MAT (Medication Assisted Treatment) for OUD (Opioid Use Disorder): in DPC

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Learning Objectives

1. Compare buprenorphine, methadone, and naltrexone with respect to their mechanisms of action, indications, and clinical roles in the treatment of opioid use disorder.
2. Identify patient and clinical factors that inform selection of buprenorphine versus methadone, including treatment setting considerations and occupational implications.
3. Determine when naltrexone may be an appropriate treatment option for patients with opioid use disorder, including those with polysubstance use.

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Is Addiction a Chronic Disease?

- **Treatment with methadone or buprenorphine following a non-fatal opioid overdose reduced subsequent opioid overdose deaths by 59%.**
- Studies show that medications for OUD reduce drug use, disease rates, and overdose events and increases retention in treatment programs while promoting recovery among individuals with OUD, according to studies.
- Benefits of treatment include:
  - Reduced risk of overdose-related deaths
  - Reduced risk of HIV and viral hepatitis infections in injection drug users
  - Lower rates of cellulitis for injection drug users
  - **Reduced criminal behavior in the community**
  - Reduced rates of psychiatric complications in the community

"There are only two industries that call their customers 'users': illegal drugs and software."
The Social Dilemma, 2020

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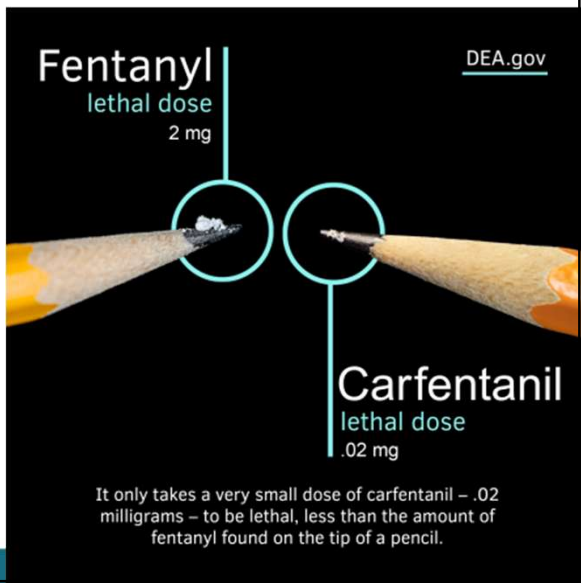
Substance Use Disorder Rates

- 8.5% Community vs 68% Incarcerated
- The prevalence of substance use disorders is notably more disparate, with estimates of 8.5 percent in the general public (aged 18 or older) but 53 percent in state prisons **and 68 percent in jails** (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014; Mumola & Karberg, 2004; Karberg & James, 2005).
- 70% of 2023 overdose deaths involved synthetic opioids (mostly fentanyl).
- Carfentanil = 100 x more potent than fentanyl



https://store.samhsa.gov/sites/default/files/d7/priv/sma16-4998.pdf

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Buprenorphine vs Methadone

- Buprenorphine (Typically as Suboxone = Buprenorphine/Naloxone)
  - "Ceiling Effect" in which further increases above 24mg in dosage does not increase the effects on respiratory or cardiovascular function
  - MAT programs most commonly dose patients at 16mg once daily
  - Buprenorphine 40% sublingual bioavailability. Naloxone 10% SL bioavailable
  - If injected – opioid experience delayed by 20-40 mins and less euphoric due to competition between drugs for the mu receptor.
  - Acidic pH 3.4 (brush teeth after use?) + inhibit acetylcholine release ↓ saliva
- Methadone
  - Unopposed agonist. Will suppress respiratory function.
  - Starting dose often 20-30mg/day, usual maintenance 80-120mg/day
  - In an opioid naïve patient the lethal dose of methadone is 50mg.
  - If it is diverted it can be fatal.

https://www.samhsa.gov/sites/default/files/quick-start-guide.pdf
https://www.accessdata.fda.gov/drugsatfda_docs/label/2021/022410s042lbl.pdf

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Evidence of Buprenorphine **SAFETY**

- "Buprenorphine is a derivative of thebaine, an extract of opium. The drug is an opioid (synthetic opiate) **partial agonist** and thus can produce the euphoria, analgesia, and sedation associated with opiates; however, while it stimulates the same brain receptors as full opiate agonists such as heroin and morphine, buprenorphine **produces a lesser degree of sedation and respiratory depression than those drugs and causes no significant impairment of cognitive or motor skills**. Like methadone, buprenorphine reduces cravings for heroin and other opiates and reduces withdrawal symptoms, thus helping addicted individuals to stop abusing opiates. Also like methadone, buprenorphine blocks the effects of heroin by binding to the same opiate receptors as heroin; consequently, opiate addicts who use buprenorphine are not able to get a high from heroin."
- The FMCSA allows long haul truck drivers to take Suboxone (Buprenorphine/Naloxone) and continue to operate 18-wheelers. This is NOT the case with methadone, which the FMCSA argues causes too much sedation.

US DOJ Intelligence Bulletin Buprenorphine: Potential for Abuse Sept 2004
https://www.justice.gov/archive/ndic/pubs10/10123/10123p.pdf

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What is the Buprenorphine "Ceiling Effect?"

