



***Special Considerations for Pain Management in the  
Incarcerated Population and Patients with  
Substance Use Disorders***



This educational activity is sponsored by Postgraduate Healthcare Education, LLC.

This activity is supported by an independent educational grant from the Opioid Analgesic REMS Program Companies. Please see <https://www.opioidanalgesicrems.com/home.html> for a listing of REMS Program Companies. This activity is intended to be fully compliant with Opioid Analgesic REMS education requirements issued by the US Food and Drug Administration (FDA).

# Faculty

**Michele Matthews, PharmD, BCACP, FASHP**

Professor & Vice Chair, Department of Pharmacy Practice  
Massachusetts College of Pharmacy and Health Sciences  
Boston, MA



**Lindsay Hovestreydt, PharmD, MBA, BCPS**

Pharmacy Director - Finance, Strategy, Medication Utilization  
NewYork-Presbyterian Hospital  
New York, NY





# Disclosures

Drs. Matthews and Hovestreydt state that they have no relevant affiliation or financial relationship or relationship to products or devices with a commercial interest related to the content of this activity to disclose.

The clinical reviewer, Michele A. Faulkner, PharmD, FASHP, discloses that she is on the Speakers' bureau for Biogen (area of focus: Alzheimer's disease).

Susanne Batesko, RN, BSN, Robin Carrino, Robin Soboti, RPh, CHCP, as well as the planners, managers, and other individuals, not previously disclosed, who are in a position to control the content of Postgraduate Healthcare Education (PHE) continuing education activities hereby state that they have no relevant conflicts of interest and no financial relationships or relationships to products or devices during the past 12 months to disclose in relation to this activity. PHE is committed to providing participants with a quality learning experience and to improve clinical outcomes without promoting the financial interests of a proprietary business.

# Accreditation



Postgraduate Healthcare Education, LLC is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education.

UAN: 0430-0000-21-125-L08-P

Credits: 1.5 hours (0.15 CEU)

Type of Activity: Knowledge

# Learning Objectives

Upon completion of this activity, the participant should be better able to:

- Review the barriers that incarceration creates for effective pain treatment
- Compare local, state, and federal jail and prison rules and regulations on pain medication
- Discuss continuity of care when inmates re-enter society
- Describe characteristics that increase complexity of pain management and opioid analgesic use in people with substance use disorders
- Discuss treatment strategies for pain management that reduce risk of additional addiction or diversion



## Part 1A

# Pain Management in the Incarcerated Population

# Introduction to Acute Pain

## Acute pain:

- Sudden, intended to be a warning of disease or threat to body such as injury
- May occur from intended or unintended trauma
- Resolves when the causal event or disease is resolved

## Mechanism of acute pain:

- Injury causes neurotransmitter release which sensitizes neuroreceptors at the site of the injury to send impulses to the dorsal root ganglia of the dorsal horn of the spinal cord
- Release of subsequent neurotransmitters cause impulses to transmit to brain where they are interpreted and perceived to be pain

Pain Management of Inmates. Federal Bureau of Prisons Clinical Guidance. Available at: [https://www.bop.gov/resources/pdfs/pain\\_mgmt\\_inmates\\_cpg.pdf](https://www.bop.gov/resources/pdfs/pain_mgmt_inmates_cpg.pdf)

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.



# Introduction to Chronic Pain

## Chronic pain:

- Uncomfortable and persistent sensation
- Typically defined as pain lasting >3 months, or longer than expected for the given injury or trauma causing acute pain
- Considered pain without biological value that persists even when the precipitating injury has healed
- May be continuous or intermittent

## Mechanism of Chronic pain:

- Peripheral neuroreceptor sensitization causing lowered pain threshold at peripheral nerves
- Central neuroreceptor sensitization at the dorsal root ganglia

Pain Management of Inmates. Federal Bureau of Prisons Clinical Guidance. Available at: [https://www.bop.gov/resources/pdfs/pain\\_mgmt\\_inmates\\_cpg.pdf](https://www.bop.gov/resources/pdfs/pain_mgmt_inmates_cpg.pdf)

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

An illustration on the left side of the slide shows a series of overlapping circular frames, similar to a tunnel or a film strip. Inside these frames, various people are depicted in different poses: one person is lying down, another is sitting, and a third is leaning forward. The colors are soft and pastel, with shades of blue, purple, and green.

