Opioid Use Disorder and Treatment

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Topics to be Covered

• Epidemiology
• Neurobiology and the Disease Model of Addiction
• Treatment
• Special Populations
• Naloxone Rescue
• SAMHSA waiver for medication-assisted treatment: now for APNs!
At the end of this talk, you should be able to
- Describe the magnitude of the opioid epidemic
- Recognize the criteria for substance abuse disorder
- List and understand treatment options
- Know which treatment options are best under which conditions, for which patients

Some Terminology
- MAT – Medication-Assisted Treatment
- SAMHSA - Substance Abuse and Mental Health Services Administration, a division of the US Department of Health and Human Services
- SAMHSA Waiver or DEA Waiver for prescribing buprenorphine
- ASAM - American Society of Addiction Medicine
- NIDA - National Institute on Drug Abuse, part of the National Institute of Health
- PCSS-O Providers’ Clinical Support System for Opioid Therapy and PCSS-MAT Providers’ Clinical Support System for Medication Assisted Treatment
Epidemiology
Increasing rates of opioid use disorder, leading to
Increasing overdose rates
Increasing admissions for overdose
Increasing deaths from overdose
Increasing rates of neonatal abstinence syndrome
... and so on

Numbers
• SAMHSA/NIDA annual National Survey on Drug Use and Health 2016 survey:
  o 4.7% misused pain relievers in the past year
  o 12.8% misused pain relievers in the past month
  o 0.3% used heroin in the past year
  o 1.9% used heroin at some point

• National Epidemiologic Survey on Alcohol and Related Conditions III, administered in 2012-2013
  o Sample 36,309 adults, cross-sectional, representative, with 60% response rate
  o 12-month prevalence of drug abuse disorder 3.9%
  o Life-time prevalence of drug abuse disorder 9.9%
What do the numbers mean?

• Over 500,000 who use heroin
• Another almost 2 million who are dependent on prescription pain pills

• **BUT LESS THAN ONE THIRD GET ANY KIND OF TREATMENT**
• ONLY 30% of treatment facilities offer medication known to be effective in treatment of substance use disorders
• Less than half of eligible patients in those facilities get the medication

Results

• **MMWR (the CDC’s Morbidity and Mortality Weekly Report) December 2016:**
  Increase in opioid overdose between 2010 and 2015
  o Drug overdose death rate 12.3/100,000 in 2010 rising to 16.3/100,000 in 2015
  o Drug overdose deaths TRIPLED between 1999 and 2014
  o Out of >47,000 drug overdose deaths in 2014, 60.9% involved an opioid
  o Out of >52,000 drug overdose deaths in 2015, 63.1% involved an opioid
  o Largest percentage of these overdose deaths was from illicit opioids

• Since 2008, the number of deaths from overdose has surpassed those from MVAs and from firearms and continues to climb
Opioid-Related Deaths in Missouri

Missouri is 22d of 50 states in opioid overdose rates

In Missouri, opioid-related deaths are highest in the eastern part of the state—including urban St. Louis as well as suburban and rural areas surrounding the city.

From 1999 to 2014, opioid-related death rates have increased:

- 7.6 times for females and 3.8 times for males.
- 5.9 times for Caucasians and 2.6 times for African-Americans.
- 7.2 times for young adults age 25 to 34, 3.0 times for adults age 35 to 44, and 6.0 times for adults age 45 to 54.
Neurobiology and the Disease Model of Addiction

- Reward Pathways - dopamine
- Hedonic Tone
- DSM-5 Classification
- The Chronic Disease Model of Addiction

Why do people abuse drugs?

