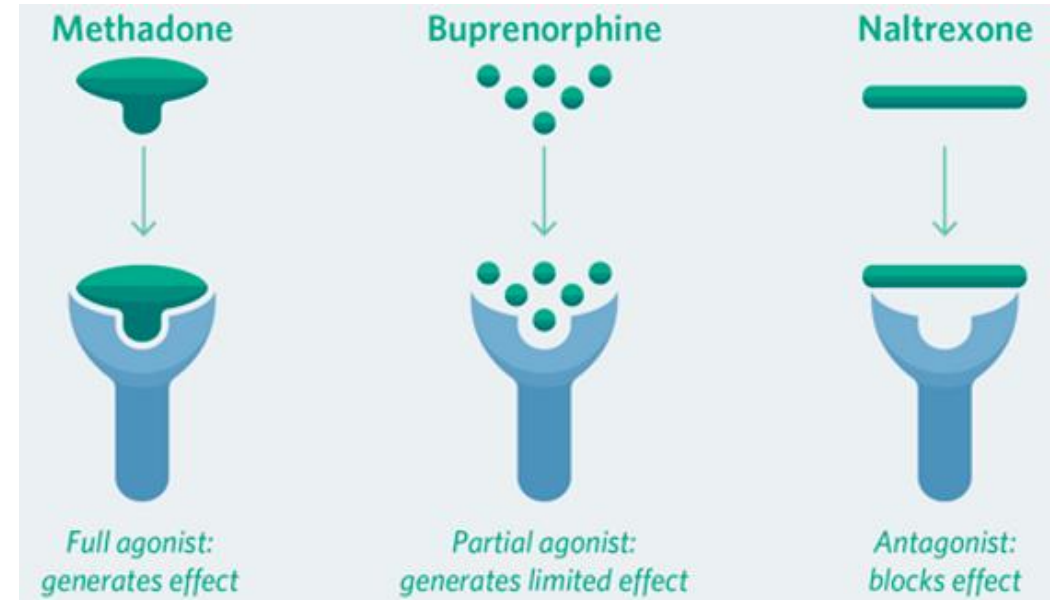


MOUD Properties

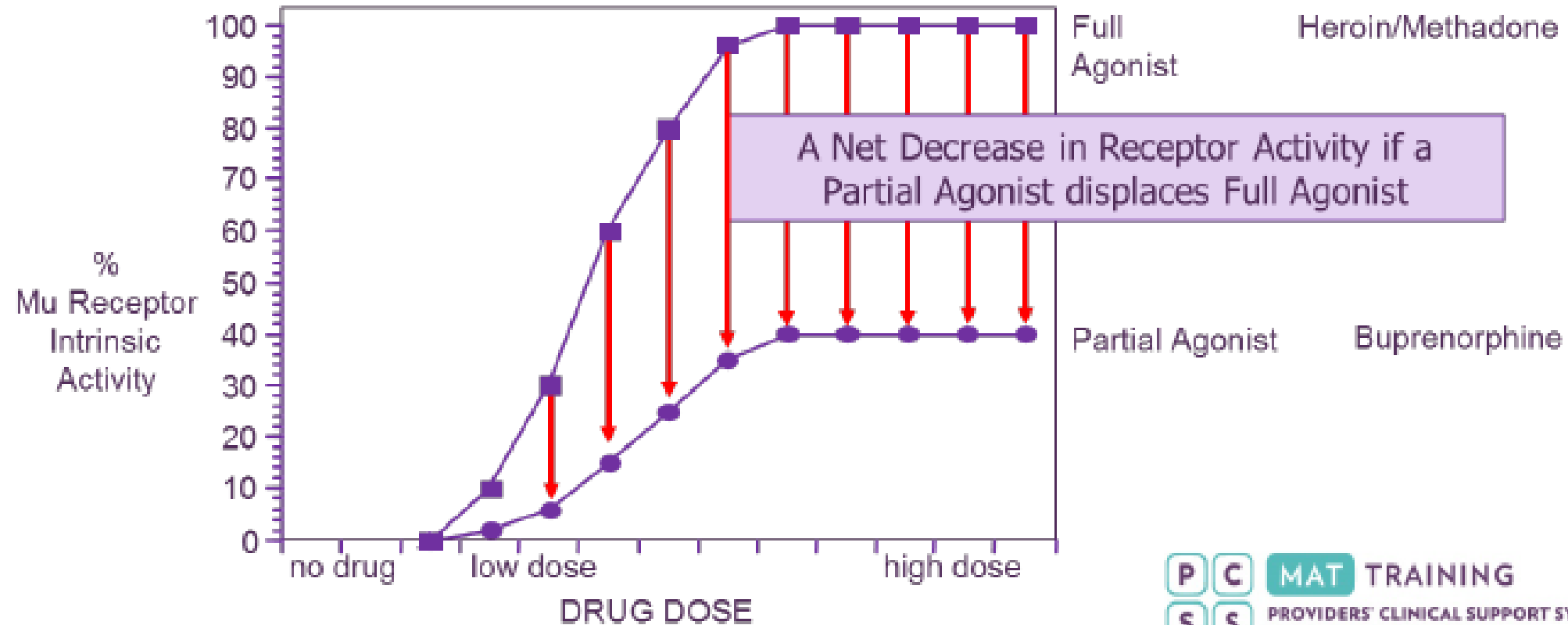
Buprenorphine: High affinity, partial agonist