# Incarcerated Populations

## **Incidence of incarcerated populations:**

- Between 1980-2014 US incarceration rate rose 220% due to harsher sentencing
- In 2014, 2.2M incarcerated, and 4.7M on probation or parole

## **Demographics of incarcerated populations:**

- Higher rates of incarcerated in minorities and those with lower levels of education
- Minorities disproportionality arrested and convicted of offences
- More likely to have mental and physical health problems
- More likely to have hypertension, asthma, arthritis, Hep C, HIV than general population

[Incarceration | Healthy People 2020](https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/incarceration) <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/incarceration>

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Incarcerated Populations (cont'd)

- Almost 44% of state inmates and 39% of federal inmates report having a medical problem (other studies have shown up to 60%)
- 12.3% have had surgery since admission, 50% have had dental problems
- One study of >170K inmates noted 15% of the medical conditions were considered diseases of musculoskeletal and connective tissue which typically indicates pain
- In 2004, more than 30% of prisoners aged 45 or older reported a history of arthritis
  - This number is expected to be significantly higher as the U.S. population of older adults has continued to grow

Medical problems reported by prison inmates by gender and age, 2004. Bureau of Justice Statistics. Available at: <https://bjs.ojp.gov/library/publications/medical-problems-prisoners/table2>  
Prison inmates who reported a medical problem by gender and age, 2004. Available at [Table 1. Prison inmates who reported a medical problem by gender and age, 2004 | Bureau of Justice Statistics \(ojp.gov\)](#)

Pain Management of Inmates. Federal Bureau of Prisons Clinical Guidance. Available at: [https://www.bop.gov/resources/pdfs/pain\\_mgmt\\_inmates\\_cpg.pdf](https://www.bop.gov/resources/pdfs/pain_mgmt_inmates_cpg.pdf)

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Impact of Pain on Incarcerated Populations

- In 1976, the United States Supreme Court ruled that inmates in correctional facilities have a **constitutional right to health care** under the eighth amendment to the U.S. Constitution.
- Guidelines and national accreditation standards set forth by organizations such as the National Commission on Correctional Health Care (NCCCHC) have improved quality of care in this population
- Research within state prison systems supports the presumption that chronic pain occurs within the incarcerated population at a rate that is similar to the general population

Gamble Estelle v. 429 US 97. Washington, DC: U.S. Supreme Court Center; 1976

Rold W, Anno BJ. Correctional health care: guidelines for the management of an adequate delivery system. Chicago, IL: National Commission on Correctional Health Care; 2001. Legal considerations in the delivery of health care services in prisons and jails

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Barriers to Effective Pain Management

- The Federal Bureau of Prisons has developed a clinical guideline on the management of pain in inmates
- This guideline details appropriate assessment and treatment strategies and encourages the integration of multidisciplinary care teams, however barriers exist:
  - **Access to such interdisciplinary care teams** as well as resources is not clear
  - While nonpharmacologic therapies are recommended as an alternative to medications that pose a diversion or misuse risk, these therapeutic options **may not be commonly available** in correctional settings

Pain Management of Inmates. Federal Bureau of Prisons Clinical Guidance. Available at: [https://www.bop.gov/resources/pdfs/pain\\_mgmt\\_inmates\\_cpg.pdf](https://www.bop.gov/resources/pdfs/pain_mgmt_inmates_cpg.pdf)

AMA J Ethics. 2017;19(9):894-902. doi: 10.1001/journalofethics.2017.19.9.ecas3-1709

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Pain Management Strategies

- The National Commission on Correctional Health Care position statement encourages the use of opioids after **weighing all treatment options** and **with consideration of benefits and risks** for the patient and the facility (potential for diversion), recognizing that problems are common in correctional populations, including the following:
  - Substance use disorders
  - Chemical dependency
  - Difficulty with management of prescription medications

Management of Noncancer Chronic Pain. National Commission on Correctional Health Care. Available at: <https://www.ncchc.org/management-of-noncancer-chronic-pain>

# Best Practices for Pain Management

- Post-incarceration deaths from overdose decreased among inmates released from incarceration after implementation of a comprehensive medication assistance treatment program in a statewide correctional facility
  - Suggests that linkage of medication and supportive care after release is a promising strategy

Green TC, Clarke J, Brinkley-Rubinstein L, et al. Postincarceration Fatal Overdoses After Implementing Medications for Addiction Treatment in a Statewide Correctional System. *JAMA Psychiatry*. 2018;75(4):405–407. doi:10.1001/jamapsychiatry.2017.4614

Joudrey PJ, Khan MR, Wang EA, et al. A conceptual model for understanding post-release opioid-related overdose risk. *Addict Sci Clin Pract*. 2019;14(1):17. Published 2019 Apr 15. doi:10.1186/s13722-019-0145-5

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Chronic Pain Management

## Recommendations – National Commission on Correctional Health Care

Treat chronic pain similar to other chronic conditions with structured plan and routine monitoring

Determine measurable goals of therapy and assess progress

Utilize multidisciplinary care team when possible

Optimize nonpharmacologic therapies

Avoid policies and procedures that outright prohibit opioids

Utilize medications sparingly when possible

Utilize care coordination upon reentry into community

Correctional Health Care: Guidelines for the Management of an Adequate Delivery System. National Institute of Corrections. Available at: <https://nicic.gov/correctional-health-care-guidelines-management-adequate-delivery-system>

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.



