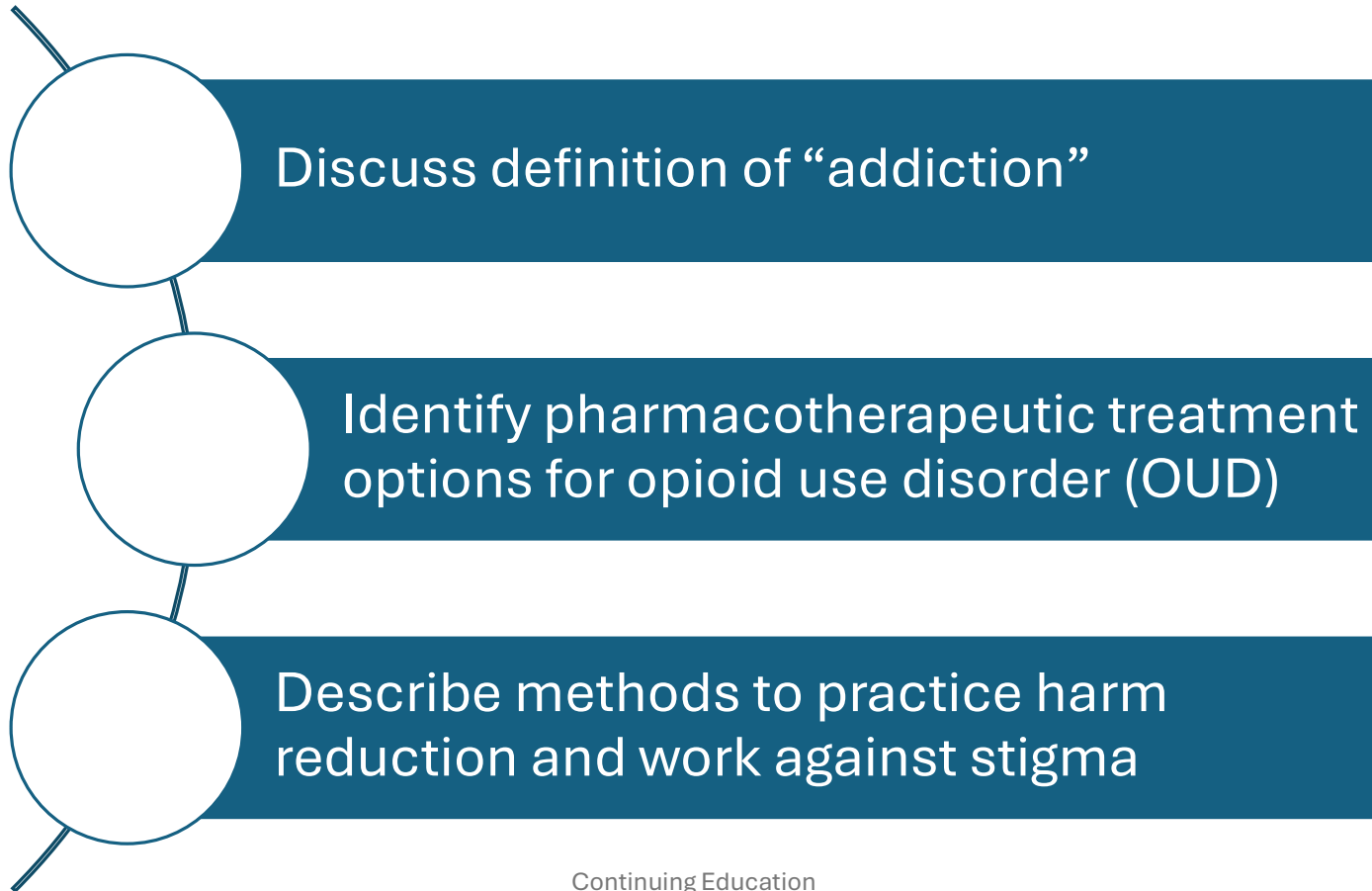


# **A Pharmacist's Role in Medications for Opioid Use Disorder and Harm Reduction Strategies**

Eden G. Keller, PharmD

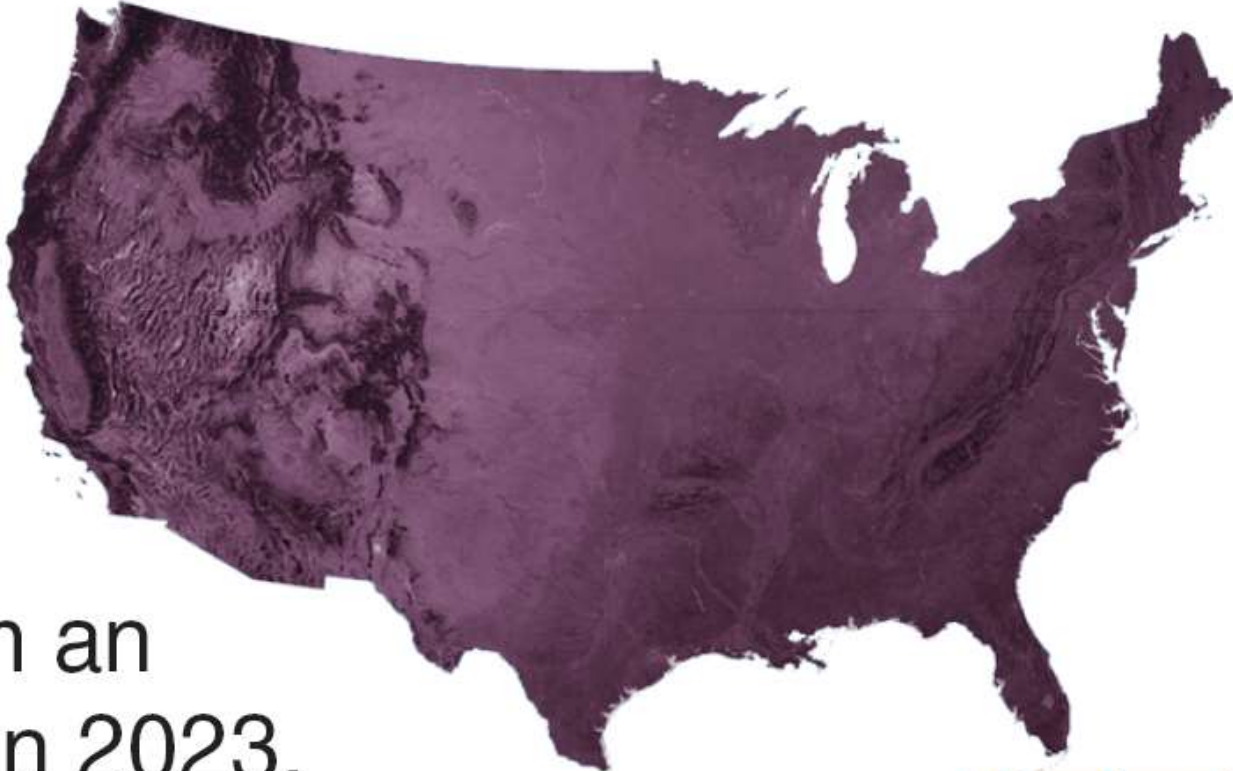
# Learning Objectives



# Disclosures

- I have no relevant financial conflicts of interest in relation to this activity to disclose.

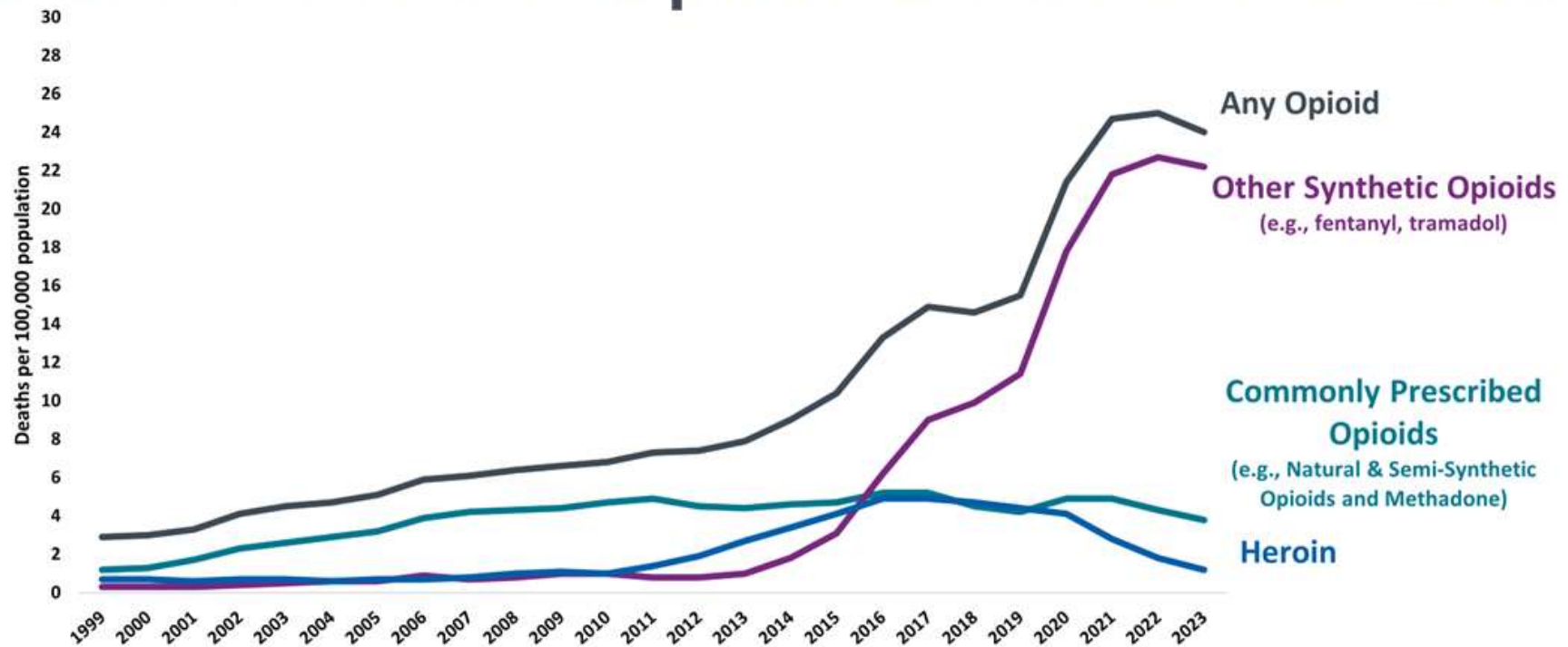
**217**  
**PEOPLE**



died each day from an  
**opioid overdose** in 2023.



# Three Waves of Opioid Overdose Deaths



Wave 1: Rise in Prescription Opioid Overdose Deaths Started in the 1990s

Wave 2: Rise in Heroin Overdose Deaths Started in 2010

Wave 3: Rise in Synthetic Opioid Overdose Deaths Started in 2013

SOURCE: CDC/NCHS, National Vital Statistics System, Mortality. CDC WONDER, Atlanta, GA: US Department of Health and Human Services, CDC; 2024. <https://wonder.cdc.gov/>.