Methadone: High affinity, full agonist

Naloxone: High affinity, full antagonist



Mechanism



P C MAT TRAINING
S S PROVIDERS' CLINICAL SUPPORT SYSTEM
For Medication Assisted Treatment

Buprenorphine

Buprenorphine/Naloxone

Suboxone®, Zubsolv®

Buprenorphine

Subutex®

Buprenorphine injectable

Brixadi®, Sublocade®

Buprenorphine buccal (mcg)

Belbuca®

Buprenorphine patch (mcg)

Butrans®

Formulations

- Sublingual, SQ injectable, IV

Mechanism

- **High affinity** partial agonist at the mu receptor
- T ½ 24-60h

Benefits

- **Effectively** treats withdrawal and cravings
- Not as tightly regulated as methadone
- Overdose protective
- No X-waiver needed to prescribe!!
- **NJ ALS can initiate !**

Limitations

- Induction can be difficult
- Fear

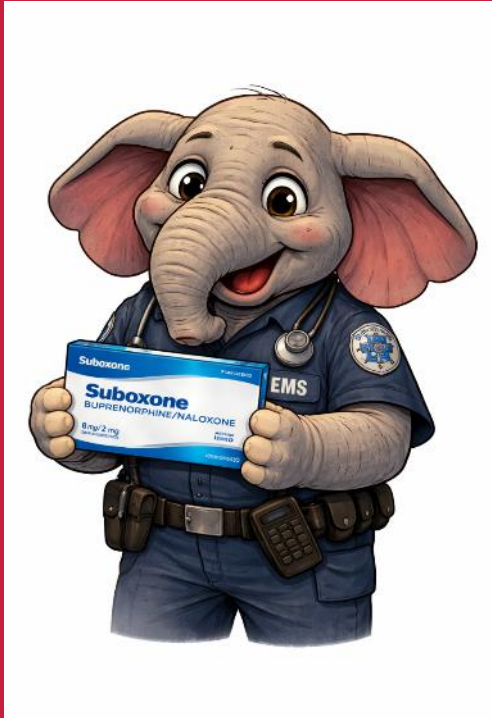


Is Buprenorphine Replacing One Addiction with Another?

Addiction vs Dependence



Why EMS? Why equip ambulances with bupe?



Up to **50%** of individuals who EMS Clinicians administer naloxone to **refuse transport to a hospital** or leave the ER before being seen by a healthcare provider.



EMS Clinicians are often the **only healthcare professionals** to interact with those patients.



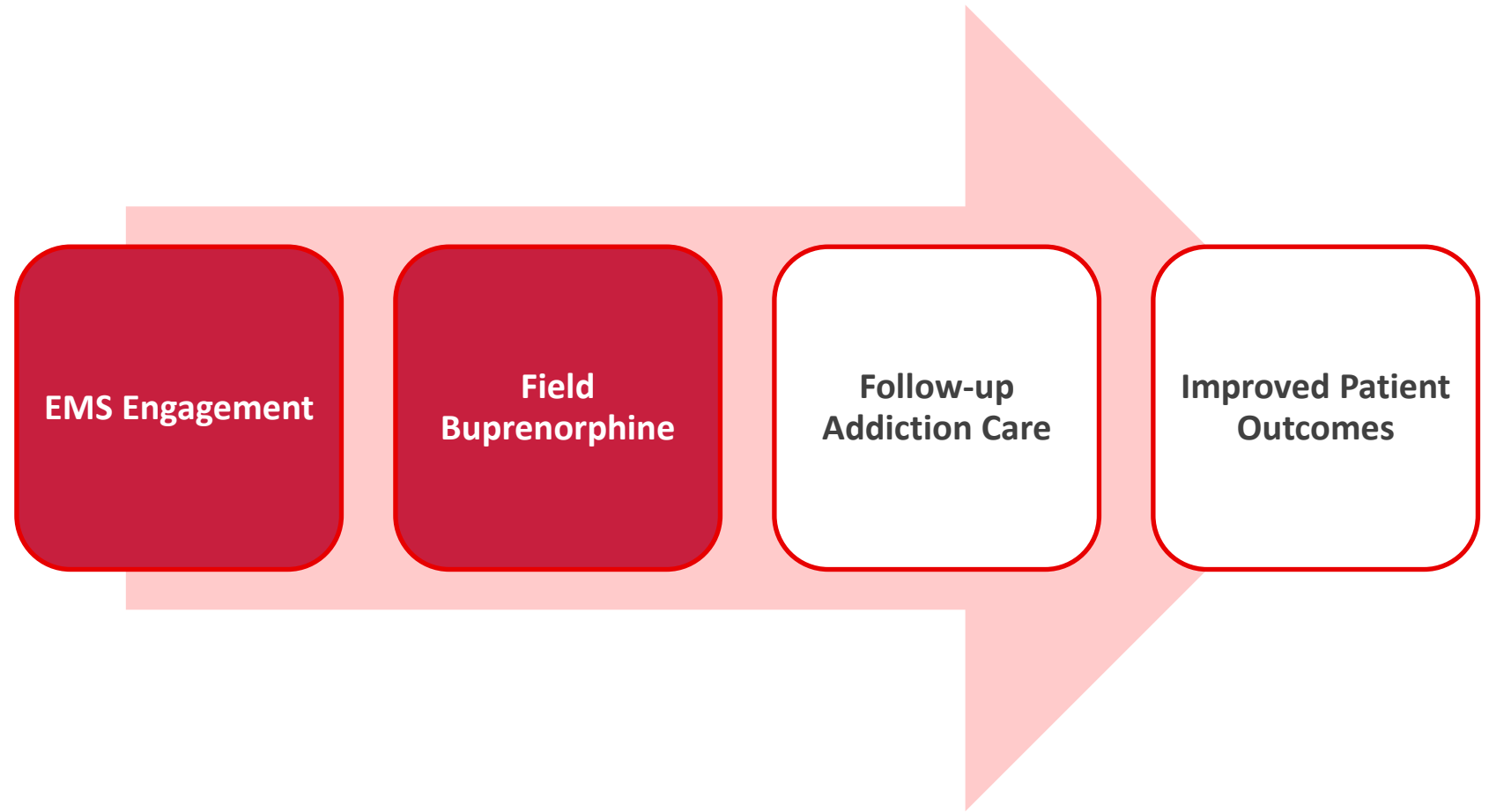
People who suffer an overdose face **dire odds**. Studies show about five to 10 percent mortality within one year.