# Use of Opioid Therapy

## Selection Criteria For Prescribing Opioids in Bureau of Prisons

Non-opioids have been optimized and have met therapeutic goals. Dose increases would:

- Cause significant risk of side effects
- Are contraindicated due to comorbidities
- Exceed manufacturer recommendations

Non-opioid therapy has resulted in a notable lack of pain control with breakthrough pain or pain fluctuations

Non pharmacologic therapies have been optimized

Benefit of opioids likely to outweigh the risk

Clear and measurable goals have been established, including plan for discontinuation if benefits do not outweigh the risks of use

Pain Management of Inmates. Federal Bureau of Prisons Clinical Guidance. Available at: [https://www.bop.gov/resources/pdfs/pain\\_mgmt\\_inmates\\_cpg.pdf](https://www.bop.gov/resources/pdfs/pain_mgmt_inmates_cpg.pdf)

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Contraindications of Opioid Therapy

## Absolute Contraindications

- Respiratory instability
- Acute psychiatric instability
- Uncontrolled suicide risk
- True allergy to opioid or metabolite
- Risk of life-threatening drug interaction
- QTc interval >500 ms (methadone)
- Prior trials failed due to intolerance, serious adverse effects, lack of efficacy
- Active diversion in past year or past history of serious misuse behaviors

## Relative Contraindications

- Any history of CS diversion
- Any non-nicotine substance disorder
- Medical conditions including- Sleep apnea (not on CPAP), COPD, cardiac conditions (methadone), paralytic ileus, respiratory depression
- Complex pain without a clear etiology
- Neuropathic or visceral pain
- Conditions that may impact compliance

# Rules and Regulations on Pain Management – Methadone

- Current regulations do NOT require a special license or registration for methadone prescribing for pain management
- Methadone for detoxification DOES require a special license

Pain Management of Inmates. Federal Bureau of Prisons Clinical Guidance. Available at: [https://www.bop.gov/resources/pdfs/pain\\_mgmt\\_inmates\\_cpg.pdf](https://www.bop.gov/resources/pdfs/pain_mgmt_inmates_cpg.pdf)

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Continuity of Care when Re-entering Society

- 66% of inmates released are rearrested and 50% are incarcerated again within 3 years of release from prison
- Within 2 weeks of release, prisoners are 129X more likely than general population to die of a drug overdose
- Health consequences may be complicated by various factors including
  - high rates of poverty and unemployment
  - unstable housing and homelessness
  - low literacy
  - family problems

[Incarceration | Healthy People 2020](https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/incarceration) <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/incarceration>

Binswanger IA, Nowels C, Corsi KF, et al. "From the prison door right to the sidewalk, everything went downhill," a qualitative study of the health experiences of recently released inmates. *Int J Law Psychiatry*. 2011;34(4):249-255. doi:10.1016/j.ijlp.2011.07.002

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Continuity of Care when Re-entering Society (cont'd)

- Improved release planning and coordination between the medical, mental health and criminal justice systems may reduce the risk of poor health outcomes for this population
- The Affordable Care Act created an opportunity for states to link greater numbers of people leaving prison with coverage by expanding Medicaid eligibility criteria
- Programs that provide comprehensive health care services while incarcerated, and increased handoff upon release can be beneficial



# Questions and Answers



## Part 1B

# Implications for Pharmacists

# Pharmacists Involvement with Incarcerated Populations

- While formularies in the correctional setting should be consistent with national clinical guidelines, they are designed to be cost-effective which can limit treatment options for pain
- A pharmacist should be involved in the care of all inmate-patients to ensure proper drug therapy management of these complex conditions common to the correctional environment
- Select state departments of corrections spent more of their health budgets on drugs than did large insurers

Correctional Health Care: Guidelines for the Management of an Adequate Delivery System. National Institute of Corrections. Available at: <https://nicic.gov/correctional-health-care-guidelines-management-adequate-delivery-system>

Bott QD. ASHP Guidelines on Pharmacy Services in Correctional Facilities. Am J Health Syst Pharm. 2016;73(21):1784-1790. doi:10.2146/ajhp160143

Pharmaceuticals in State Prisons. Available at: <https://www.pewtrusts.org/~media/assets/2017/12/pharmaceuticals-in-state-prisons.pdf>

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.



# ASHP Guidelines of Pharmacy Services in Correctional Settings

## Clinical considerations:

- Formulary drug products should align with national clinical guidelines
- Drugs and dosage forms should be considered for abuse potential
- Cost and safety risks should NOT be the sole determinants for drug selection

Bott QD. ASHP Guidelines on Pharmacy Services in Correctional Facilities. Am J Health Syst Pharm. 2016;73(21):1784-1790. doi:10.2146/ajhp160143

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Education Opportunities for Pharmacists

- Familiarize with Opioid Analgesics Risk Evaluation and Mitigation Strategies (REMS)
  - Education Blueprint for Health Care Providers Involved in the Treatment and Monitoring of Patients with Pain
  - Providers information for health care providers to use for counseling patients on risks and considerations of the use of opioids
- Counsel patients and providers on non pharmacologic alternatives, and non-opioid alternative therapies to manage pain where possible
- Ensure proper security of opioids

<https://www.fda.gov/drugs/information-drug-class/opioid-analgesic-risk-evaluation-and-mitigation-strategy-rems>

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.