- Release of dopamine in reward center of brain: area that is stimulated by food, hydration, sex, nurturing—behaviors that ensure survival of the organism and species
- Reward circuit is deep in the brain: Media forebrain bundle, ventral tegmental area, nucleus accumbens
- All drugs of abuse cause release of dopamine in this reward circuit
- The reward pathway has connections to the prefrontal cortex, the orbitofrontal cortex, the thalamus, the amygdala, and hippocampus
  - The frontal cortex has to do with planning, impulse control
  - The thalamus with motivation and action
  - The amygdala and hippocampus with memory and mood
A Ripple-On Effect

- Other neurotransmitters involved: neuropeptides, glutamine, norepinephrine, corticotrophin releasing factor
- Complicated feedback loops
- The drug interacts with the brain’s neuroplasticity through G-protein coupled ligands, ion channels, secondary messengers
- Drugs modulate the expression of genes through epigenetic and possibly RNA modifications
Hedonic Tone

- Hedonic tone is the trait underlying one’s characteristic ability to feel pleasure
- The baseline of hedonic tone varies from low to high (Koob 2008)
- Once there is a stimulus (reward), the hedonic tone increases (this is positive hedonic response, aka alpha process) followed by return to below baseline (this negative hedonic response, aka beta process)

With repeated stimulus, the baseline drifts down, the high is lessened, and the beta part of the response is lower: **People no longer use to get high, but to try to feel normal**
Hedonic Tone in Drug Abuse


Cycle of Addiction

Dr Koob talks about stages of the addiction cycle which involve varying neurotransmitters and different parts of the brain:

- Binge and intoxication
- Withdrawal and negative affect
- Preoccupation and anticipation

**Stages of the Addiction Cycle**

Binge and intoxication leads to withdrawal and negative affect leads to preoccupation and anticipation leads to binge and intoxication . . .

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**Relapse: Different Brain Circuits**

- **Drug or reward circuit**: This involves the reward circuit, the VTA, the medial forebrain bundle, nucleus accumbens, the mesolimbic incentive salience circuit. Uses dopamine and glutamine.

- **Condition cues circuit** ("people, places, things"): This originates in the frontal cortex, involves the insula, hippocampus and amygdala, which project to the mesolimbic incentive salience circuit. Involves glutamine.

- **Stress circuit**: Involves hypothalamic-pituitary-adrenal axis, the lateral tegmental area of the brainstem, nucleus accumbens, frontal cortex, and bed nucleus of stria terminalis. Uses corticotrophin releasing factor and norepinephrine.
Substance Use Disorder: *DSM-5*

- Tolerance*
- Withdrawal*
- More use than intended
- Unsuccessful efforts to cut down
- Spends excessive time in acquisition
- Activities given up because of use
- Uses despite negative effects

*not counted if prescribed by a physician

- Failure to fulfill major role obligations
- Recurrent use in hazardous situations
- Continued use despite consistent social or interpersonal problems

Severity measured by number of symptoms: 2-3 mild, 4-6 moderate, 7-11 severe

Addiction as a Chronic Medical Disease

- In 1980’s drug dependence was treated with law enforcement and incarceration. Result: addicts in prison who relapsed upon release

- When addiction is seen as a medical problem, it is often treated like an acute illness:
  - no need for health care intervention/prevention;
  - a detox stay or a 28-day stay can “cure” it.

Relapse is seen as a moral lapse or weakness of the patient
Chronic Disease Model


- He found that it is similar to asthma, diabetes, and hypertension in that there is an element of genetic heritability. Personal choice and environmental factors affect outcomes. They have similar rates of medication adherence and relapse. They require long term care/management.

- He called for insurance coverage and for evaluation and treatment like other chronic diseases.


Natural History of Addiction

- CALDAR study: 33 year follow-up of 581 male heroin addicts admitted to California Civil Addict Program 1962-1964
  - Mean age of onset of heroin use 18
  - Mean age of admission to CAP 25
  - Follow-up 1974-1975: mean age 40, 14% dead, 18% incarcerated, 29% negative urine test
  - Follow-up 1985-1986: mean age 50, 28% dead, 12% incarcerated, 25% negative urine test
  - Follow-up 1996-1997: mean age 60: 49% dead, 6% incarcerated, 23% negative urine test

- Methadone maintenance became available in 1972 but only about 5% had access. No other medication assistance
- Some did stop using
- Many continued to use at high levels until dead or incarcerated
- At any given time 40-60% relapsed
The Natural History of Narcotics Addiction Among CAP Sample (N=581)

Years 1956-1996

Take Away from Natural History of Addiction

• Cyclic patterns of abstinence and use of different levels over long periods of time
• If they can stay abstinent for 5 years, they have an excellent prognosis of less future use and fewer arrests, less depression, better social functioning
• About 20-30% of the cohort survived and stayed abstinent
Is Medication the Answer?