# The 4 C's of Addiction

## Loss of Control

- Inability to stop or cut down on the behavior

## Compulsion

- The irresistible urge or uncontrollable desire

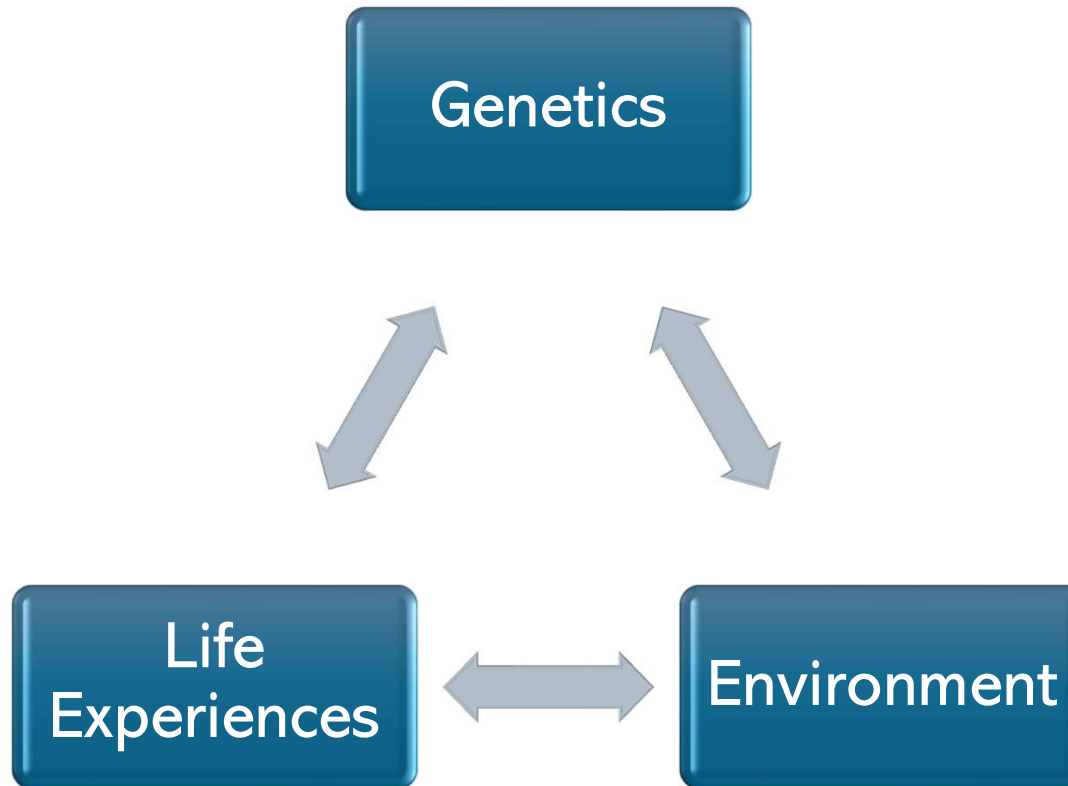
## Cravings

- Physical need to continue the behavior (i.e. hunger, thirst, insomnia)

## Consequences

- Use despite the negative impact of using the drug

# Addiction is Multifactorial



# How Do We Diagnose SUD?



# DSM-V Criteria for Substance Use Disorder

Using more than intended or using it for longer than you're meant to.

Trying to cut down or stop using but being unable to.

Experiencing intense cravings or urges to use

Needing more to get the desired effect (tolerance).

Developing withdrawal symptoms when not using

Spending more time getting and using drugs and recovering from using

Neglecting responsibilities at home, work or school because of substance use.

Continuing to use even when it causes relationship problems.

Giving up important or desirable social and recreational activities due to substance use.

Using substances in risky settings that put you in danger.

Continuing to use despite it causing problems to your physical and mental health.

**Mild = 2-3 criteria ; Moderate = 4-5 criteria; Severe = 6+ criteria**

## Low Risk Use

- You rarely or occasionally use cannabis or cannabis products
- You find yourself using cannabis 1-4 times a month or less

## Tolerance

- You begin to increase the frequency or the amount that you consume cannabis and your brain begins to adapt
- You find you need to take more to get the same effects as before
- You may or may not experience withdrawal symptoms if you stop

## Dependence

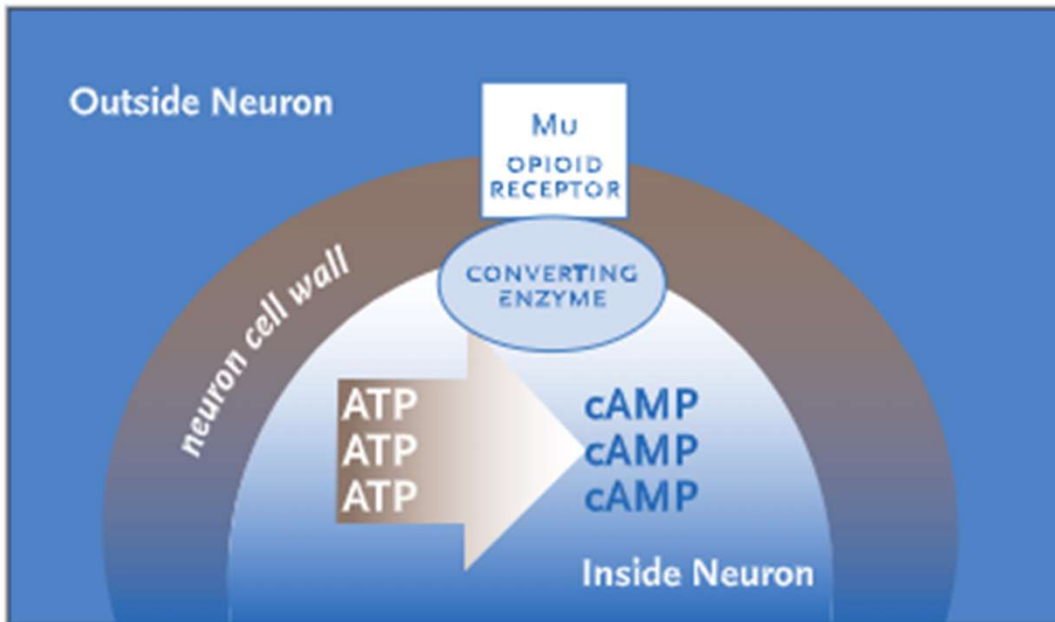
- You have been using cannabis daily or almost daily for a long period of time (months)
- You have developed a high tolerance to cannabis and need high frequent doses to achieve the feeling you want
- You will be more likely experience some withdrawal symptoms if you decide to stop