Key Protocol Components

- Recognize developing withdrawal
- Engage with the patient/restore dignity
- Aggressive induction 16 - 24 mg
- Low-barrier follow up (for patients and medics)



Bupe FIRST Model

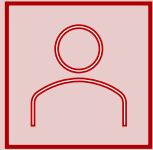


Protocols



COWS

≥5 (naloxone induced) or ≥8 (abstinence induced)



Engage the Patient

Is the patient willing to accept buprenorphine?



Medications

Buprenorphine 16mg SL

Ondansetron – 8 mg ODT/IM/IV

Buprenorphine – 8mg SL

Clinical Opiate Withdrawal Scale (COWS)

2.18A PW

Precipitated Withdrawal

Clinical Opiate Withdrawal Scale (COWS)

Sign or Symptom	Score	Score
Heart Rate	0	< 80
	1	81 - 100
	2	101 - 120
	4	> 120
Sweating	0	None
	1	Subjective Report
	2	Flushed or moist face
	3	Beads of sweat on face
	4	Sweat streaming on face
Restlessness	0	Able to be still
	1	Subjective report of restlessness
	3	Frequent shifting or extraneous movements
	5	Unable to sit still for longer than few seconds
Pupil size	0	Normal or small
	1	Pupils possibly larger than appropriate
	2	Pupils moderately dilated
	5	Pupils so dilated only rim of Iris is visible
Bone or Joint aches	0	None
	1	Mild diffuse discomfort
	2	Subjective report
	4	Actively rubbing joints or muscles
Rhinorrhea or lacrimation	0	None
	1	Congestion or moist eyes
	2	Rhinorrhea or lacrimation
	4	Nose constantly running or tears streaming
Yawning	0	None
	1	Yawning 1 - 2 times
	2	Yawning > 3 times
	4	Yawning several times a minute
Anxiety or irritability	0	None
	1	Subjective report
	2	Patient appears anxious
	4	So irritable that cannot participate in assessment
Gooseflesh	0	None
	3	Piloerection can be felt
	5	Prominent piloerection
GU Upset (over last ½ hour)	0	None
	1	Stomach Cramps
	2	Nausea or Loose Stool
	3	Vomiting or Diarrhea
	5	Multiple Episodes of Vomiting or Diarrhea
Tremors or Outstretched Hands	0	No Tremors
	1	Tremor Felt, but Not Observed
	2	Slight Tremor Observed
	4	Gross Tremor or Muscle Twitching

PARAMEDIC/MICN STANDING ORDERS

1. This procedure may only be performed by ALS providers who have been completed buprenorphine administration training. This MAY be performed if only one paramedic on scene has been trained.
2. For patients in naloxone-induced or abstinence-induced opiate withdrawal:

- Assess patient for any exclusion criteria

- Altered mental status/ no capacity
- Unwilling to give name and DOB
- Taken any methadone within the past 72 hours/Currently enrolled in a methadone program
- Not a daily opiate user
- Age <16

***If any of the above are present, patient is NOT eligible for buprenorphine, continue with Overdose protocol.

- Calculate a Clinical Opiate Withdrawal Scale (COWS) score (Below)