- "Buprenorphine also has a "ceiling effect" whereby **increased doses of the drug do not produce increased effects after a certain point**, or ceiling. In fact, high doses of the drug **can actually precipitate withdrawal symptoms in opiate addicted individuals**. Because of this ceiling effect, buprenorphine is less susceptible to abuse than other opiates; however, because high doses of the drug can cause withdrawal symptoms, buprenorphine is not as effective as methadone in treating severely opiate-addicted individuals who require larger doses of opiates in order to maintain treatment therapy. SAMHSA advises that the best candidates for buprenorphine therapy are those patients receiving 30 milligrams or less of methadone. Buprenorphine is estimated to be effective for approximately one-half to two-thirds of the opiate abuser population."

US DOJ Intelligence Bulletin Buprenorphine: Potential for Abuse Sept **2004**
https://www.justice.gov/archive/ndic/pubs10/10123/10123p.pdf

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Myth = Buprenorphine is misused frequently so prescribers should strictly control access.

- Fact = Buprenorphine is not a preferred substance to get high for those with opioid use disorder due to its partial opioid activator effects which limit euphoria and reward. Buprenorphine misuse is clearly associated with self-treatment of opioid withdrawal and of lack of access to treatment with medication for opioid use disorder.

https://hsc.unm.edu/medicine/research/swctn/_pdfs/bupe-fact-sheet.pdf

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Myth =Patients can get “high” on Suboxone

- Fact = Suboxone does not cause intoxication in those persons who are opioid-dependent, given its partial opioid agonist effects of partial, not full, activation of the brain’s opioid receptors.

https://hsc.unm.edu/medicine/research/swctn/_pdfs/bupe-fact-sheet.pdf

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Myth =Patients will just sell Suboxone

- Fact = Diversion and misuse of medications exists across the spectrum of medications. One study found similar rates of diversion between buprenorphine and antibiotics, both at approximately 20%.
- As mentioned previously, much buprenorphine misuse is clearly associated with self-treatment of opioid withdrawal symptoms and opioid cravings associated with lack of MOUD access or inability to afford prescribed medication.

https://hsc.unm.edu/medicine/research/swctn/_pdfs/bupe-fact-sheet.pdf

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Myth = One must be fully abstinent and have a negative drug screen to start buprenorphine

- Fact = People with opioid use disorder frequently use multiple drugs in an effort to self-medicate, including efforts to reduce opioid withdrawal and cravings. Buprenorphine has a stabilizing effect which can reduce a patient's need for additional substances. Buprenorphine treatment benefits the patient even if the patient is still using other substances.

https://hsc.unm.edu/medicine/research/swctn/_pdfs/bupe-fact-sheet.pdf

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Why is Suboxone Preferred Over Subutex?

- "Suboxone also can be diverted and abused; however, it is more likely to be abused by individuals who are addicted to low doses of opiates since it can precipitate withdrawal symptoms in high doses. The naloxone in Suboxone guards against abuse by causing withdrawal symptoms in abusers who crush and either inject or snort the drug; however, law enforcement and pharmacist reporting indicates that Suboxone is being abused successfully when snorted."
- Fentanyl + Oral Suboxone = Partial precipitated withdrawal
- Fentanyl + Injected Suboxone = Complete precipitated withdrawal

US DOJ Intelligence Bulletin Buprenorphine: Potential for Abuse Sept 2004
https://www.justice.gov/archive/ndic/pubs10/10123/10123p.pdf

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What happens if you take too much?

- Acetaminophen – Liver failure, death
- Alcohol – Liver failure, death
- Benadryl – Anticholinergic activity, EKG changes, death
- Caffeine – EKG changes, death
- Cocaine – EKG changes, death
- Ibuprofen – Renal failure, death
- Methamphetamine – EKG changes, death
- Xanax – Respiratory suppression, death

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What happens if you take too much?

- Buprenorphine – Mild respiratory suppression, hit ceiling, not fatal
  - Usual dose = 16mg per day - still **not** fatal even at 160mg!
- Codeine – Respiratory suppression, no ceiling, death
- Fentanyl – Respiratory suppression, no ceiling, death
- Heroin – Respiratory suppression, no ceiling, death
- Hydrocodone – Respiratory suppression, no ceiling, death
- Hydromorphone – Respiratory suppression, no ceiling, death
- Oxycodone – Respiratory suppression, no ceiling, death
- Methadone – Respiratory suppression, no ceiling, death
  - Usual dose = 80 -120mg per day. **FATAL in naïve patient starting at 50mg!**

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Opioid Classifications

- Agonists = Bind strongly to receptor, max response
- Partial Agonists = Higher binding affinity, ceiling effect
- Antagonists = Bind firmly to receptor but do not activate it
- Buprenorphine =
  - A partial agonist with high-affinity at the mu opioid receptor
  - An antagonist at the kappa opioid receptor
  - A weak antagonist/agonist at the delta opioid receptor
  - An agonist at the nociception opioid peptide receptor (attenuates respiratory suppression)

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What happens the patient takes Fentanyl + …

- Diazepam – Additional respiratory suppression, ↑ **risk of death**
- Buprenorphine – Partial precipitated withdrawal
- Methadone - Additional respiratory suppression, ↑ **risk of death**
- Naloxone – Complete precipitated withdrawal, ↑ **risk of seizures**
  - Vending machines in some jails
  - Some inmates allowed to administer to other inmates

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Can We Attribute **Any** Overdoses to Buprenorphine?