## Addiction

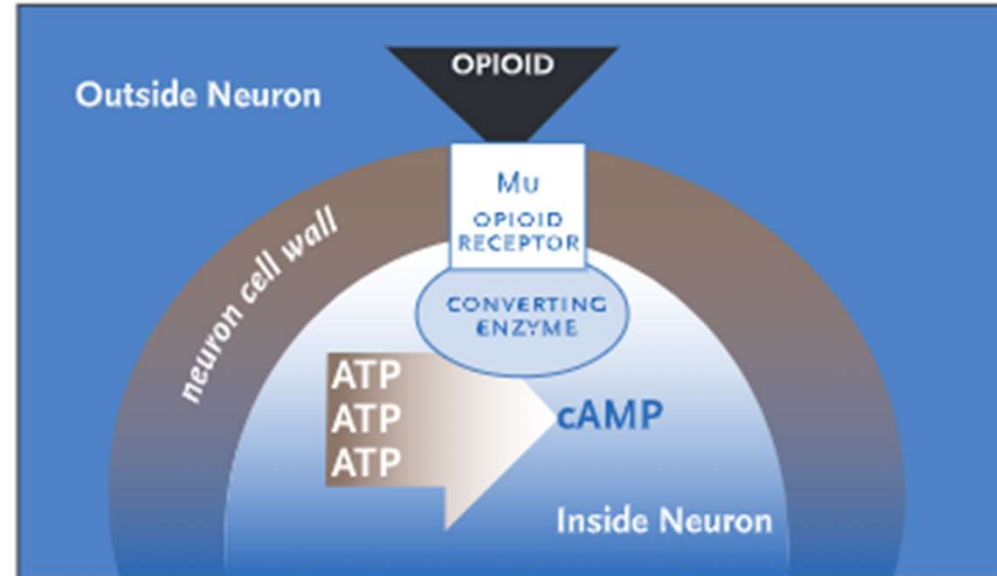
- You experience severe negative consequences associated with use
- You work, school or personal relationships are impaired as a consequence of your cannabis use
- You have a hard time quitting even though you know you have a problem
- You are more likely to experience uncomfortable withdrawal symptoms if you try to stop.
- You patterns of use have persisted for 12 months or longer