- Multiple studies have shown that detox onto assistive medications and then a taper from those medications is ineffective at preventing relapse

- Study by Kakko 2003: 40 people with opioid use disorder
  - randomized to buprenorphine
  - 12 months continued treatment or a 6-day buprenorphine taper
  - at one year, retention in treatment 75% in continued treatment group, 0% with 4 deaths in taper group

NIDA POATs 2006-2009

- National Institute on Drug Abuse Prescription Opioid Addiction Treatment Study, N=653 at 10 sites
- How long do patients need to stay on buprenorphine/naloxone? Will additional counseling make a difference?
- Phase 1: 4 weeks of detox, then buprenorphine/naloxone treatment; then 14-day taper with 8-week follow-up
  - Result: 43 (6.6%) were able to maintain abstinence
  - Additional counseling made no difference in abstinence

- Phase 2: 56% agreed to continue (N=360). Buprenorphine/naloxone for 12 more weeks, then 4-week taper, and 8-week follow-up
  - Result: 31 patients (8.6%) were “successful”, ie abstinent at week 24 and at least 2 of the prior 3 weeks
  - Again, additional counseling made no difference

NIDA POATS Follow-up
A long-term follow-up of remaining cohort for 42 months

• About 2/3 of the 338 continued in some form of MAT
  o Most common buprenorphine (41-43%)
  o Methadone 6-9%
  o Naltrexone and disulfiram 0-1%
• “Engagement in agonist therapy was significantly associated with abstinence at month 42”

  80% abstinence among those engaging in agonist therapy vs 50% abstinence in those without it

Treatment

• The nuts and bolts of a treatment program:
  drug screens
  group support
  meetings
  therapy
  comorbidities
  psychosocial factors

And, for best results, medication-assisted treatment
Initiating Treatment

- Withdrawal Management
- COWS (Clinical Opioid Withdrawal Scale)
- Monitor patients during detox, during induction

Treatment in Russia
Withdrawal Management

- Detox with medications to manage symptoms
  - Anti-emetics, anti-diarrheals for GI symptoms
  - Benzos for anxiety
  - Non addictive muscle relaxers or NSAIDs
  - Partial agonist makes them the most comfortable

Opioids (and MAT) at the Receptor Level

- Opioids interact with neural receptors (mu opioid receptors) in different ways. They produce specific effects, e.g., analgesia, euphoria, respiratory depression. Opioids can be classified by how they affect the mu receptors: as Agonists, Antagonists, or Partial Agonists
- Drugs that activate receptors in the brain are termed agonists. Agonists bind to receptors and turn them on--they produce an effect. Full mu opioid agonists activate mu receptors.
- Increasing doses of full agonists produce increasing effects until a maximum effect is reached or the receptor is fully activated. Opioids with the greatest abuse potential are full agonists (e.g., morphine, heroin, methadone, oxycodone, hydromorphone).

https://www.naabt.org/education/technical_explanation_buprenorphine.cfm
Antagonists

- **An antagonist is like a key that fits in a lock but does not open it and prevents another key from being inserted to open the lock**
- Antagonists also bind to opioid receptors, but instead of activating receptors, they effectively block them. They prevent receptors from being activated by agonist compounds. Examples of opioid antagonists are naltrexone and naloxone.

Partial Agonists

- **Partial agonists** have some of the properties of both antagonists and full agonists.
- They bind to receptors and activate them, but not to the same degree as full agonists.
- At lower doses and in individuals who are not dependent on opioids, full agonists and partial agonists produce effects that are indistinguishable.
- As doses are increased, both full and partial agonists produce increasing effects. At a certain point, however, the effects of partial agonists reach maximum levels and do not increase further, even if doses continue to raise – the ceiling effect.
- As higher doses are reached, partial agonists can act like antagonists – occupying receptors but not activating them (or only partially activating them), while at the same time displacing or blocking full agonists from receptors. Buprenorphine is an example of a mu opioid partial agonist.
Medication Assisted Treatment