# Questions and Answers



## Part 2A

# Patients with Substance Use Disorders

# WORDS MATTER

Using the right language and putting the patient first has a real impact on reducing stigma and helping those with substance use disorder (SUD) seek and get the treatment they need

## NON-STIGMATIZING LANGUAGE

- Person with a substance use disorder
- Babies with an opioid dependency
- Substance use disorder or addiction
- Use, misuse
- Risky, unhealthy, or heavy use
- Person in recovery
- Abstinent
- Not drinking or taking drugs
- Treatment or medication for addiction
- Medication for Opioid Use Disorder/Alcohol Use Disorder
- Positive, negative (toxicology screen results)

## STIGMATIZING LANGUAGE

- Substance abuser or drug abuser
- Alcoholic
- Addict
- User
- Abuser
- Drunk
- Junkie
- Addicted Babies/Born addicted
- Drug habit
- Abuse
- Problem
- Clean
- Substitution or replacement therapy
- Medication-Assisted Treatment
- Clean, dirty

<https://www.bmc.org/addiction/reducing-stigma>

# Public Health Challenges

- Misconceptions / misunderstanding of addiction
- Perpetuation of stigma
- Unintentional drug exposures
- Combined use of opioids and stimulants is associated with higher risk of harm
- No approved treatments for stimulant use disorders
- Mistreated or undertreated pain due to fear of prescribing opioids

# Risk Factors for Substance Use Disorders (SUDs)

- Opioid receptors
- Dopamine
- Novelty seeking
- Harm avoidance
- Impulsivity
- Psychiatric disorders

Genetics

Environment

- Family
- Adverse childhood experiences
- Stressors
- Lack of positive experiences
- Access through nonmedical sources

Neurobiology of Addiction. Provider Clinical Support System. Available at: <https://pcssnow.org/event/neurobiology-of-addiction/>

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# DSM 5 Criteria for OUD Diagnosis

## Diagnostic Criteria for Substance Use Disorders

Using in larger amounts or for longer than intended
Wanting to cut down or stop using, but not managing to
Spending a lot of time to get, use, or recover from use
Craving
Inability to manage commitments due to use
Continuing to use, even when it causes problems in relationships
Giving up important activities because of use
Continuing to use, even when it puts you in danger
Continuing to use, even when physical or psychological problems may be made worse by use
Increasing tolerance
Withdrawal symptoms

Notes: Fewer than 2 symptoms = no disorder; 2-3 = mild disorder; 4-5 = moderate disorder; 6 or more = severe disorder.

Criteria from American Psychiatric Association (2013). Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition,. Washington, DC, American Psychiatric Association page 541.

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.



# Goals of Medications for OUD (MOUD)

- Reduce mortality
  - All cause and drug-related
- Reduce associated morbidity
  - Transmission of blood-borne viruses
  - Infectious complications from IV drug use
- Reduce and/or discontinue opioid use
- Increase retention in addiction treatment
- Improve general health and well-being
- Reduce drug-related crime

# Comparison of Pharmacotherapy for OUD

	Methadone	Buprenorphine	Naltrexone
<b>Mu-opioid receptor activity</b>	Full agonist	Partial agonist	Full antagonist
<b>FDA-Approved Formulations</b>	Oral solution, dissolvable tablet	Transmucosal buprenorphine/naloxone (Suboxone, Bunavail, Zubsolv) Injectable buprenorphine (Sublocade)	Oral tablets, Extended-release IM injection (Vivitrol)
<b>Dosing</b>	Oral: 20-30 mg once daily; titrated up to 80-120 mg once daily as tolerated	Transmucosal: 8-16 mg (or equivalent) once daily (or in divided doses) Sublocade (for patients maintained on $\leq$ 8 mg/day): 300 mg subcutaneous injection monthly for 2 doses then 100 mg monthly	Oral: 25 mg on day 1 then 50 mg daily Vivitrol: 380 mg IM every 21-28 days <i>Dose IM 7-14 days after last opioid dose to prevent withdrawal</i>
<b>Treatment Retention Rates</b>	60%	<60%	20-50%
<b>Setting</b>	Licensed outpatient treatment program	Any medical setting; X waiver required	Any medical setting
<b>Additional benefits</b>	Use in co-morbid pain, high potency, high structure of delivery setting	Safety compared to methadone, use in co-morbid pain, dosing flexibility, less structured treatment setting	Low diversion, no physical dependence, verifiable dosing, less stigma, less structured treatment setting