# Neurobiology of Dependence and Withdrawal

A. Baseline: Normal production of noradrenaline

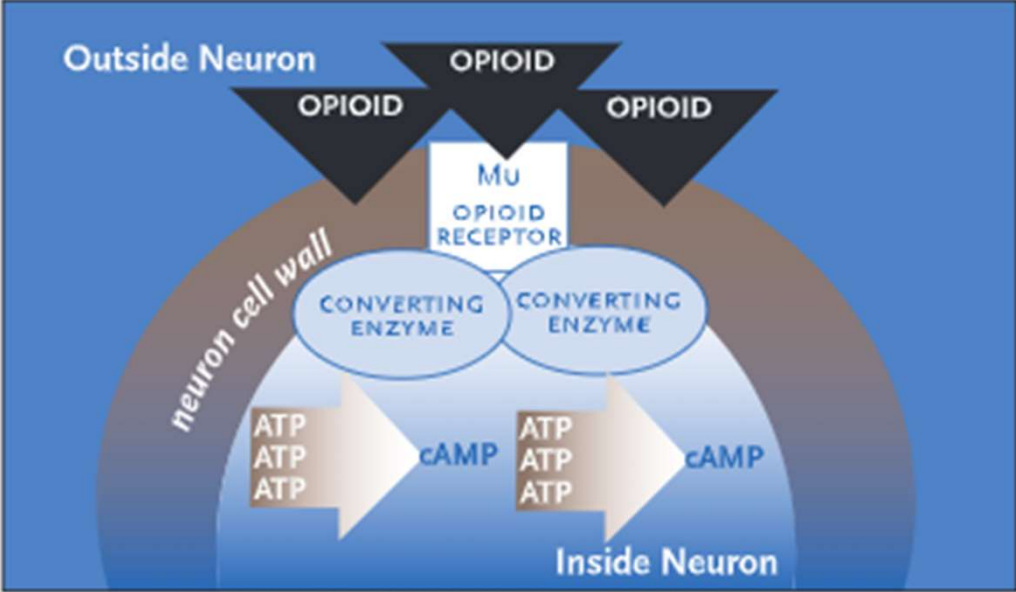


B. Acute opioid inhibition of converting enzyme: Abnormally low production of noradrenaline

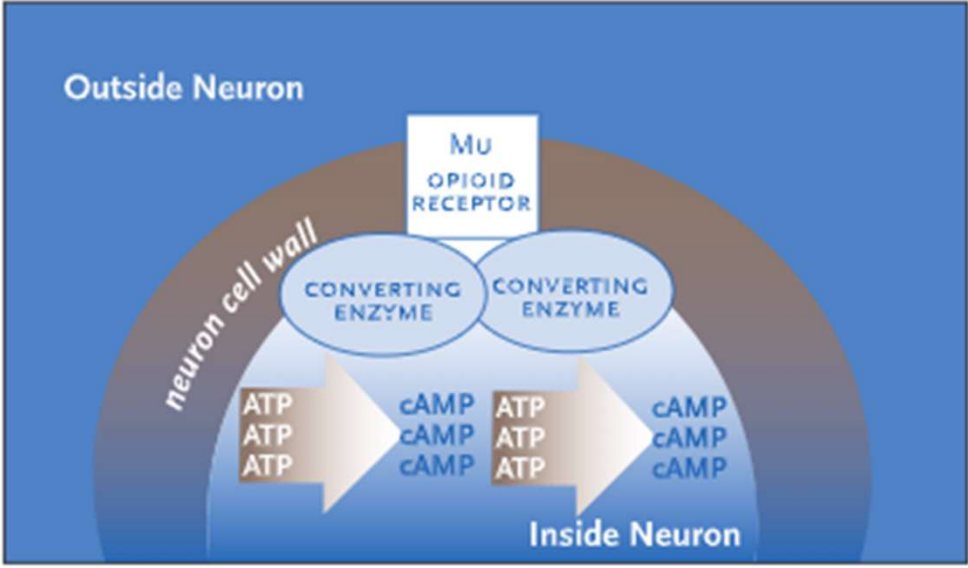


# Neurobiology of Dependence and Withdrawal

C. Chronic opioid inhibition leads to increased converting enzyme activity: Normal level of noradrenaline

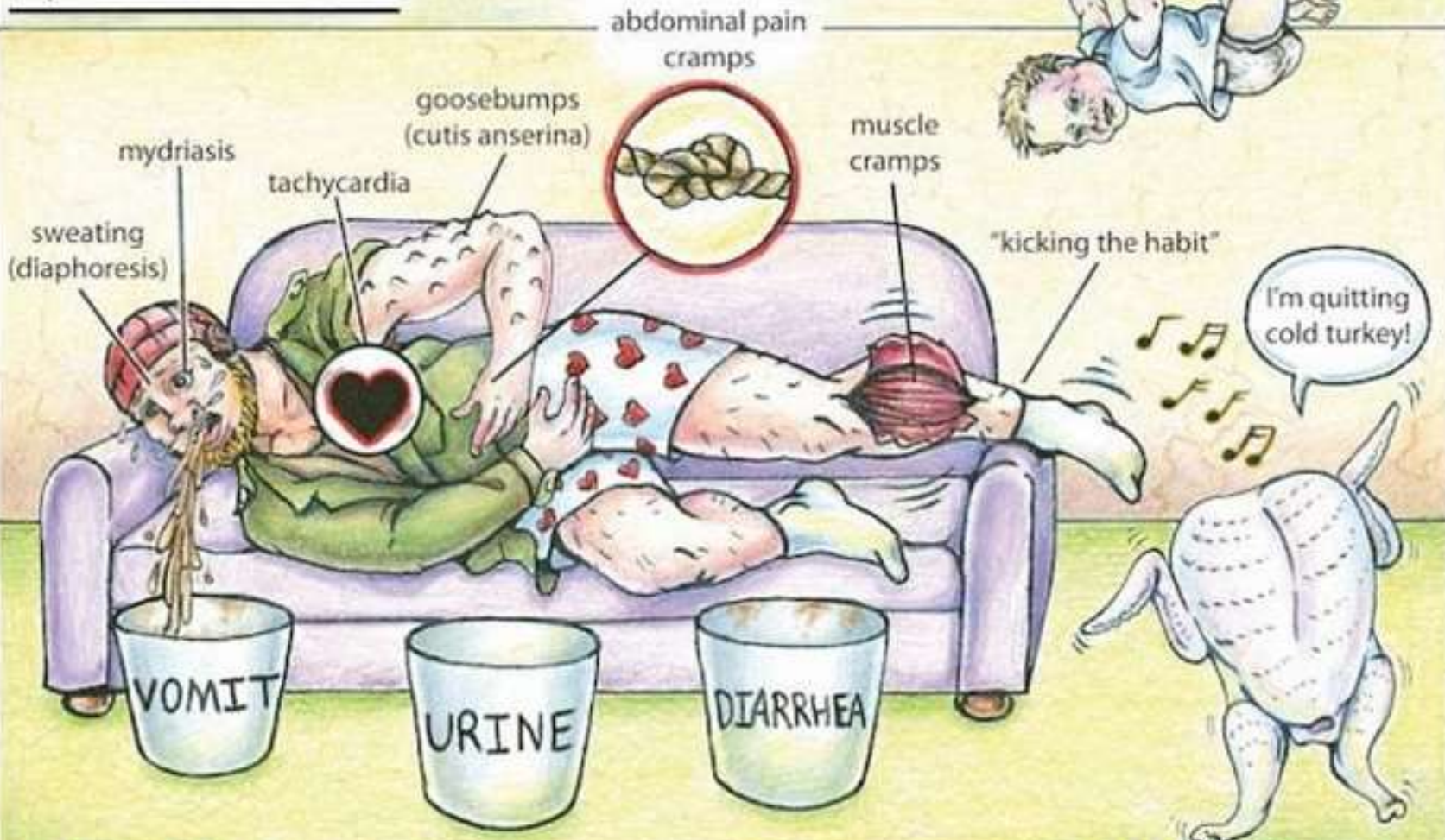