- "Researchers found that buprenorphine was involved in a very small proportion of drug overdose deaths between July 2019 and June 2021. During this study period, there were 1,955 buprenorphine-involved overdose deaths, which represented 2.2% of the 89,111 total overdose deaths and 2.6% of the 74,474 opioid-involved overdose deaths recorded in the SUDORS dataset. Between April 2020 and June 2021, when buprenorphine prescribing regulations were relaxed in response to the COVID-19 pandemic, the researchers found that while monthly opioid-involved overdose deaths increased overall, the proportion of those deaths involving buprenorphine did not increase."
- "Additionally, the study found that 92.7% of buprenorphine-involved overdose deaths also involved at least one other drug, compared to 67.2% of deaths involving an opioid other than buprenorphine. Specifically, compared with other opioid-involved overdose deaths, buprenorphine-involved overdose deaths were more likely to also involve prescription medications such as benzodiazepines (36.9% vs. 14.5%), antidepressants (13.9% vs. 5.0%), and anticonvulsants (18.6% vs. 5.4%)."
- Quick Math – potential for 141/74,474 opioid deaths being attribute to buprenorphine
  - This attribution is NOT specific to the deterrent formulation of Suboxone (which includes naloxone)

NIH News Release: Overdose deaths involving buprenorphine did not proportionally increase with new flexibilities in prescribing https://www.nih.gov/news-events/news-releases/overdose-deaths-involving-buprenorphine-did-not-proportionally-increase-new-flexibilities-prescribing

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What would happen if a patient **high** on **fentanyl** took the following:

- Oral naloxone?
- Oral naltrexone?
- Intramuscular naloxone (Narcan)?
- Suboxone (Buprenorphine/naloxone) films or tablets?
- Methadone?

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What would happen if a patient **high** on **fentanyl** took the following:

- Oral naloxone? – Nothing, it is not orally absorbed
  - It is only a part of a suboxone film as an abuse deterrent to injecting it
- Oral naltrexone?
  - Precipitated withdrawal
- Intramuscular naloxone (Narcan)?
  - Precipitated withdrawal (potentially with seizures and other complications)
- Suboxone (Buprenorphine/naloxone) films or tablets?
  - Partial precipitated withdrawal (not as severe as Narcan)
- Methadone?
  - Additional respiratory suppression and increased risk of death

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What happens if a patient takes **suboxone** and then **adds** the following:

- Oral naloxone?
- Oral naltrexone?
- Intramuscular naloxone (Narcan)?
- Suboxone (Buprenorphine/naloxone) films or tablets?
- Methadone?
- Fentanyl?

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What happens if a patient takes **suboxone** and then **adds** the following:

- Oral naloxone? Nothing it is not orally absorbed
  - It is only a part of a suboxone film as an abuse deterrent
- Oral naltrexone?
  - Precipitated withdrawal
- Intramuscular naloxone (Narcan)?
  - Precipitated withdrawal
- Suboxone (Buprenorphine/naloxone) films or tablets?
  - Nothing. There is a ceiling effect. No euphoria or respiratory suppression.
- Methadone?
  - Blunted effect due to the Suboxone that the patient has already taken
- Fentanyl?
  - Blunted effect due to the Suboxone that the patient has already taken

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Do the following increase or decrease the risk of seizures?

- Acute alcohol intoxication
- Acute methamphetamine intoxication
- Acute cocaine intoxication
- Fentanyl withdrawal
- Naloxone administration

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Do the following increase or decrease the risk of seizures?

- Acute alcohol intoxication – decreases seizure risk
- Acute methamphetamine intoxication – increases seizure risk
- Acute cocaine intoxication – increases seizure risk
- Fentanyl withdrawal – increases seizure risk
- Naloxone administration – increases seizure risk

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Boston Addiction Specialist Argues that Buprenorphine Should Be W/O an Rx

- "Boston University addiction experts Payel Roy and Michael Stein argue in a new editorial published in JAMA that lives could be saved by making one of these three medications, buprenorphine, more accessible to patients as a behind-the-counter drug monitored and administered by pharmacists."
- Harvard "5 myths about using Suboxone to treat opioid addiction"
  - You aren't really in recovery if you're on Suboxone
  - People frequently misuse Suboxone
  - It's as easy to overdose on Suboxone as it is to overdose with other opioids.
  - Suboxone isn't treatment for addiction if you aren't getting therapy along with it.
  - Suboxone should only be taken for a short period of time.

https://www.bu.edu/articles/2019/buprenorphine-without-prescription/

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Why Switch to Long-Acting Injectable Buprenorphine?

- Sublocade
  - One-month 100 or 300 mg doses depot buprenorphine product
  - Dissolved in a biocompatible solvent
  - Liquid polymer system solidifies upon contact with bodily fluids to form solid
  - Buprenorphine is slowly released as the polymer biodegrades
  - Stored at 35.6-46.4 F, can be room temp for 12 weeks prior to use
  - 19-gauge 5/8-inch needle with an abdominal injection volume 0.5-1.5m:
- Brixadi
  - Weekly doses at 8, 16, 24 and 32 mg formulations
  - Monthly doses at 64, 96, and 128mg formulations
  - Fluid solution transforms into a nanostructured liquid-crystalline gel
  - Stored at room temperature
  - 23-gauge 1/2-inch needle with a buttock/thigh/abd/arm injection volume of 0.16-0.64mL
- Effective suppression of opioid dependence occurs when 70% of mu opioid receptors are occupied, or at plasma concentrations down to > 2 ng/ml
- Injectable efficacy in the 70% range compared to 50% in SL range

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Why Switch To From Buprenorphine to Methadone?