- In short supply (few practitioners)
- Underused (patients and practitioners don’t know about it)

- Three kinds of MAT
  - Methadone
  - Buprenorphine
  - Naltrexone

Efficacy of MAT

- Defined as
  - 1. Relief of physical withdrawal
  - 2. Relief of cravings while on maintenance
  - 3. Blocking dose – if a person does use an opiate, they don’t get high or get euphoria
  - 4. Engagement in recovery and personal growth activities
Methadone

- Full opioid agonist, DEA Schedule II
- Long half life, generally 24-36 hours, that allows for once-daily dosing
- It has many drug interactions and can cause QTc prolongation especially if combined with other drugs that may cause QTc prolongation
- Highly effective
- Highly regulated clinics under CFR 42

Methadone Clinics

- Clinics must have special licensing
- Daily monitored administration of the medication, with slow accretion of clients to build up “take home doses.”
- “Take homes” require 8 criteria to build up from one per week to maximum of a month’s dose
- Many areas, especially rural, do not have methadone clinics
- Total of 1200 clinics in the U.S., few take private insurance or Medicaid
- Cost ~$70-$130/week in Missouri
Managing Methadone

• Induction/initial dose limited by law to 30mg, with maximum 40mg first day
• With the long half-life, even at a stable dose it gradually "sneaks up on you" and does not reach a steady state for 5-7 days
• One-third to one-half of each dose deposited in tissues
• Has slow onset of action: 30-40 minutes
• Takes 2-4 hours to peak
• Trough is 24 hours after last dose, peak 3-4 hours after last dose
• Usual effective dose is 60-120mg
• Goal is for patient to be alert, aware, function, able to engage in work, education, family
Buprenorphine Mechanism

- Partial opioid agonist, at least in brain (in terms of euphoria, respiratory depression)
- Full opioid agonist in spinal cord (in terms of pain)
- Competes with other opiates at mu receptor, where it binds more tightly
- Can block reinforcing effects of other opiates, can decrease cravings, can normalize

Buprenorphine Prescribing Requirements

- Can be prescribed in outpatient setting by provider with additional training and SAMHSA waiver
- DATA 2000 authorized this waiver
- Schedule III
- Initial Waiver limit: 35 patients/provider. Later increased to 100/provider. Limit increased to 275/provider in 2016
- Lots of abuse by providers when limit was 35 patients (eg $15,000 to be "enrolled" in program, cash only)
- Still a serious shortage of buprenorphine-licensed providers in U.S.
Bup Induction and Prescribing

- Induction when in withdrawal from full agonist
- 24 hours since last used: evaluate with COWS
- If longer since last use, may have already passed peak of withdrawal
- If switching from methadone, must wait at least 72 hours
- Start with 2-4mg; after 2 hours another 2-4 mg
- Dose 12-16 mg, up to 32 mg
  - Opioid receptor occupancy reported at 2mg – 41%
    - at 8 mg – 83%
    - at 16 mg – 92% (range 79-95%)
    - at 32 mg – 98%

Buprenorphine / Naloxone

- Some recommend starting with monoproduct of buprenorphine (insurance coverage issues, logistics, etc)
- Use of buprenorphine/naloxone combinations at fixed doses
- Naloxone is abuse-resistance component, is there to act as blocking agent if IV use, minimally absorbed if medication properly taken (sublingually or buccally)
Buprenorphine Formulations

Submucosal delivery

Suboxone tablet, then Suboxone film (sublingual), a buprenorphine/naloxone combination
2mg/0.5 mg; 4mg/1mg; 8mg/2mg; 12mg/3mg

Zubsolv tablet (sublingual), a buprenorphine/naloxone combination
0.7mg/0/18mg; 2.9mg/0.71mg; 5.7mg/1.4mg; 8.6mg/2.1mg; 11.4mg/2.9mg/14mg/3.6mg

Bunavil film (buccal), a buprenorphine/naloxone combination
2.1mg/0.3mg; 4.2mg/0.7mg; 6.3mg/1mg

Generic buprenorphine/naloxone tablet (sublingual): 2mg/0.5mg, 8mg/2mg
Generic buprenorphine tablet (sublingual): 8mg, 2mg