Medications for Opioid Use Disorder. SAMHSA. Available at: [https://store.samhsa.gov/sites/default/files/SAMHSA\\_Digital\\_Download/PEP20-02-01-006\\_050820.pdf](https://store.samhsa.gov/sites/default/files/SAMHSA_Digital_Download/PEP20-02-01-006_050820.pdf)

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Common Threads: Pain and OUD

- Approximately 50% of patients maintained on medications for opioid use disorder (MOUD) have reported chronic pain
- Psychiatric problems are associated with ↑ pain intensity in patients receiving MOUD
- Chronic pain is associated with poor abstinence rates to MOUD
- Craving has been shown to predict lapse to opioid use in patients receiving treatment for OUD
- Abnormal pain sensitivity, associated with craving, can persist for months following abstinence which may adversely impact the treatment outcomes and contribute to relapse

Sirohi S et al. J Pain Res. 2016 Nov 4;9:963-966

# Challenges of Chronic Pain Management in Patients with OUD

- High rates of co-occurring psychiatric disorders
  - Anxiety, depression, post-traumatic stress disorder, and somatoform disorders
- Greater risk for aberrant medication-related behaviors
- Increased use of high-cost health resources

# Approach to Chronic Pain Management in Patients with OUD

## Perform a comprehensive initial assessment

- Impact of pain on function and quality of life
- Current and past pain therapies
- History of personal and family substance use
- Current substance use patterns
- Screening tools
  - Risk assessment questionnaires
  - Urine drug testing
  - Prescription drug monitoring program (PDMP) data
  - Risk factors for serious opioid-related adverse events

[https://store.samhsa.gov/sites/default/files/SAMHSA\\_Digital\\_Download/PEP20-02-01-022.pdf](https://store.samhsa.gov/sites/default/files/SAMHSA_Digital_Download/PEP20-02-01-022.pdf)

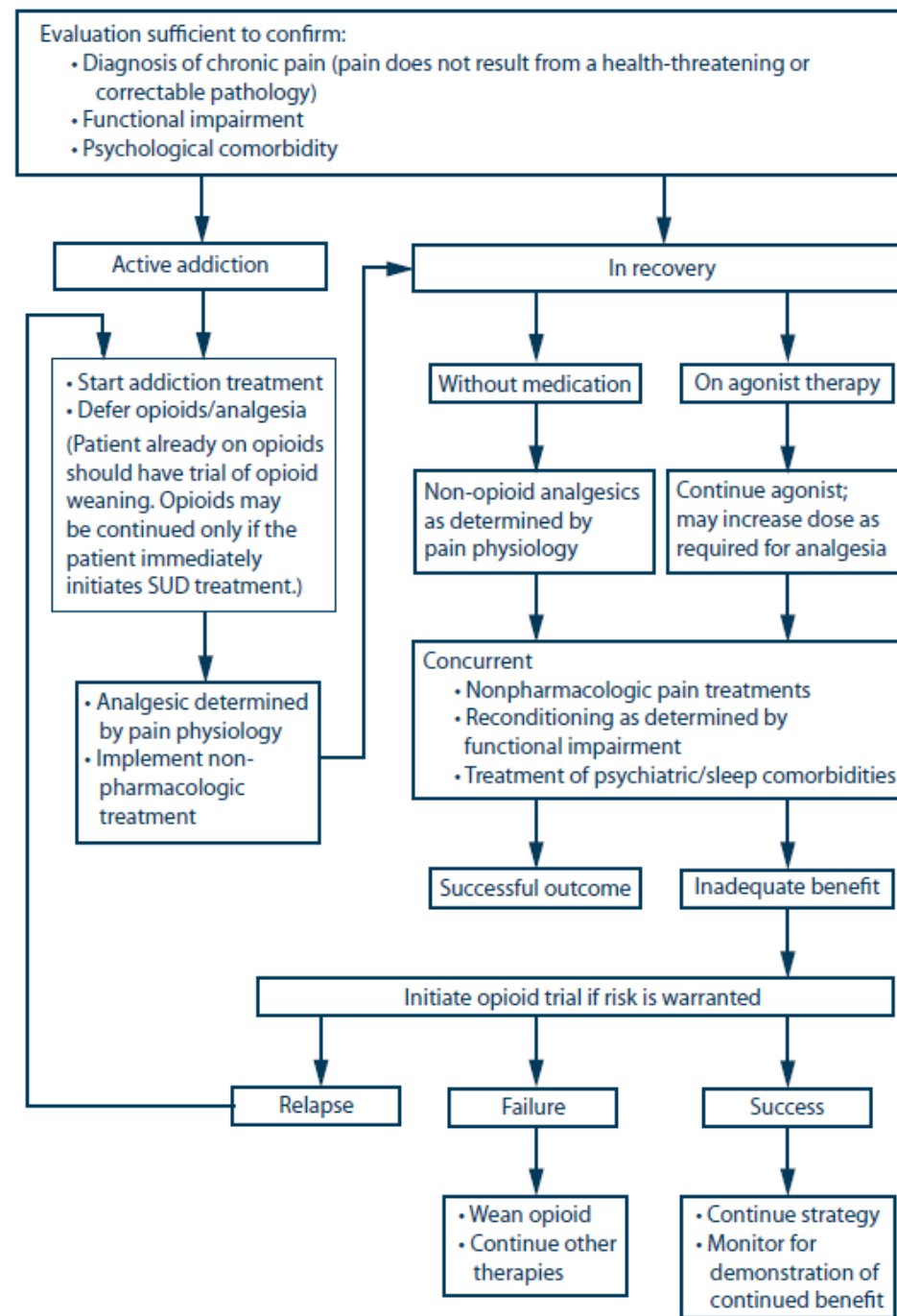
These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Approach to Chronic Pain Management in Patients with OUD (cont'd)