- Some patients have continued cravings for opioids on buprenorphine
- Ceiling effect means higher doses do not have more effect
- Methadone has no ceiling effect

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Not Licensed to prescribe Methadone? The OTP rule was updated in 2024

- Expanding the Definition of Long-Term Care Facilities
- There is widespread support among commenters for the addition of jails and prisons under the definition of long-term care facilities at 8.11(h)(3), thus expanding the waiver of OTP certification to better allow for equitable access to treatment and reduce the potential for civil rights violations. Group homes and withdrawal management programs are also mentioned by some commenters in this context, as well as any licensed non-hospital residential treatment programs with medical staffing, a DEA registration and the ability to administer/store/dispense prescription medications. Several commenters also requested the removal of waiver language that specifies the OUD diagnosis be secondary to another condition.
- Response: Language has been added to the final rule, at Section 8.11(h)(3), to highlight that these flexibilities may apply to a correctional facility that has registered with the DEA as a hospital/clinic. If a correctional facility has registered as a hospital/clinic, a physician or authorized staff **may administer or dispense narcotic drugs to maintain or manage withdrawal for an inmate as an incidental adjunct to medical or surgical treatment of conditions other than addiction**. Rules regarding controlled substance dispensing that is outside the context of OTPs, such as waiver language that specifies the OUD diagnosis be secondary to another condition, is beyond the scope of this rulemaking. SAMHSA notes that the Centers for Medicare & Medicaid Services released new guidance encouraging States to apply for a new Medicaid re-entry Section 1115 waiver demonstration project for those persons leaving jails and prisons that this final rule may help facilitate.

https://www.federalregister.gov/documents/2024/02/02/2024-01693/medications-for-the-treatment-of-opioid-use-disorder

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Title 42, Chapter I, Subchapter A, Part 8, Subpart C Section 8.11(h)(3)

- Certification as an OTP under this part is not required for the initiation or continuity of medication treatment or withdrawal management of a patient who is admitted to a hospital, long-term care facility, or correctional facility, that is **registered with the Drug Enforcement Administration as a hospital/clinic**, for the treatment of medical conditions other than OUD, and who requires treatment of OUD with methadone during their stay, when such treatment is permitted under applicable Federal law.
- (i) The term "long-term care facility" is defined in § 8.2. Nothing in this section is intended to relieve hospitals, or long-term care facilities and correctional facilities that are registered with the Drug Enforcement Administration as a hospital/clinic, from their obligations to obtain appropriate registration from the Attorney General, under section 303(g) of the Controlled Substances Act. Treatment provided under this section should always comply with applicable Federal laws.

https://www.ecfr.gov/current/title-42/chapter-I/subchapter-A/part-8/subpart-C/section-8.11#p-8.11(h)

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Johns Hopkins Methadone Final Rule Interpretation

- "The revised rules clearly and unequivocally state that a carceral setting may register as a hospital/clinic and use methadone under the exemption available to hospitals/clinics. Under this exemption, the clinic can dispense methadone for opioid withdrawal syndrome and/or treatment of opioid use disorder to patients, provided that they have **an additional diagnosis** besides opioid withdrawal syndrome and/or opioid use disorder. The guidance does not list or otherwise specify the additional diagnoses that are required to use this option, which gives some leeway to the clinician. There should be clear documentation in the medical record identifying what additional diagnoses the patient has."

https://opioidprinciples.jhsph.edu/expanding-access-to-methadone-treatment-for-opioid-use-disorder-in-carceral-setting/

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Is **NOT** treating addiction an ADA Violation?

- **Yes – Often this is the case**
- A plaintiff must demonstrate that they are:
- 1) "A qualified individual with a **disability**," that was
- 2) "**either excluded** from participation in or **denied** the benefits of **some pubic entity's** services, programs, or activities or was otherwise discriminated against," and that
- 3) "such exclusion, denial of benefits, or discrimination was by reason of the plaintiff's disability."

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Does a patient with opioid use disorder have a disability under the ADA?

- **Yes**
- Drug addiction is considered a mental or physical impairment
- Individuals in recovery are also protected by the ADA (since they would be limited in a major life activity in the absence of treatment)
- See 42 U.S.C. § 12102; 28 C.F.R. § 35.108(b)(2)
- The ADA covers people on MOUD **except those** that are "**currently** using illegal drugs." For the most part that means **two weeks of use**, but this is **outside the jail/prison setting**. A **jail/prison setting is considered a health care setting**, so **even if you have an inmate that uses illegal drugs in prison there is a strong legal argument that they are still entitled to MOUD**.

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DOJ Mandating a Change to Outdated Blanket Policies

- In many states skilled nursing facilities have historically not admitted patients on current MOUD. This blanket policy was problematic.
- The DOJ is VERY CLEAR that if a facility does not allow incoming inmates to continue taking MOUD prescribed before their detention. The facility's blanket policy prohibiting the use of MOUD will lead to litigation.
  - ADA Litigation
  - Civil Rights Deliberate Indifference Cases Under the 8th or 14th Amendments
  - Medical Malpractice (this is not the standard of care in the community)
- Arguing that you provide only naltrexone and not buprenorphine will NOT be a defense.
- All facilities must find a way to offer ALL THREE forms of MOUD treatment
- Treating with buprenorphine now ↓ litigation risk
- Litigation via the ADA could lead to more methadone txt mandates.