- ❖ Score must be calculated from three or more Sign/Symptom categories
 - For patients with naloxone induced opiate withdrawal with a COWS > or equal to 5
OR
 - For patients with abstinence induced opiate withdrawal with a COWS > or equal to 8
- ☐ Counsel patient regarding buprenorphine treatment for withdrawal
- ☐ Assess desire to initiate treatment
- ☐ If patient DECLINES, patient is NOT eligible for buprenorphine

ALS

Fostering a Culture of Change



Tyler Petit



Live instruction

Journal club

Webinars

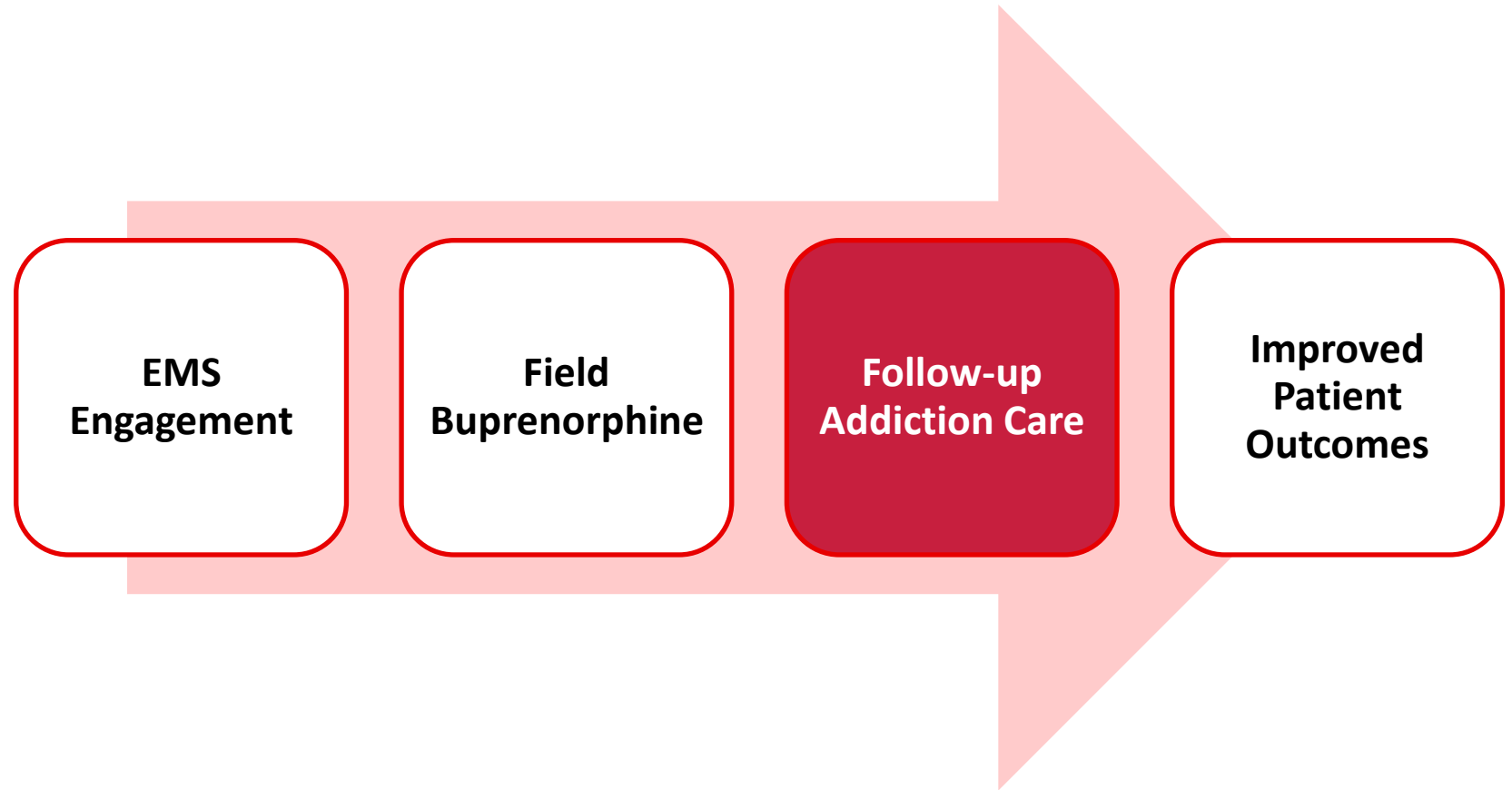
Clinic one-on-one time