- Discuss concerns openly without using judgment
- Share concerns for risk
- Review alternative pain management strategies
- Explore treatment options for OUD management
- Optimize mental health treatment
- Develop and document a plan for managing anticipated acute pain
- **Don't abandon the patient**

# Algorithm for Managing Chronic Pain in Patients With SUDs

<https://store.samhsa.gov/sites/default/files/d7/priv/sma13-4785.pdf>



# Pharmacotherapy for Chronic Pain by Indication



Drug/Therapeutic Class	Indication
<b>Acetaminophen</b>	Musculoskeletal (MSK) pain
<b>Anticonvulsants</b>	Fibromyalgia, neuropathic pain
<b>Antidepressants</b>	Fibromyalgia, MSK pain, or neuropathic pain ± h/o depression
<b>Cannabinoids</b>	Neuropathic pain
<b>Low-dose naltrexone</b>	Refractory chronic pain, fibromyalgia
<b>Muscle relaxants</b>	MSK pain
<b>NMDA-receptor antagonists</b>	Neuropathic pain
<b>NSAIDs</b>	MSK pain
<b>Opioids</b>	MSK and neuropathic pain; avoid in fibromyalgia (tramadol possible exception)
<b>Topical agents</b>	Localized pain; use NSAIDs for MSK pain; use capsaicin or lidocaine for neuropathic pain

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.



# Buprenorphine vs. Methadone: Pharmacology

	<b>Buprenorphine</b>	<b>Methadone</b>
Mu Opioid Receptor	Partial agonist High affinity Low to moderate activity	Agonist High affinity
Kappa Opioid Receptor	Antagonist High affinity Low to moderate activity	Agonist Low to high affinity
NMDA Receptor	NMDA receptor blockade	NMDA receptor blockade
Serotonin Reuptake Inhibition	Possible serotonin reuptake inhibition	Serotonin reuptake inhibition
Duration of Analgesia	6-12 hours	6-12 hours

Medications for Opioid Use Disorder. SAMHSA. Available at: [https://store.samhsa.gov/sites/default/files/SAMHSA\\_Digital\\_Download/PEP20-02-01-006\\_050820.pdf](https://store.samhsa.gov/sites/default/files/SAMHSA_Digital_Download/PEP20-02-01-006_050820.pdf)

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Buprenorphine vs. Methadone: Clinical Indications

## **PAIN MANAGEMENT**

### **Buprenorphine**

- No special requirements
- Midlevel providers can prescribe
- Dosed 2-4 times daily
- May require higher doses

### **Methadone**

- No special requirements
- Midlevel providers can prescribe
- May be effective at lower doses
- Dosed 2-4 times daily

## **OUD**

### **Buprenorphine**

Requires “X” waiver  
Only physicians, PAs, and NPs can prescribe  
Dosed once daily

### **Methadone**

Strict federal guidelines  
Only physicians can prescribe  
Dosed once daily, usually at high doses

# Myths of Managing Acute Pain in Patients with OUD

- Taking methadone or buprenorphine should provide adequate analgesia
- Even if for acute pain, giving opioids to patients on methadone or buprenorphine is harmful because it will result in a relapse
- Adding opioids for acute pain will lead to an overdose
- Patients on methadone or buprenorphine requesting pain medications are always “drug seeking”

# Acute Pain Management in Patients with OUD

- Provide reassurance that history of OUD should not be an obstacle to acute pain management
- Include the patient in the decision-making process to reduce anxiety about relapse
- Ask if patient has nonopioid directive
- Involve pain and addiction consult services if available
- Patients on MOUD should not be denied pain treatment with opioids when medically indicated
- Maintenance opioids should not be expected to adequately treat new onset acute pain
- Take measures to avoid precipitated withdrawal by appropriately timing the reinitiation of MOUD
- Educate and offer naloxone upon discharge