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Salt Lake City Jail Example

- They have had 1,012 patients in the program.
- 374 on methadone, 430 on suboxone, and 208 on vivitrol.
- 138 suboxone patients were released from jail and 59% of them followed up in the community.
- Total patients that returned to jail in the regular program is 74%, but those in MAT had a recidivism rate at 11.5%.
- Since starting MAT their admin seg unit population has fallen and there are fewer behavioral issues. Security staff has fewer behavior issues.

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Colorado Department of Corrections 2023 Data

- 15,698 inmates
- 804 patients on MAT treatment (small subset of estimated OUD total)
- Methadone: 33 patients (became an opioid txt program (OTP) on 06/26/23)
- Buprenorphine: 673 patients: 672 on Suboxone/Subutex, 1 on Sublocade
- Naltrexone: 98 patients
- Approximately 2% of patients with OUD overdose/die within one month of parole. 90% of those that died were discharged from prison without an MAT Rx.

https://leg.colorado.gov/sites/default/files/images/committees/opioid_sud_interim_committee_moud_in_the_cdoc_2023.pdf

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Goals of the Suboxone Program

- Zero ER runs for overdoses of fentanyl
- Zero Hepatitis C reinfections
- Fewer ER runs for inmate assaults
- Less manipulation / drug seeking within the facility
  - Dissipate the demand for diversion of ALL opioids including fentanyl
- Fewer suicide attempts
  - Per NCCHC buprenorphine prescribing reduces suicidality
- More participation in jail/prison programming efforts
- Favor Suboxone over methadone – act now or litigate & lose later…
  - Treating OUD patients with suboxone decreases the chance the facility loses a lawsuit that would force wider methadone prescribing.
- Stability on discharge
  - Less recidivism (↓ by 32% in two rural Massachusetts jails)
  - Fewer overdoses shortly after discharge

https://www.nih.gov/news-events/news-releases/offering-buprenorphine-medication-people-opioid-use-disorder-jail-may-reduce-rearrest-reconviction

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How do we **stop** diversion?

- Kill the underground diversion market by treating all who qualify!
  - Those trying to store Suboxone will have no one wanting to buy it
  - Drug dogs could still be used to detect and get rid of inmate stores
- Closer 1:1 observation with either liquid or crushed Suboxone?
  - **Attempted = Too time-consuming** to watch each patient for ten minutes…
  - We never allowed the patient to handle the medication (place it in the mouth)
  - Video administration with artificial intelligence, not there yet…
  - No talking, chew and swallow cracker with water, and…. still diverted!
  - Fake absorbent tooth, sponge under the tongue
- Stopping the med once diversion is observed?
  - Outdated clinical practice, **not an evidenced based** way to treat addiction
  - This approach will lead to litigation, staff burnout, grievances, overdoses, etc
- Repeated drug screens & drug levels
  - Useful at times; polysubstance abuse is **not a reason to stop treatment**
- Pricing comparisons of different buprenorphine formulations
  - Brixadi (long-acting injectable buprenorphine) = $1,726 per patient per month
  - Sublocade (long-acting injectable buprenorphine) = $2,078 per patient per month
  - Suboxone tabs 16/4mg per day dosage = $54.84 per patient per month
  - Suboxone films 16/4mg per day dosage = $131.96 per patient per month
  - Suboxone Suspension 16/4mg per day = $302.42 per patient per month

FOR ILLUSTRATION PURPOSE ONLY. ACTUAL PRODUCT MAY VARY.

https://www.cfspharmacy.pharmacy/buprenorphine-suspension-compounded

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Suboxone Review

- Can opioid use disorder patients get high on Suboxone? NO
  - So why do some patients divert it? For others to avoid withdrawal.
- Can patients overdose on Suboxone? NO
  - One month's worth of saved doses taken = no deaths even if one person took it all
  - The ceiling effect prevents overdoses of OTHER opioids (fentanyl) as well!
  - Compare to methadone = one month of saved doses could kill 30 people!
- Do all patients with OUD have a federal ADA right to treatment? YES
  - This is safer than methadone and more effective than naltrexone
- Is there any state or federal law mandating observed therapy? NO
  - If it were KOPed (not recommended) then 8+ urine drugs screens annually
- Should the budget be a basis for limiting Suboxone Prescriptions? NO

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Low Budget Suboxone Logistics

- Obtain Suboxone 8/2 Tablets for around $50 per patient per month
  - Injectables cost around $2,000 per month (only way to totally stop diversion)
- Treat most patients with 16mg once daily
  - Rarely 24mg dosed as 8mg TID, NEVER above 32mg daily
- Administer Suboxone at one regular pill pass per day
  - Vermont DOC moved Suboxone to regular pill pass in Feb 2025
  - No need to waste time monitoring for diversion
  - No extra nursing or custody staff needed
  - Use a drug dog to sweep for any stores periodically
- Remember that **when** suboxone is diverted in your facility:
  - No one "got high" – merely avoided withdrawal (coffee & ibuprofen analogy)
  - Fewer people overdosed on fentanyl and other opioids as a consequence
  - Stopping a diverted Suboxone Rx is NOT evidence-based care (lose if litigated)
  - Diversion rates will fall as the program is expanded to all OUD patients

Methadone is far more dangerous and **should remain on a monitored dedicated medication pass**.