Physician on scene time and support

Harm Reduction Initiative

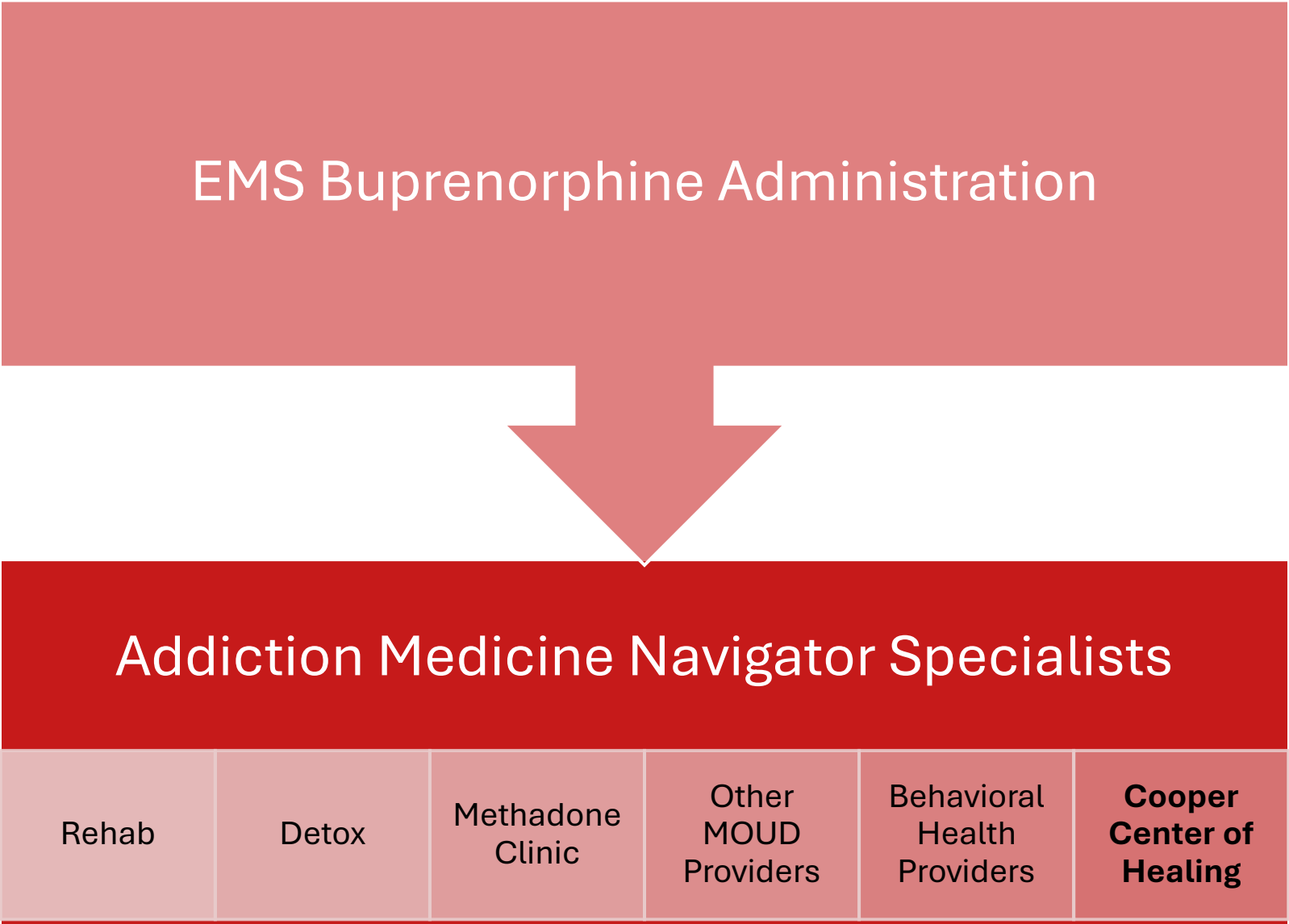


Bupe FIRST Model



Shelly Takach, MPH, NREMT

Follow-up Addiction Care



Cooper Center for Healing



Addiction Medicine Services

Inpatient substance use disorder consultation and treatment

Outpatient substance use disorder consultation and treatment

Telehealth medical and behavioral health services

Low barrier, no appointment needed, walk-in substance use care

Group specialty medical care

Integrated primary care services