D. Discontinuing opioid leads to increased cyclic AMP due to loss of inhibition: Noradrenaline excessively high



# Opiate Withdrawal

KLOSS and BRUCE.com



KLOSS and BRUCE.com

Continuing Education

KLOSS and BRUCE.com

# Medications for Opioid Use Disorder (MOUD)



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**Methadone**

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**Naltrexone**

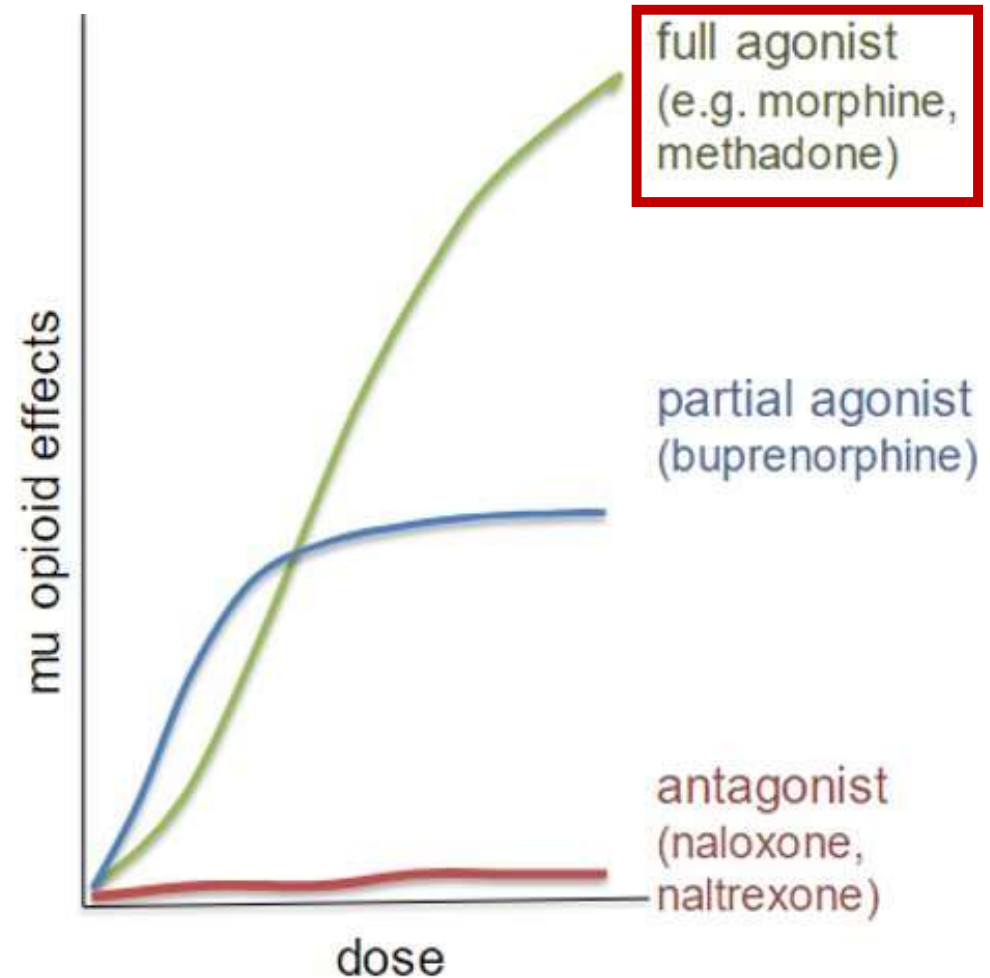
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**Buprenorphine**