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Leaving Custody While Continuing Suboxone

- Any community prescriber with a DEA license can prescribe it
  - Methadone programs and access are very limited
- It can be prescribed monthly upon discharge
  - Methadone programs typically start with daily administrations
  - Pill lines can take up hours of time every day
- Patients can continue to work while on Suboxone
  - They can still be FMCSA certified truck drivers
  - Methadone (per FMCSA regs) disqualifies one from being a truck driver
  - Monthly supplies of medication make holding a job easier than a daily pill line

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Suboxone Microdosing Induction – 1 Week

Day	Dosing	Fraction of Bup/Nal	Opioid
Day 1	0.5 mg Daily	¼ film (2/0.5mg) daily	Continue Current Dose
Day 2	0.5mg BID	¼ film (2/0.5mg) BID	Continue Current Dose
Day 3	1mg BID	½ film (2/0.5mg) BID	Continue Current Dose
Day 4	2mg BID	1 film (2/0.5mg) BID	Continue Current Dose
Day 5	2mg TID	1 film (2/0.5mg) TID	Continue Current Dose
Day 6	4mg BID	2 films (2/0.5mg) BID	Continue Current Dose
Day 7	4mg TID	2 films (2/0.5mg) TID	Continue Current Dose

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Methadone – Package Insert Black Box Warnings

- "Methadone products, when used for the treatment of opioid **addiction** in detoxification or maintenance programs, shall be **dispensed only by certified opioid treatment programs as stipulated in 42 CFR 8.12**."
- "**QT interval prolongation** and serious arrhythmia (torsades de pointes) have occurred during treatment with methadone. Closely monitor patients with risk factors for development of prolonged QT interval, a history of cardiac conduction abnormalities, and those taking medications affecting cardiac conduction."
  - Usually only a risk at higher doses such as 200mg daily or more
  - Most methadone clinics do not bother with a screening EKG at initiation
  - Most obtain an EKG at a dose of 150mg or more per day

Methadone FDA Package Insert

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Methadone – Package Insert Black Box Warnings

- "Concomitant use with CYP3A4, 2B6, 2C19, 2C9 or 2D6 inhibitors or discontinuation of concomitantly used CYP3A4, 2B6, 2C19, or 2C9 inducers can result in a fatal overdose of methadone."
- "Concomitant use of opioids with benzodiazepines or other central nervous system (CNS) depressants, including alcohol, may result in profound sedation, respiratory depression, coma, and death."
- "Serious, life-threatening, or fatal respiratory depression may occur. The **peak respiratory depressant effect of methadone occurs later, and persists longer than the peak analgesic effect**. Monitor closely, especially upon initiation or following a dose increase."

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Methadone – PAIN - Indications

- Can be prescribed OUTSIDE of a certified opioid treatment program – for pain
- For opioid naïve patients, initiate methadone tablet treatment with 2.5mg every 8 to 12 hours. When taken for pain purposes it is usually dosed every 8 hours. For OUD it is dosed once per day.
- Titrate slowly with dose increases no more frequent than every 3 to 5 days.
- A single dose of 20 to 30 mg may be sufficient to suppress withdrawal syndrome
- Methadone Bioavailability = 85%
  - vs 26% for morphine vs ≈30% for buprenorphine (person-to-person variability)
- Methadone is hepatically metabolized and unlike morphine no renal adjustments are needed

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Methadone Contraindications / Concerns

- Respiratory Depression (if severe) including severe asthma
- Gastrointestinal Obstruction (known or suspected paralytic ileus)
- Serotonin Syndrome
- Adrenal Insufficiency
- Severe Hypotension
- Worsened Sedation in those with:
  - Increased intracranial pressure
  - Brain tumors
  - Head Injuries

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Methadone Most Common Side Effects

- Lightheadedness
- Dizziness
- Sedation
- Nausea
- Vomiting
- Sweating

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Methadone Pharmacokinetics

- With repeated dosing, methadone is retained in the liver and then slowly released, prolonging the duration of potential toxicity
- Discontinue all other around-the-clock opioid drugs when methadone therapy is initiated. Deaths have occurred in opioid-tolerant patients during conversion to methadone.
- Terminal half life can vary from 8-59 hours
  - Usually assumed to be 22 hours in “average person”
  - Lipophilic – drug accumulation occurs with repeat dosing
  - Methadone reabsorption from the tissues may continue for weeks after stopping (this lets it *act* like a longer acting opioid)
- Titrate up slowly over 3-12 days between dosage increases
- Taper by 15-50% every two to four days if stopping

DPC SUMMIT

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Converting TO Methadone

Total Daily Oral Morphine Equivalent	Est Daily oral Methadone
<100mg	20-30%
100-300mg	10-30%
300-600mg	8-12%
600 – 1,000mg	5-10%
>1,000mg	< 5%

- Calculate the daily dose of methadone, start BID

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Methadone Initiation

- Patient should have withdrawal symptoms but no sedation or intoxication.
- The initial dose should not exceed 30mg… changing to 40mg?
- Wait 2-4 hours then order another 5-10mg if withdrawal not suppressed.
- Do NOT determine initial doses based on previous treatment episodes or dollars spent per day on illicit drug use.