# Acute Pain Management in Patients with OUD (cont'd)

## Management options:

- Nonpharmacologic interventions
- Nonopioid analgesics
- Local anesthetic-based peripheral regional and neuraxial local analgesic techniques
- Patient-controlled analgesia (PCA) for difficult to manage pain with appropriate monitoring

# Opioid Analgesia in Patients on Buprenorphine Maintenance

- Experimental study demonstrated dose-dependent increase in mu-opioid receptor occupancy
  - 2 mg = 41%
  - 16 mg = 85-92%
  - 32 mg = 94-98%

Greenwald MK et al *Neuropsychopharm* 2003;28:2000–2009

Leighton BL et al. *Anesth Analg*. 2017;125(5):1779–83

# Should Buprenorphine Stay or Should It Go?

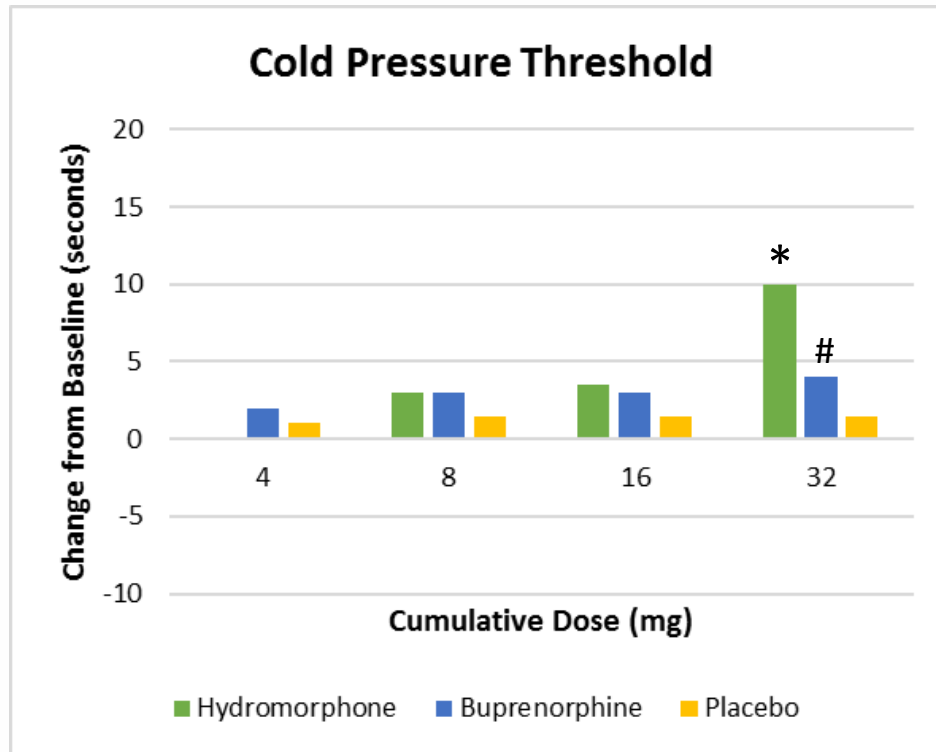
- Combination of buprenorphine and full mu-opioid receptor agonists has additive or synergistic effect
  - Buprenorphine receptor occupancy does not cause impairment of mu-opioid receptors accessibility
- Lack of strong evidence of analgesic ceiling effect in humans
- Recommendations for anticipated vs. emergent pain vary
  - Protocols that require discontinuation of buprenorphine may have negative impact on patient outcomes

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Opioid Analgesia in Patients on Buprenorphine Maintenance (cont'd)



ANALGESIA



\*Hydromorphone vs. placebo  $P < 0.05$

#Buprenorphine vs. placebo  $P < 0.05$

Huhn AS et al. *Anesthesiology* 2019; 130(1): 131–141.

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.



# Buprenorphine Maintenance and Acute Pain

Nonpharmacologic interventions and/or nonopioid analgesics

+

Continue buprenorphine and manage pain with opioid agonists

(can reduce buprenorphine dose if needed)

Goel A, Azargive S, Weissman JS, et al. Perioperative Pain and Addiction Interdisciplinary Network (PAIN) clinical practice advisory for perioperative management of buprenorphine: results of a modified Delphi process. *Br J Anaesth.* 2019;123(2):e333-e342. doi:10.1016/j.bja.2019.03.044

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Methadone Maintenance and Acute Pain

- Continue usual verified methadone dose from opioid treatment program; may use divided doses
- Treat pain aggressively with conventional analgesics, including opioids at higher (e.g., 1.5 times) doses and shorter intervals
- Avoid using mixed agonist/antagonist opioids due to risk of precipitating acute withdrawal
- Provide last methadone dose verification letter at discharge