Implantable

Probuphine
o Buprenorphine with ethyl vinyl acetate inside small tubes
o Insert 4 in upper medial arm
o Dose is 74.2mg each tube, or 296.8 mg for the entire dose
o Delivers continuous buprenorphine over 6 months, then old tubes must be removed and new ones inserted
o Approved for people stable on low to moderate dose (8mg or less)
Naltrexone

- Opioid antagonist at mu receptor
- Blocks reinforcing effects of opiates like heroin, which leads to gradual extinction of drug-seeking
- Decreases cravings by decreasing the reactivity of the drug conditioning cues
- Formulations:
  - Naltrexone 50mg tab
  - Vivitrol 380mg IM injection monthly

Better outcomes with XR naltrexone (Vivitrol) than oral medication
Blockade wears off toward end of month, so increased risk of overdose

Naltrexone Induction

- Patient has to be opiate free or will have precipitated withdrawal
- Either induction after verified abstinence (eg release from prison) or in residential recovery
- Or a minimum of 7-10 days abstinence (10-14 days if a heavy user)
- Abstinence must be confirmed with negative urine drug screen, +/- naloxone challenge, or oral naltrexone dosing
- Even if 48 hr since last heroin, with no opiates in system, patient is still physically dependent and naltrexone in high dose can precipitate withdrawal
Naltrexone-Precipitated Withdrawal

- Protracted withdrawal
- Precipitated withdrawal may have atypical features like delirium
- Low-grade flu-like symptoms, severe anxiety, insomnia
- Improvement in 2-4 weeks
- Less severe the longer you wait to start naltrexone (but longer wait increases risk of relapse)
- Review medications for management of withdrawal

Naltrexone-Induction Management

- Several protocols have been developed to smooth out transition from active drug user to naltrexone management

  - First, buprenorphine detox for 8-12 days
    Start low-dose naltrexone 2 days later, with 1/16 of a 50mg tablet
    Gradually increase naltrexone dose over next 5 days to full tablet
    Finally, Vivitrol injection

  - Alternative protocol: buprenorphine 8mg for 1 day, skip a day, then add gradually increasing doses of naltrexone (3mg day 3, 6mg day 4, up to 50mg) oral with the Vivitrol 380mg at end of week
When to Choose Naltrexone

- Highly motivated
- May be involved in 12-step groups that proscribe methadone and buprenorphine
- Drug court patient, not allowed agonist medication
- Professional, such as medicine, nursing, airline pilot
- Family services requirement
- People with less severe, shorter duration dependence
- Already detoxed and abstinent
- Don’t want to become physically dependent on methadone or bup
- Use only sporadically
- Coming off agonist medications and want some additional safeguards
- Failed agonist therapy – continued use, diversion, etc

Special Populations

- Adolescence
- Pregnancy and Breastfeeding, and NICU
- Criminal Justice System
- Chronic Pain, Acute Pain, and Surgery
- Mental Illness
Adolescence

- “Many unique medical, legal, and ethical dilemmas that may complicate treatment”
- Use of pain relievers and heroin by ages 14-17 in 2016: about 4% within the past year, of whom about one-fourth within the previous month
- Consider ALL treatment options, including medications both agonist and antagonist
  - Buprenorphine FDA approved age 16 and up
  - Methadone approved for age 16-17 if they have failed 2 prior withdrawal management attempts and have parental approval
  - Methadone for age 18 and over without first failing as long as meet criteria for opioid dependence
  - Naltrexone FDA approved age 18 and up
- About half of states (including Missouri) allow adolescents to seek treatment without parental consent
- Best with psychosocial treatment in specialized treatment units

Pregnancy

- OUD complicates 5.6 of every 1000 pregnancies in U.S. (Saia et al 2016)
- Often associated with late or no prenatal care
- IV drug use associated with exposure to HIV, Hepatitis B and C
- Comorbid with smoking and other drugs of abuse (meth, benzos, cocaine)
- Intrauterine Growth Retardation (IUGR)
  - With multiple daily dosing of short-acting opiates, fetus undergoes repeated exposure and withdrawal
Managing Pregnancy and OUD