# Methadone

- Full opioid **agonist** at mu receptor
- **Weak** affinity for mu receptor
  - Easily displaced by antagonists and partial agonists
- Biphasic elimination → variable half life
  - Alpha phase  $t_{1/2}$  life: 1.9 to 4.2 hrs
  - Beta phase  $t_{1/2}$  life: 8.5 to 47 hrs
- OUD Dosing: once daily
- No withdrawal needed for initiation



# Baxter et al. 2013

## Objective

- Expert panel consensus on methadone induction and stabilization

## Methods

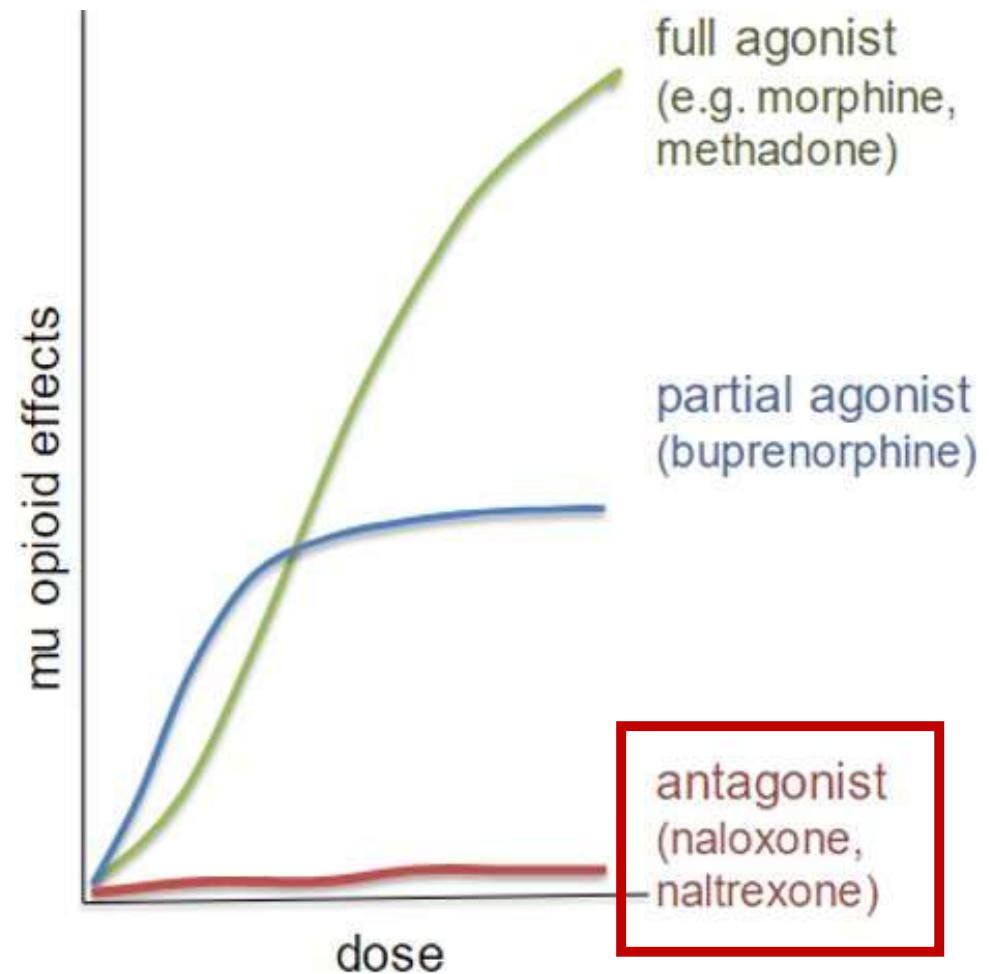
- Comprehensive literature search and evaluation by >100 experts

## Results

- Deaths during methadone initiation are due to
  - Initial dose too high
  - Dose increased too quickly
  - Drug interactions

# Naltrexone

- Full **antagonist** at mu receptor
- **High** affinity for mu receptor
  - Blocks and displaces other opioids
- Elimination half-life
  - Oral: ~4 hours
  - IM: 5-10 days
- OUD Dosing: 380 mg IM monthly
- Requires  $\geq 7$  days of abstinence for initiation



# Nunes et al. 2015

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**Objective** Identify patients best for naltrexone and patient-treatment matching factors

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**Methods** Moderator analysis on a previous placebo-controlled, multisite RCT that showed naltrexone superior to placebo in prevention of opioid use

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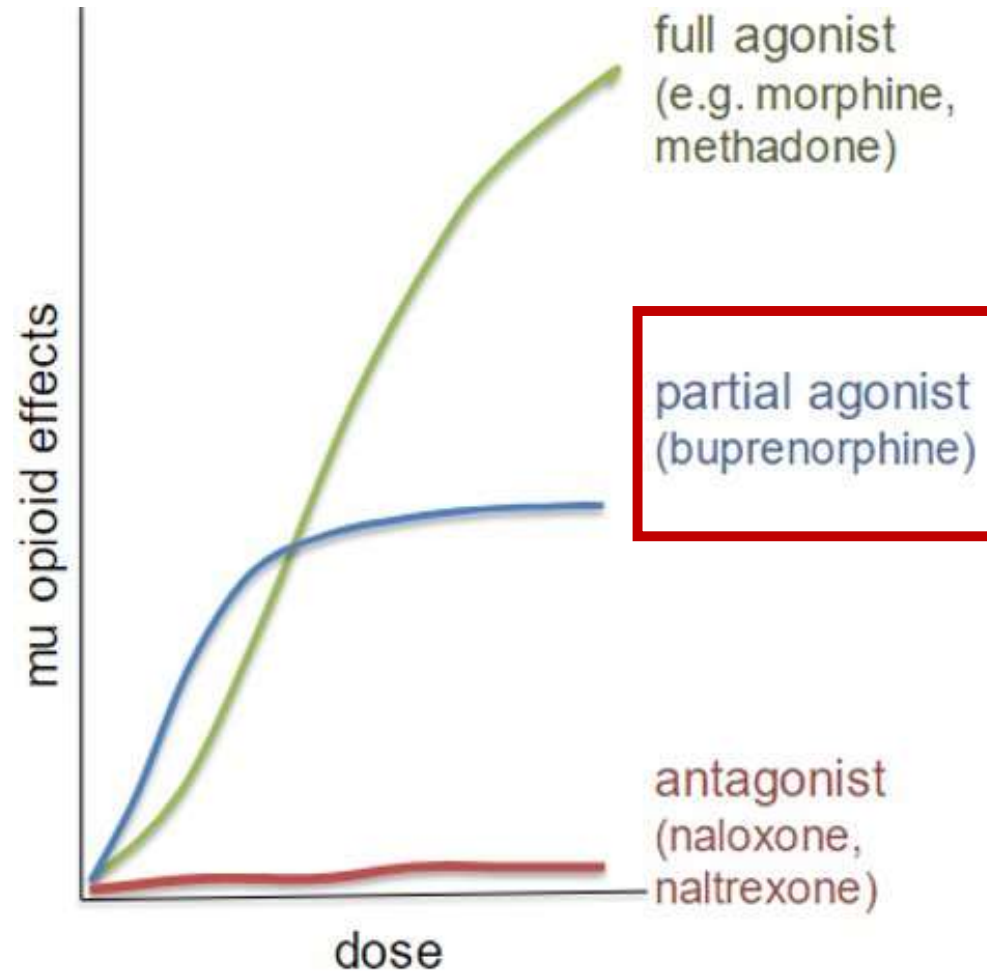
**Results** No evidence of patient-treatment matching effects