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Methadone Formulations

- Tablets in 5mg or 10mg dosages, most patients are dosed in liquid form
  - A one-week supply of tablets would often be 70-140 tabs
- A "normal" dose of methadone is between 80-120mg per day. It is not uncommon for some patients to go up to 220mg per day.
  - It is mostly taken once per day, but some patients do better BID
  - OTPs have to apply to the federal (and often state government) to get approval for a "split dose" regimen so that the patient can take it BID
  - Split dosing is more common in pregnancy starting at the second trimester
  - Split dosing is also more common in patients with pain at night
- Starting dose per 50+ year old federal law = 30mg (changing to 40mg?)
  - Old protocol is to increase by 5mg every 3-5 days
- In the fentanyl era we need to be faster and more aggressive (mg every 3-5 days)
  - Most go from 30 to 60mg and then slow the taper to slower increases every three days
  - Above 75-80mg the dose can be increased by 10mg every 5-7 days
  - Many do not stop using fentanyl until they reach 120mg per day of methadone
- See Canadian Document "How to Dose Methadone in the Fentanyl Era" 10-15 every 2-3 days to get patients stable quickly

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Do not drive until you are at your baseline

- Document the patient's baseline normal drug level
- This can be important in the event of a subsequent investigation
  - Employer inquiries after work accidents
  - Criminal inquiries after motor vehicle accident
  - Methadone = Fail DOT physical (Automatic) but not buprenorphine
  - Life insurance (combatting drug overdose as a cause of death)
- Watch for level changes with subsequent drug interactions
- What if the patient misses 1-4 days of methadone?
  - Do not change the dose yet
- What if the patient has missed more than 5 days of methadone?
  - The average clinic will reduce the dose by 20%

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Missed Dose Protocol

Days Missed	Dose Change
Three days	No adjustment – continue at baseline dose
Four days	The higher of 50% of previous dose or 30mg
Five days	Restart at 30mg

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Do the "Eye's Have it"?

- Not necessarily
- Methadone causes miosis, even in total darkness.
- Pinpoint pupils are a sign of opioid overdose but are not pathognomonic (e.g., pontine lesions of hemorrhagic or ischemic origins may produce similar findings).
- Marked mydriasis rather than miosis may be seen due to hypoxia in overdose situations.

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Why Do We Expect Constipation?

- "Methadone causes a reduction in motility associated with an increase in smooth muscle tone in the antrum of the stomach and duodenum. Digestion of food in the small intestine is delayed and propulsive contractions are decreased. Propulsive peristaltic waves in the colon are decreased, while tone is increased to the point of spasm, resulting in constipation. Other opioid-induced effects may include a reduction in biliary and pancreatic secretions, spasm of sphincter of Oddi, and transient elevations in serum amylase."

Methadone FDA Package Insert

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Methadone Clinics

- 60% are private and for profit with shareholders
- Most are open from around 5:30 AM to Noon
  - One 24-hour clinic exists in Phoenix
- Most clinics use liquid methadone rather than pills
- Dosing may take minutes, but patient may stand in line for 2 hours
- To qualify patients must have had OUD for more than a year
  - Also check proximity to the clinic, govt ID, over age 18, transportation
- Office staff should have a "methadone checklist"
- Methadone is generally not in the PDMP (call the methadone clinic)

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Methadone Regulations

- Federal rules require daily visits for the first thirty days
- Initial intake and paperwork takes 1-4 hours
  - Initial screening exam
  - Full physical exam
  - Drug screens at least eight times per year
  - Counseling available, but no longer required (cannot be sole basis for declining to prescribe methadone)
  - Labs should be drawn – may be refused and refusal cannot be the sole basis for declining to prescribe methadone
- Consider your geography https://dpt2.samhsa.gov/treatment/
- 80% of US counties do not have any methadone OTPs
- There are none in the state of Wyoming

Methadone FDA Package Insert

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New Federal Regulations for Opioid Treatment Programs

Key Components of the Final Rule

- Substantive, procedural, and linguistic changes to adopt a more patient-centered approach to treatment in OTPs.
- Permanent authorization for expanded take-home methadone, including up to a 7-day take-home supply during the first 14 days of treatment.[5]
- Permanent authorization for OTPs to conduct patient screenings and full examinations via telehealth, including for patients being evaluated for treatment with methadone.
- Authorization for non-OTP practitioners to conduct initial screenings and examinations outside of an OTP.
- Prohibiting the denial of MOUD based on a patient's refusal of counseling services.
- Elimination of non-evidence-based admissions criteria (e.g., the requirement that a patient must have a 1-year history of OUD, with limited exceptions).
- Improvements to interim treatment, including access to take-home doses.
- Elimination of outdated regulatory provisions related to the X-waiver.

The Final Rule does not affect the applicability of state laws, including state laws that are more restrictive than federal law.[6] Many states regulate certain aspects of methadone treatment more strictly than the Final Rule (e.g., admission requirements, methadone take-homes, and drug testing frequency). Information on state laws regulating methadone treatment in OTPs is available from The Pew Charitable Trusts and PDAPS.org. **OTPs also frequently implement stricter policies and practices than required by state and federal law,** which can limit patient access to flexibilities such as increased methadone take-home supplies.