- Treatment with medication for opioid dependence now standard of care
- WITHDRAWAL DOES NOT WORK (Luty 2003).
  - 101 women detoxed during pregnancy. 40 “successfully” detoxed but only ONE abstinent at time of delivery
- Opioid maintenance treatments associated with better prenatal care, lower risk of relapse

Pregnancy and Opioid Maintenance Therapy

- If on methadone, continue. Will likely need increased dose.
- If on buprenorphine/naloxone, switch to buprenorphine due to theoretical fetal withdrawal from naloxone (under study, recommendations may change)
- If on naltrexone, stop and switch to methadone or buprenorphine (under study, recommendations may change). Concern for effect of naltrexone on developing brain
- If NOT in treatment or if need to be switched from naltrexone to alternative, if greater than 22-24 weeks recommend induction in hospital with fetal monitoring
- If earlier than that, can monitor induction in office or treatment center
Lowering the Risks During Pregnancy

- Recommended to get an early ultrasound for dating and for patient buy-in
- Screen for HIV, Hepatitis B & C
- Stress testing best done in afternoon if on methadone
- Repeat growth ultrasound as increased risk of IUGR, esp if mother smokes cigarettes
- If possible patient should meet with NICU pediatrician who may care for infant if it presents with NAS sufficient to require treatment and extended monitoring

Labor, Delivery, and Post-Partum

- Epidural anesthesia is best
- Post-partum can use short-acting opioids with methadone or buprenorphine
- If C-Section PCA with fentanyl or hydromorphone
- Possibly leave epidural in for 24 hours
Breastfeeding

• Medication assisted treatment is compatible with breastfeeding (buprenorphine and methadone both are ok)
• Only contraindication for a mother in recovery to breastfeed is if she is HIV positive
Neonatal Abstinence Syndrome

- Infant withdrawal from opioid drug:
  - Involves autonomic nervous system, GI tract, and respiratory system
- May be present in 60-85% of infants of mothers on opiates but only 20-40% require pharmacological treatment
- For elevated scores (Finnegan Scoring System) usually treat with morphine, gradually tapered
- Swaddling, cuddling, quiet are also important for treatment
- Mothers who room in with infant lead to shorter stay
- Breast fed infants require less pharmacological treatment, have shorter stays than formula fed (multiple studies)
- Severity not related to buprenorphine or methadone dose or duration! Smoking has greater effect

Finnegan Neonatal Abstinence Scoring Tool (FNAST)

- Evaluator should check signs or symptoms observed at various time intervals and add the scores to obtain a total score.
- Observation of the scores over the time interval provides the progression/diminution of symptoms
Criminal Justice System

- 1.5 million in state or Federal prison, another 750,000 in jail, 5 million on probation or parole
- 64-75% of those arrested have a substance use disorder, 10-25% have an opioid use disorder
- 25% of those in prisons are there due to drug convictions
- Treatment in prison is effective and improves rates of treatment after discharge
- If discharged without treatment, at high risk of relapse and overdose (due to reduced tolerance), return to criminal activity
- Recommend treatment start at least a month before discharge, include psychosocial counseling, arrangement to transition to outpatient program at discharge, and MAT
- Drug courts are alternative sentencing, about 50% now allow MAT

Overdose Risk

- High risk if resume using after being on MAT eg naltrexone, or if coming out of treatment or prison
- If patient uses again after a period of abstinence they may resume using at previous level, overestimating their reduced tolerance
- Serious risk of overdose leading to death
- Current risk among users due to illegally synthesized fentanyl being mixed with heroin here in rural Missouri
Pain, Acute and Chronic

• Co-occurrence of pain and opioid use disorder
  o 50% of veterans seeking treatment complain of moderate to severe pain
  o 61.3% (Jamison 2000) to 80% (Rosenblum et al 2003) of methadone maintenance patients
    • Of these methadone maintenance patients, 37% complain of severe pain
  o More than 79% of prescription opioid addiction patients seeking buprenorphine treatment complain of pain in the past 30 days (Potter et al, 2010),
    • Of these patients, more than 53% complain of moderate-to-severe pain
  o More than 78% of substance abuse treatment inpatients complain of chronic pain (Rosenblum et al 2003)
  o Unknown whether opioid use sensitized these patients to pain stimuli or they were baseline more sensitive
  o Patients with active OUD have less pain tolerance