Dual diagnosis evaluation and treatment

Adolescent substance use disorder consultation and treatment

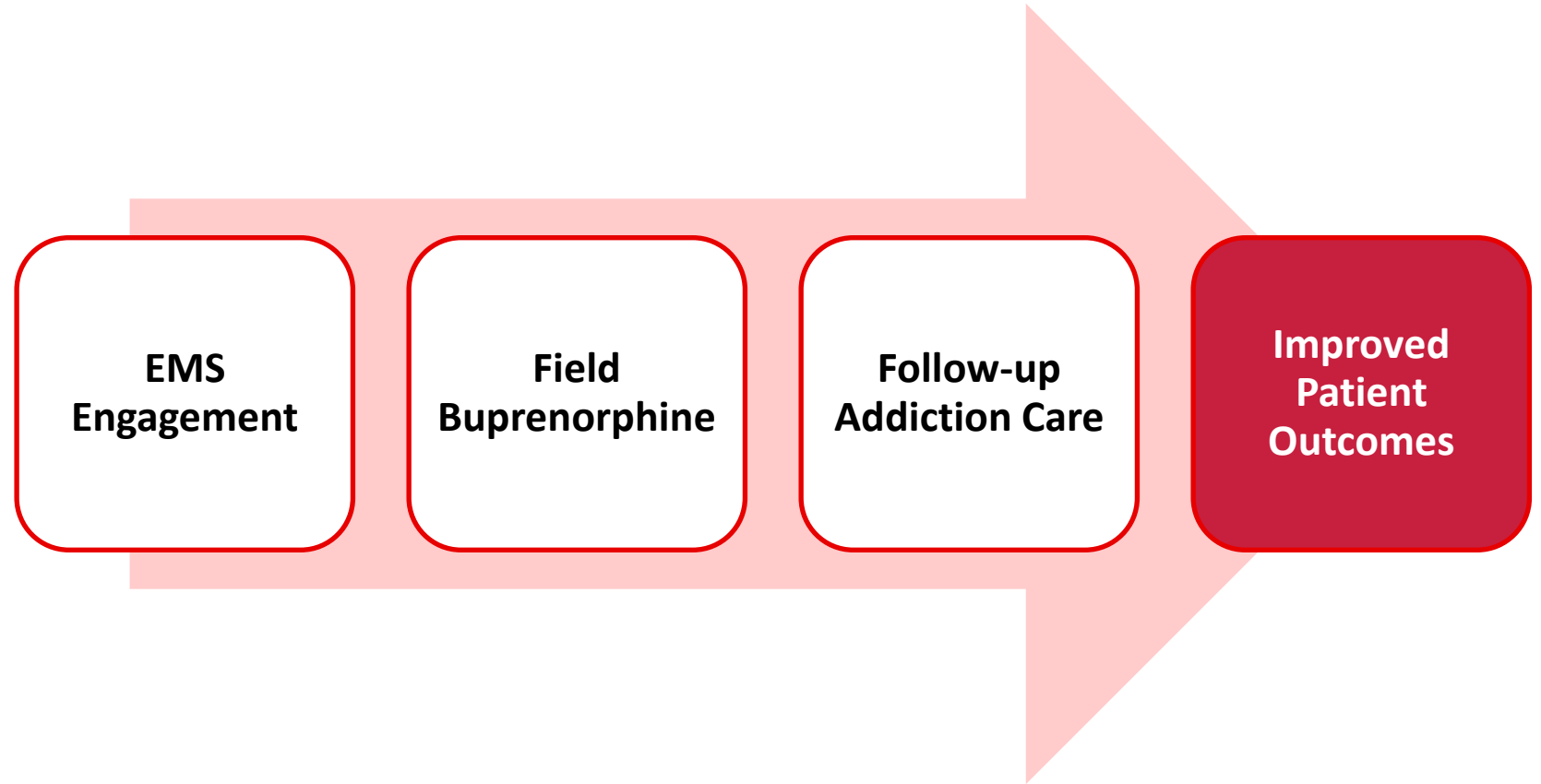
Medications for Addiction Treatment

Perinatal services for pregnant and parenting women struggling with substance use

Full coverage services for substance use disorders and mental health for uninsured and underinsured people,

Insurance and other social support navigation to reduce barriers to care

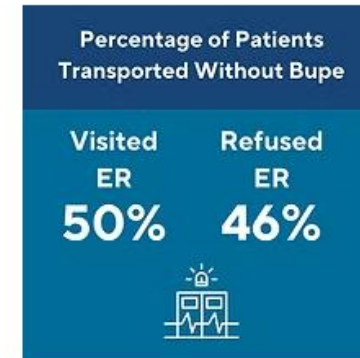
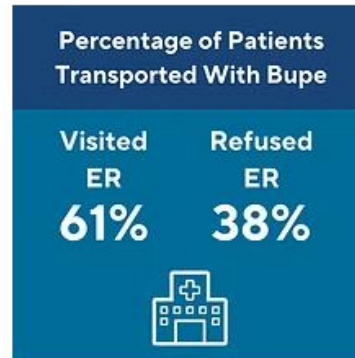
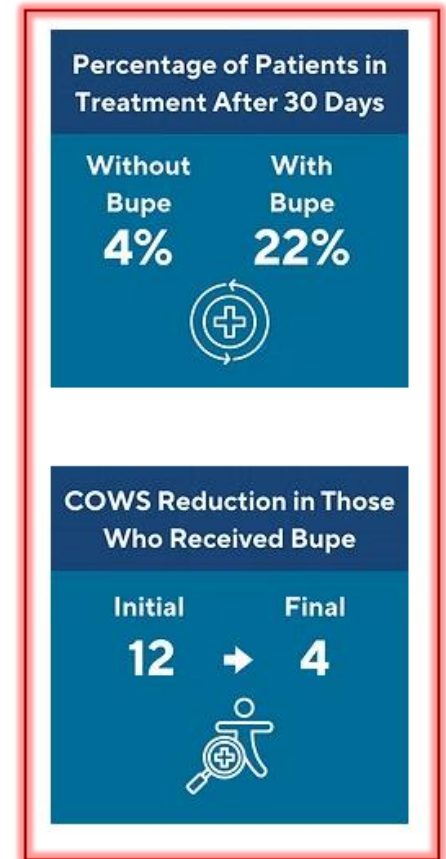
Bupe FIRST Model