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	Final Rule	Old Rule
Initial Dosages	+ Requires OTPs to consider "the type(s) of opioid(s) involved in the patient's opioid use disorder, other medications or substances being taken, medical history, and severity of opioid withdrawal."[67] + Specifies that the total dose for the first day should not exceed 50mg unless the OTP practitioner finds and documents sufficient medical rationale for a higher dose.[68]	+ Initial dose limited to 30mg. + Total dose for the first day limited to 40mg unless the program physician documented that 40mg "did not suppress opioid abstinence symptoms."
Split Dosing[69]	+ Authorizes OTPs to provide split doses of MOUD, including methadone, "where such dosing regimens are indicated."[70] + Includes split doses for take-home doses of methadone.[71]	+ Not addressed.
Guest Dosing	+ Patient may obtain treatment at another OTP "in circumstances involving an inability to access care at the patient's OTP of record," as determined by the medical director or program practitioner of the patient's OTP.[72] + Circumstances include, but are not limited to, "travel for work or family events, temporary relocation, or an OTP's temporary closure."[73]	+ Prohibited patient from obtaining "treatment in any other OTP except in exceptional circumstances."

	Final Rule	Old Rule
Stability Criteria for Methadone Take-Homes[57]	+ Absence of active substance use disorders, other physical or behavioral health conditions that increase the risk of patient harm as it relates to the potential for overdose, or the ability to function safely. + Regularity of attendance for supervised medication administration. + Absence of serious behavioral problems that endanger the patient, the public or others. + Absence of known recent diversion activity. + Whether take-home medication can be safely transported and stored. + Any other criteria that the medical director or medical practitioner considers relevant to the patient's safety and the public's health. + Other pertinent factors that indicate the therapeutic benefits of unsupervised doses outweigh the risks.[58]	+ Absence of recent abuse of drugs (opioid or nonnarcotic), including alcohol. + Regularity of clinic attendance. + Absence of serious behavioral problems at the clinic. + Absence of known recent criminal activity, e.g., drug dealing. + Stability of the patient's home environment and social relationships. + Length of time in comprehensive maintenance treatment. + Assurance that take-home medication can be safely stored within the patient's home. + Whether the rehabilitative benefit the patient derived from decreasing the frequency of clinic attendance outweighs the potential risks of diversion.

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Time-in-Treatment for Methadone Take-Homes[59]	Final Rule	Old Rule
1-14 Days	Up to 7-day supply	1 dose/week
15-30 Days	Up to 14-day supply	1 dose/week
31-90 Days	Up to 28-day supply	1 dose/week
91-180 Days	Up to 28-day supply	2 doses/week
181-270 Days	Up to 28-day supply	3 doses/week
271 Days to 1 Year	Up to 28-day supply	Up to a 6-day supply
1 Year to 2 Years	Up to 28-day supply	Up to a 2-week supply
2+ Years	Up to 28-day supply	Up to a 1-month supply

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Adding Buprenorphine to Methadone = Withdrawal

- "Avoid the use of mixed agonist/antagonist (i.e., pentazocine, nalbuphine, and butorphanol) or partial agonist (e.g., buprenorphine) analgesics in patients who are receiving a full opioid agonist, including DOLOPHINE Tablets. In these patients, mixed agonists/antagonist and partial agonist analgesics may reduce the analgesic effect and/or may precipitate withdrawal symptoms."
- Switching from methadone to buprenorphine the old way is challenging – must reduce methadone gradually back to 30mg daily for a week, then stop the medication for around 2-3 days and then once 3 days into withdrawal usually ok to start buprenorphine.
- If attempting a microdosing (new) transition most try to reduce methadone dose to 80mg first.

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Recommended Resources

- Substance Abuse and Mental Health Services Administration. Guidelines for Successful Transition of People with Mental or Substance Use Disorders from Jail and Prison: Implementation Guide. (SMA)-16-4998. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2017.
  - https://store.samhsa.gov/sites/default/files/d7/priv/sma16-4998.pdf
- Opioid Use Disorder: Diagnosis, Evaluation, and Treatment. Federal Bureau of Prisons Clinical Guidance, August 2021.
  - https://www.bop.gov/resources/pdfs/opioid_use_disorder_cg.pdf
- Clinical Use of Extended-Release Injectable Naltrexone in the Treatment of Opioid Use Disorder: A Brief Guide 2015.02.02
  - https://store.samhsa.gov/sites/default/files/d7/priv/sma14-4892r.pdf
- Using the Americans with Disabilities Act to Reduce Overdose Deaths David Howard Sinkman Assistant U.S. Attorney Eastern District of Louisiana Gregory Dorchak Assistant U.S. Attorney District of Massachusetts
  - https://www.justice.gov/file/1467861/download (pages 117-132)

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Additional Recommended Reading

- Wakeman SE, Barnett ML. Primary Care and the Opioid-Overdose Crisis - Buprenorphine Myths and Realities. N Engl J Med. 2018 Jul 5;379(1):1-4. doi: 10.1056/NEJMp1802741. PMID: 29972748.
  - https://www.nejm.org/doi/full/10.1056/NEJMp1802741
- Top Ten Buprenorphine Myths and Misconceptions
  - https://hsc.unm.edu/medicine/research/swctn/_pdfs/bupe-fact-sheet.pdf
- Tanz LJ, Jones CM, Davis NL, Compton WM, Baldwin GT, Han B, Volkow ND. Trends and Characteristics of Buprenorphine-Involved Overdose Deaths Prior to and During the COVID-19 Pandemic. JAMA Netw Open. 2023 Jan 3;6(1):e2251856. doi: 10.1001/jamanetworkopen.2022.51856. PMID: 36662523; PMCID: PMC9860517.
  - https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2800689

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Live Content Slide

When playing as a slideshow, this slide will display live content

Social Q&A for MAT (Medication Assisted Treatment) for OUD (Opioid Use Disorder) in DPC (Direct Primary Care)

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