# Naltrexone Maintenance and Acute Pain

- Receptor density
  - After starting naltrexone, patients have an increase in the density of opioid receptors proportionally with an increase in patient's sensitivity to opioids
- Competitive receptor binding
  - Naltrexone blockade can be overcome at more than 6 times the usual opioid dose
- Timing of acute pain management in relationship to last naltrexone dose
  - Intramuscular naltrexone half-life is ~5 days, with 98% of drug eliminated by day 25 of each injection

# Naltrexone Maintenance and Acute Pain

## Anticipated Pain

- Elective surgery
  - Stop naltrexone prior to procedure
    - Oral: > 72 hours before
    - Intramuscular: > 4 weeks before
  - Consult addiction medicine for transition plan
  - Use multimodal approach including opioids as needed based on expected pain severity

## Emergent Pain

- Discontinue naltrexone
- Consult anesthesia and addiction medicine
- Use high-dose opioids administered under close observation (intensive care unit)
- Use multimodal approach

Dahan A et al. Anesth Analg. 2018 Aug;127(2):539-547

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.

# Summary – Pain and OUD

- Pain and OUD share many commonalities yet require interventions that recognize and appreciate their differences
- Chronic pain is common in the setting of OUD, and their concurrence has been correlated with specific factors including a history of psychiatric disease
- Medications used for OUD (buprenorphine) may also be useful in the management of chronic pain
- Management of acute pain in patients on medications for OUD requires planning and a patient-specific, team-based, and multimodal approach
- Pharmacists should be a key resource for recommendations and monitoring of therapy, provider and patient education, and assisting with transitions of care



# Questions and Answers



## Part 2B

# Implications for Pharmacists

# Prevention of Opioid Misuse and Addiction

- Increase education
- Reduce inappropriate opioid prescribing
- Use abuse-deterrent opioid formulations
- Implement prevention intervention in family, school, and/or community setting
- Address psychosocial factors
- Increase sustainable job opportunities

Volkow ND, Jones EB, Einstein EB, Wargo EM. Prevention and Treatment of Opioid Misuse and Addiction: A Review. *JAMA Psychiatry*. 2019;76(2):208-216. doi:10.1001/jamapsychiatry.2018.3126



# Harm Reduction Strategies

- Education
- Prescription monitoring programs
- Decriminalization
- Naloxone
- Supervised injection facilities
- Sterile syringe distribution
- Drug supply testing
- Outreach initiatives
- Technology

Hill LG, Evoy KE, Reveles KR. Pharmacists are missing an opportunity to save lives and advance the profession by embracing opioid harm reduction. *J Am Pharm Assoc* (2003). 2019;59(6):779-782. doi:10.1016/j.japh.2019.06.019

These materials are provided to you solely as an educational resource for your personal use. Any commercial use or distribution of these materials or any portion thereof is strictly prohibited.



# Implications of Fentanyl in the Drug Supply

- ↓ efficacy of naloxone in the setting of overdose
  - Sensitivity of analog/dose ingested
  - Shared influx transporter
  - Fentanyl-induced respiratory muscle rigidity and laryngospasm (“wooden chest”)
- ↓ efficacy of medications for opioid use disorder (MOUD)
  - Need for higher doses → higher rate of adverse effects
  - Buprenorphine precipitated withdrawal ↓ self- or medically-supervised treatment

Int J Drug Policy. 2019;74: 76–83

Int J Drug Policy 2017;46:172-179

Ther Adv Drug Saf 2018; 9(1):63-88

MMWR Morb Mortal Wkly Rep 2017; 66(14):382-386

Biopharm. Drug Dispos 2010; 243–252.

# Safe Storage and Disposal of Opioids (cont'd)



Store opioids in a locked container

Keep opioids in their original package

Keep opioids out of children's reach

Do not share your medication

Safely dispose of unused pills

# Safe Storage and Disposal of Opioids (cont'd)

- Disposal options

- Community-based drug disposal program
  - Controlled Substance Public Disposal Locations
- Opioid disposal kits
- Mail-back programs
- Remove labeling from the bottle, mix the drugs with an unpleasant substance, and place in the garbage separate from the bottle
- Last resort – flush

<https://www.fda.gov/drugs/safe-disposal-medicines/disposal-unused-medicines-what-you-should-know>

<https://www.fda.gov/drugs/disposal-unused-medicines-what-you-should-know/drug-disposal-fdas-flush-list-certain-medicines#FlushList>

<https://apps.deaiverison.usdoj.gov/pubdispsearch/spring/main?execution=e1s1>

Tex J Health Syst Pharm. 2020;19(1):46-51

# Treatment Resources

- American Society of Addiction Medicine (ASAM) Member Directory
  - <http://community.asam.org/search/>
- SAMHSA Treatment Locator
  - <https://findtreatment.samhsa.gov/>
- Alcoholics Anonymous Meeting Locator
  - [http://www.aa.org/pages/en\\_US/find-local-aa](http://www.aa.org/pages/en_US/find-local-aa)



# Conclusions and Questions & Answers



# Thank You