Measuring Patient Outcomes



Data from August 2019–December 2025



EMS Utilization

Change in EMS
Utilization 6 Months
Before vs. After First
Buprenorphine
Administration (2019–
2024)

Study Population

- N = 228 patients
- Mean age: 43.5 years

Change in EMS Encounters

- Mean EMS encounters before buprenorphine: 0.90
- Mean EMS encounters after buprenorphine: 0.75
- Statistically significant decrease ($p = 0.023$)
- Fewer repeat EMS encounters after EMS-initiated buprenorphine

Subgroup Findings

- Decreases observed across:
 - Sex groups
 - Racial groups
 - Not all subgroup analyses met corrected statistical significance

Key Takeaway

- **EMS-initiated buprenorphine reduced repeat EMS utilization**

Expansion of Bupe FIRST



Bupe FIRST Pilot Sites



**University Hospital
Newark, NJ**



**St. Joseph's Health
Paterson, NJ**

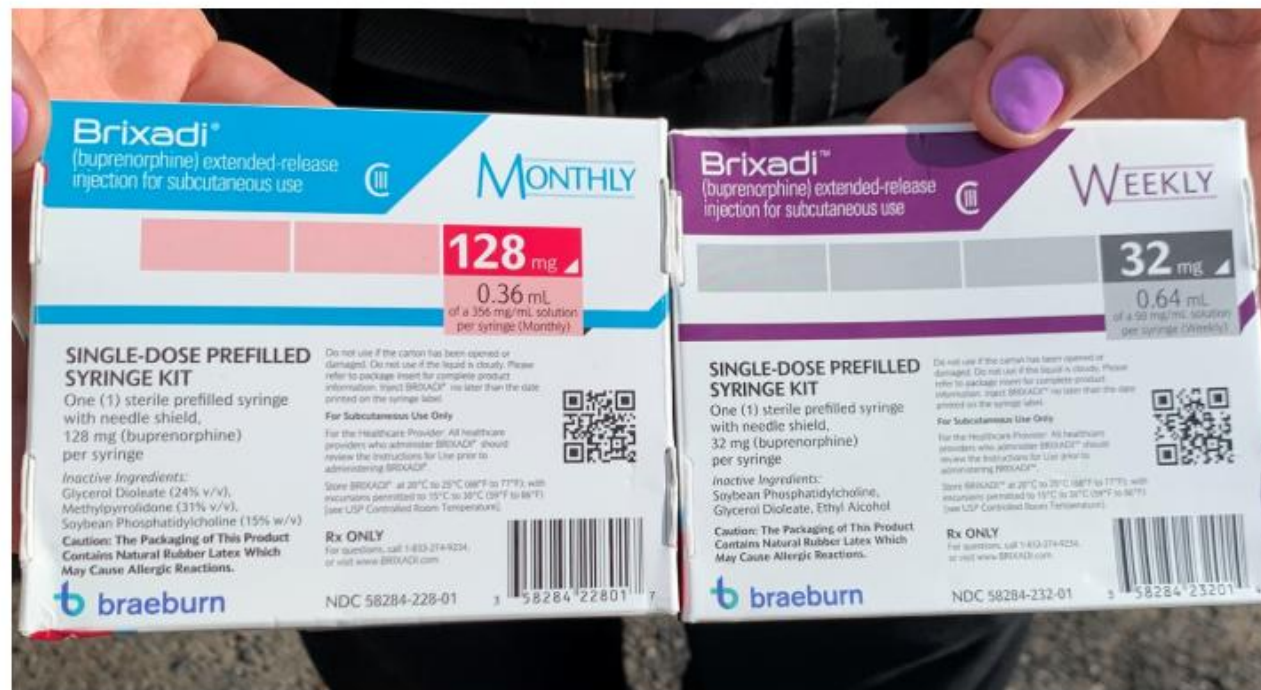


**AtlantiCare
Atlantic County, NJ**

XR-BUPE (Brixadi®)

Cooper EMS First in the Nation to Equip Paramedics With Long-Acting Injectable Buprenorphine

March 11, 2026 — [Leave a Comment](#)



Challenges

Changing Drug supply

- Xylazine
- Medetomidine
- ED buy-in
- Continuing stigma – old habits
- Competing priorities

Program Maintenance



Addiction Medicine Clinical Rotation



- Morning Session:
 - Center for Healing Bridgeview Clinic
 - Cooper Multispecialty Center at 808 Market Street
- Afternoon Session:
 - Walk-in Clinic
- Open to all healthcare providers interested in shadowing our providers and navigator team

Journal Club



Advances Evidence-Based Care

Keeps providers informed with current research to guide clinical decisions and protocol development.



Enhances Analytical Skills

Develops the ability to critically evaluate studies and translate findings into practice.



Strengthens Interdisciplinary Teamwork

Promotes shared learning and collaboration across EMS and OTHER DEPARTMENTAL teams.



Drives Better Patient Outcomes

Informed discussions lead to safer, more effective care delivery in the field.