Pain and Recovery

• Chronic pain not associated with worse MAT outcomes
• Methadone and buprenorphine can be used to treat both addiction and pain, but
  o Regulations for methadone treatment (from a CFR42 certified clinic, once daily dosing) complicate methadone treatment so must be prescribed for pain not addiction
  o Dosing for pain is 3-4 times/day for both of these as opposed to once daily for addiction
  o Satisfaction with pain relief is often moderate at best
• Adjunctive treatments: Cognitive therapy, physical therapy, TENS, massage, acupuncture, epidural injections, spinal stimulators
• Other medications: neuroleptics, antidepressants such as TCAs, duloxetine, muscle relaxers, NSAIDs
• Naltrexone is not a good choice for OUD with significant pain
Acute Pain Management for Buprenorphine-Maintained Patient

• Depending on degree of pain: addition of NSAID like ketorolac for kidney stones; local or spinal anesthesia
• May require full agonist opiate: Their baseline maintenance opioid equivalence must be maintained before any analgesic effect is realized if opioids are added to treat acute pain

Options:
1. Continue buprenorphine, use additional doses or divide doses up to 6-8 hour dosing
2. Add full opioid agonist to buprenorphine, such as oxycodone 5-10mg
3. Stop buprenorphine and start methadone eg 20-40mg/day, or another long-acting opioid to cover baseline opioid requirement, PLUS short-acting immediate-release opioid. Resume usual buprenorphine dose when acute pain management requirement is resolved

Risk of relapse to active drug use may be higher with inadequate pain management than with the addition of an opioid analgesic

Perioperative Pain Management Options for Buprenorphine Patient

1. **Michigan model**: Discontinue buprenorphine 5 days before surgery, treat with opioids at surgery, resume buprenorphine post-op.
   - Causes disruption in recovery by stopping buprenorphine during high-anxiety pre-operative period
2. **Boston model**: Take last buprenorphine dose morning of day before surgery. Pre-procedure give a single dose of long-acting opioid like morphine SR 15mg. Post-procedure will likely require increased dose of pain meds
3. **Alternative**: Continue buprenorphine and add full agonist pain meds as needed. Can use IV buprenex for post-op pain

• Post-operative pain management is better with fentanyl or other opioid with high receptor affinity
Pain Management in Methadone Patients

- Providers sometimes make the mistake that since the person is already on methadone they don't need anything else for pain: increase risk of relapse due to poor pain management
- Add other medications as needed

Pain Management in Naltrexone Patients

- Naltrexone patients' pain control more complicated: oral naltrexone takes 72 hours for 50% blockade to dissipate. Vivitrol takes 14 days to begin decline, a month for full clearance
- Delay elective surgery for naltrexone patients until naltrexone has worn off
- Acute pain management for naltrexone patients problematic:
  - Use non-opioids or regional anesthesia if possible
  - If not possible, may require ICU monitoring, anesthesia; must be prepared to intubate—takes 6-20 times the usual dose of analgesics to overcome naltrexone blockade
Mentally Ill Patients

- Drug abuse disorder may be masking another underlying disorder (self-medicating psychiatric patients)
- Balancing act of medication management
- Working with psychiatrists and other prescribers

Naloxone Rescue

- Various devices available for non-medical persons to use in emergencies
- Now recommended for pain patients with comorbidities to keep on hand in case of accidental interaction/overdose (like an Epipen)
Naloxone for bystander administration

- Intramuscular
  - Traditional
  - Auto-injector
- Intranasal
  - With MAD (off-label)
  - NARCAN nasal spray

Join those providers helping with this epidemic:

SAMHSA waiver for MAT prescribing NOW AVAILABLE FOR APNs!
https://www.samhsa.gov/medication-assisted-treatment/qualify-nps-pas-waivers


https://elearning.asam.org/products/nppa-24-hour-waiver-training-aapa