Patient preference is a reasonable basis

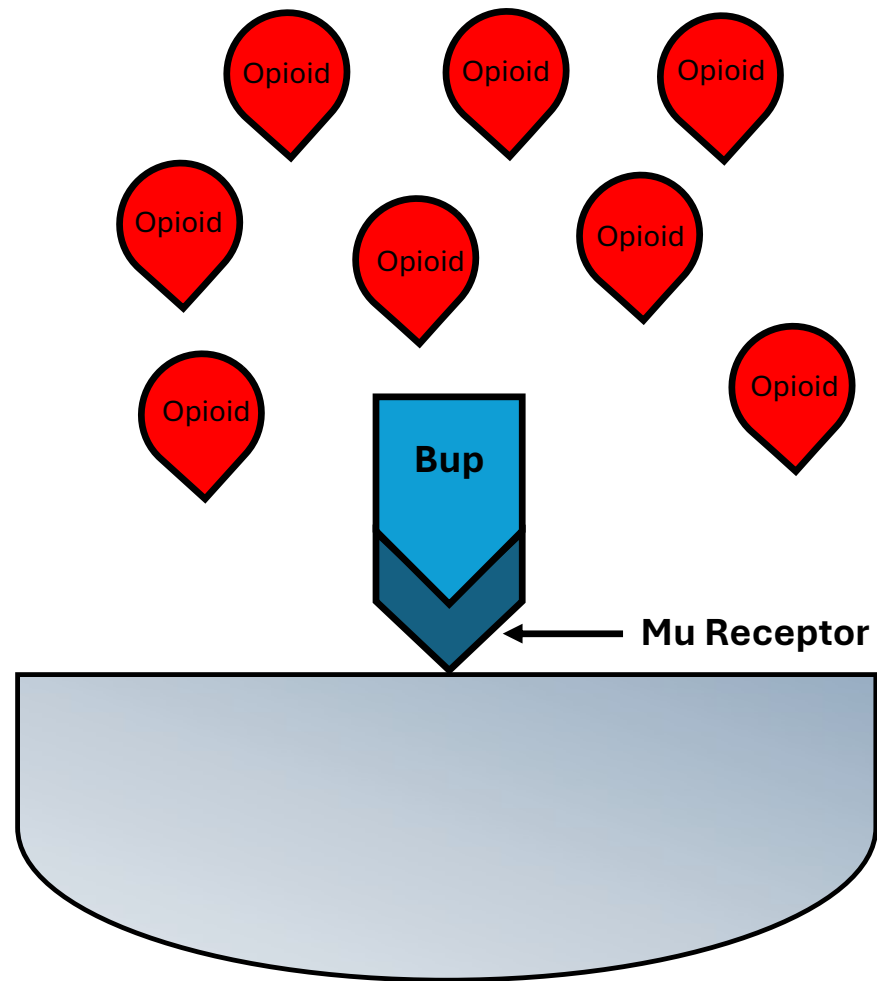
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# Buprenorphine

- Partial agonist at mu receptor
  - High affinity for mu receptor
    - Blocks and displaces other opioids
- Elimination half-life 24-36 hours
  - Dissociates slowly
- OUD Dosing: 16-32 mg SL daily
- Withdrawal required for initiation



# Buprenorphine



# Spreen et al. 2022

## Objective

- Evaluate the available literature on buprenorphine initiation strategies for patients with OUD and/or pain.

## Methods

- Systematic review
- Separated initiation type (traditional, microdosing, or miscellaneous)

## Results

- Individualize initiation depending on patient-specific factors

# Methadone vs. Buprenorphine

	<b>Methadone</b>	<b>Buprenorphine</b>
<b>Access</b>	<b>Opioid Treatment Program (OTP) only</b>	<b>Retail Pharmacy</b>
<b>Provider</b>	<b>OTP Provider only</b>	<b>Any physician</b>
<b>Initiation Requirement</b>	<b>Withdrawal not needed</b>	<b>Withdrawal preferred</b>
<b>Risk of Overdose</b>	<b>Not protective</b>	<b>Protects against overdose</b>
<b>Analgesia</b>	<b>Yes</b>	<b>Yes</b>

# Treatment Goals



Abstinence from all substances



Minimization of harms with continued use



# Principles of Harm Reduction



## Recognize

- Drug use is complex and multi-faceted
- Drug-related harm is affected by social inequalities