QI and QA Projects



Chart Audits



**Standardize COWS Score
Documentation**



Refine Reporting Accuracy

emsCharts Bootcamp
emsCharts Analytics training
Leveraging Epic databases and other tools

Case Study

**Details have been
altered for HIPAA**



Dispatch at 15 Minutes Prior to Shift Change

0545 – Unresponsive male. CPR underway.

0548 – Police radio: “Step it up. Patient is blue.”

0550 – BLS update: “Slow it down. Not a code.
Suspected overdose.”

ALS continuing in.

0555 – ALS arrives. The patient begins to wake after
BLS administration of naloxone.



Engagement

Medic 1: *Turns to the police and BLS. “Hey, let’s give the patient some room.”*

Medic 2: *Gently removes NPA.*

Medic 1: *EMS hands the patient a towel and gives him a moment. He swears, looks around, and searches for his money and drugs. The crew allows space. About 30 seconds later, he re-engages with EMS.*

Medic 1: “Hey, you’re okay. When we got here, you weren’t breathing, so we gave you naloxone to help you breathe again. You’re safe right now.”

Patient: “I don’t know what happened. I don’t use drugs.”

Medic 2: *Redirects the conversation. “Naloxone can make people feel pretty sick. How are you feeling right now?”*

Engagement

Patient: “I’m fine! Where’s my stuff? Did you steal it?”

Medic 2: “I understand you’re worried about your things. This is how everything was when we got here, and the 911 caller had already left.”

Patient: *He scrambles, digging through his pockets and the surrounding area, searching for his belongings.*

Medic 2: “Do you want some water?” *Hands him a bottle.* “Can we check your vitals while we’re here?”

Medic 1: *Checks vitals.* “I’m noticing you’re sweating, and your pulse is pretty fast. Sometimes after naloxone, people start to feel shaky, nauseous, or achy.”

Medic 2: “It seems like your body might be starting to feel some withdrawal. Is that what it feels like to you?”

Engagement

Medic 1: “There’s a medication we can give that helps stop withdrawal. It’s a **high-dose buprenorphine**. Not the small doses that sometimes make people feel sick.”

Patient: “@#\$\$% that! I took one of those strips, and it made me sick as @#\$\$%!”

Medic 1: “Sounds like that was a bad experience. Sometimes that can happen with smaller doses or when someone hasn’t had naloxone first.”

Patient: “I’m not getting sick again! I’m leaving!”

Medic 1: “**It’s completely your choice.** Looks like the symptoms might be increasing a bit. What are you feeling?”

Patient: “It’s hitting me harder now.”

Medic 2: “If this could help you feel better in a little bit, would you want that?”

Dosing

Patient: “Okay, I’ll try it.”

Medic 1: “I just need your name and DOB. Have you ever taken methadone?” *Calculates COWS score =25.*

Patient: *Gives name and DOB.* “No.”

Medic 1 to Patient: “Are you feeling nauseous?”

Patient: “A little.”

Medic 1: *Administers 4 mg ODT ondansetron.*

Medic 2: *He confirms the dose 16 mg of Suboxone, two strips, and walks him through it slowly.* “Place them under your tongue. Let them dissolve. Try not to chew or swallow. Just let them sit.”

10 minutes later...

Medic 1: *Calculates COWS score 15. “How’s the nausea?”*

Patient: “Okay, but I still feel like @#\$%.”

Medic 2: *Provides an additional 1 strip of Suboxone 8 mg. Ten minutes later, calculates COWS score 10.*

Patient: “Yeah, I’m feeling better. I think I’m good to go.”

Medic 2: “It’s your decision. Before you go, can we check your vitals one more time?”

Medic 1: “If you don’t want to go to the hospital, we’ll go over the refusal form together. Would you mind if I quickly went over what we’re concerned about and what kind of support is available at the hospital if you change your mind?”

Patient: “Yeah, sure.” *Listens and signs the refusal form. Final COWS score 3.*

Case Study Summary

Start with Autonomy

- “You’re in control of what happens next.”
- Avoid pressure or confrontation

Build Rapport First

- Address comfort (water, blanket, space)
- Validate emotions: “I can see this is frustrating.”

Reflect & Normalize

- “It looks like you’re starting to feel uncomfortable.”
- “That can happen after naloxone.”

Ask Permission

- “Would it be okay if I shared something that might help?”

Case Study Summary

Provide Clear, Simple Info

- “We have a medication called buprenorphine that treats withdrawal.”
- “It’s a high dose designed to help you feel better.”

Reinforce Choice

- “It’s completely up to you.”

Support the Decision

- If yes → guide the interaction.
- If unsure → explore concerns.
- If no → review risks & safety net.

Takeaways

Opioid use disorder is a chronic medical condition.

1 in 10 overdose survivors die within a year, and EMS is there at a critical moment to intervene.

Medications for opioid use disorder (MOUD) reduce mortality by two-thirds.

EMS-initiated buprenorphine increases follow-up addiction care & reduces repeat EMS utilization.

•

References

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Questions?