## Prioritize

- Quality of life and well-being over cessation of all drug use



## Minimize

- Harmful effects of drug use rather than ignore or condemn



## Provide

- Non-judgmental, non-coercive services



## Empower

- People who use drugs to be the primary agents of reducing harms



## Ensure

- People who use drugs have a voice in the programs and policies that serve them

# Everyday Examples



SEATBELTS



CONSUMING WATER WITH  
ALCOHOLIC BEVERAGES



WEARING A HELMET

# Why Harm Reduction?

- Injection drug users are 16.3 times more likely to develop MRSA
- Cost-saving and cost-effective
- IDU-related infections
  - Infective endocarditis
  - Osteomyelitis
  - Skin and soft tissue infections (SSTIs)
  - Hepatitis B/C
  - HIV
- Improve the health and safety of people who use drugs (PWUD)

# Harm Reduction in OUD

- Strategies to mitigate the medical consequences perpetuated by injection drug use (IDU)
- Belief in, and respect for the rights of people who use drugs
- Focus on decreasing harmful effects, not achieving abstinence

**Safe Injection Kits**

**Naloxone Provision**

**Fentanyl Test Strips**

**Safe Consumption  
Sites**

**Syringe Exchange  
Programs**

# Paquette et al. 2018

## Purpose

- Examine California Senate Bill (SB41) implementation from the perspectives of both pharmacy staff and PWID

## Study design

- Multi-phase, sequential mixed methods

## Methods

- Syringe purchase trial then pharmacy survey
- Exploratory interview with PWID

## Results

- 21% of purchase attempts were successful
- 29% of pharmacists and pharmacy staff willing to sell nonprescription syringes to PWID

**STIGMA**

# Stigma...What's the Big Deal?

Stems from the idea of “moral failing”

Associated with bad character and lack of moral strength

Similar level of stigma between healthcare professionals and the general population

# Types of Stigma

## Public/Social

- Cultural norms and stereotypes

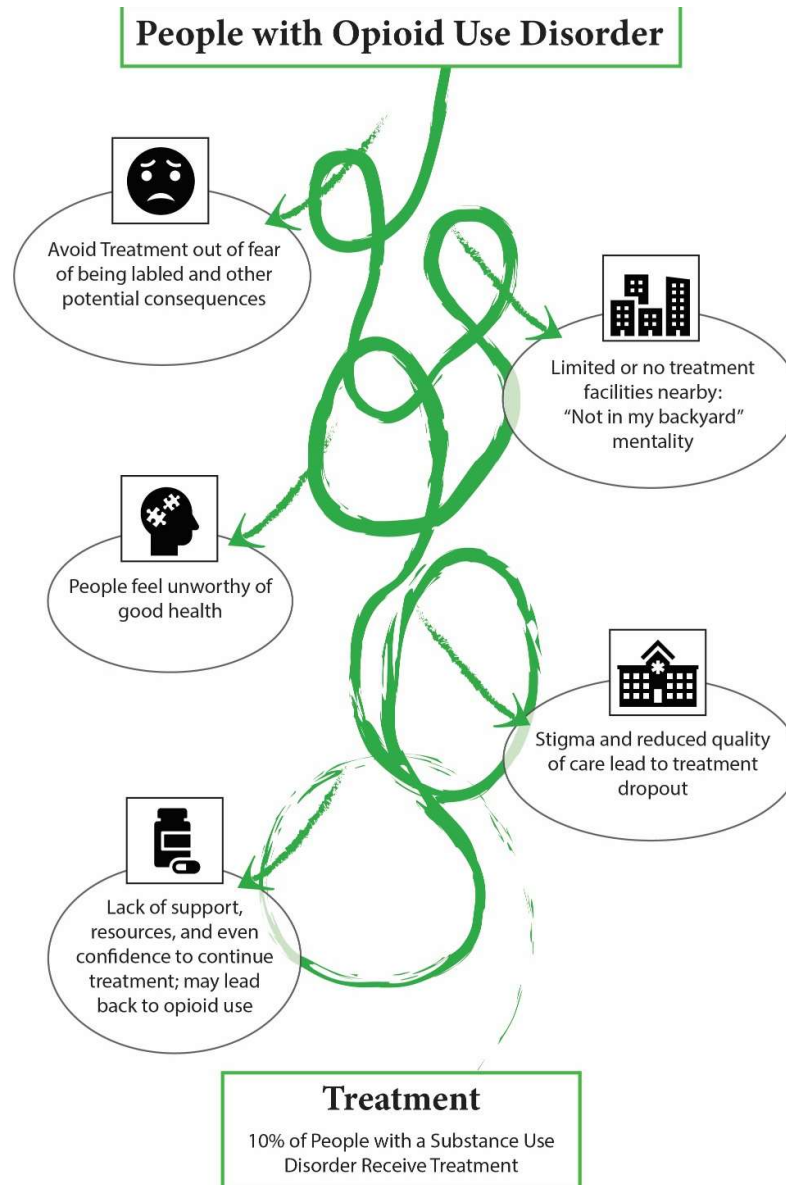
## Structural

- Societal-level policies and laws

## Internalized/Self

- Acceptance of stigmatizing attributions

# The Pathway to Treatment



Source:  
<https://extension.usu.edu/heart/research/reducing-stigma-towards-opioid-use-disorder-treatment>



# Experiences of PWUD

**The hospital staff “kind of look down on you. ... They give you dirty, snotty looks.”**

**“When you go to the hospital and you’re a drug addict, ... your life isn’t as valuable, you’re a second- or third-class citizen...”**

**“I never have [attempted to buy syringes from a pharmacy]. I don’t want the stigma attached to me.”**

**“They [PWUD] don’t want to go and have someone look down their nose and tell them what a piece of crap you are. ...they’d literally rather die than face that.”**

**“Once the doctors realize that you’re a drug user, they sit you on the back side and they’ll take that person in front of you...”**

**“They’re judging the way you look, for sure.”**

# Words Matter

Instead of...	Use...
Addict/Junkie/Drug abuser	Person with substance use disorder Person with opioid use disorder
Failing a drug test	Testing positive on a drug screen
Habit	Substance use disorder Drug addiction
Abuse	Use Misuse
Clean	In remission or recovery Not taking drugs Testing negative/positive (on a drug screen)

# Addressing the Stigma



Education, advocacy,  
compassion



Reductions in both  
public and structural  
stigma



Antidiscrimination and  
pro-acceptance  
initiatives



Will take time to be felt  
by those with a SUD

# Food for Thought

Is there a place for pharmacists in addiction treatment?



How can we advance the practice of pharmacy to increase access to treatment for substance use disorders?



What are ways that we can reduce stigma in our everyday work?

# Questions?

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