HOSPITAL MANAGEMENT OF OPIOID USE DISORDER

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OBJECTIVES

1) To describe the clinical presentation of opioid use disorder in hospitalized patients.

2) To elaborate on evidence-based treatment options for managing opioid use disorder in hospital setting.

3) To discuss the removal of DATA waiver requirement for buprenorphine prescribing.

DISCLOSURE

I HAVE NO FINANCIAL CONFLICTS

ABOUT HEROIN

There are three main routes of administration of heroin:

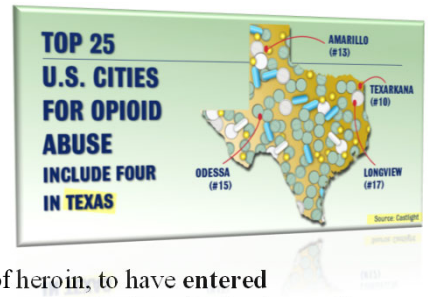
- Inhaling ("*snorting*")
- Smoking ("*chasing the dragon*")
- Injecting

ABOUT HEROIN

Studies comparing inhalers, smokers, and injectors have found that

- Injectors are more likely to be **male, older, started heroin use earlier, have higher daily doses**, possess more extensive histories of use of other drugs, test seropositive for HIV and hepatitis B and C, and have higher levels of dependency.
- A study of 408 heroin users in the U.K. found that more than a **third of the sample** had changed their predominant route of administration, with the most common transition being from snorting to injecting.

OPIOID EPIDEMIC



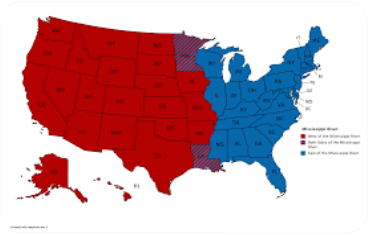
A study in Texas between 1997 and 2001

- **Injectors** were more likely to be **younger** at first use of heroin, to have **entered treatment later**, to have **lower annual incomes**, to have more treatment episodes, and to be **Caucasian**.
- **Inhalers** were more likely to be **older** at first use of heroin, to have **entered treatment sooner**, to have minor children at home, to have **higher annual incomes**, to be first admissions to treatment, and to have a secondary drug problem with crack cocaine. They were also more likely to be **Hispanic or African American**.

OPIOID EPIDEMIC

- **A study in Texas between 1997 and 2001 (cont)**
- 93% of the heroin admissions were injectors and 7% were inhalers; smoking heroin was rare. In comparison, in a study in the U.K., 61% were injectors, 37% were smokers, and 1% were inhalers.
- South American and Asian varieties, which are powdered, are rare in Texas, and clients who had used "white" heroin had either used it when they were on the East Coast or overseas or when a friend brought some back to Texas.

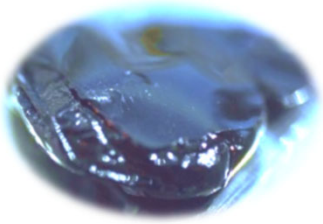
OPIOID USE DISORDER



Route of administration of heroin is influenced by the type of heroin available.

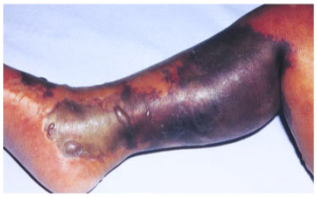
- East of the Mississippi River, 92% of heroin samples in 2002 were South American, which is a powdered heroin with an average street-level purity of 46%.
- West of the Mississippi, 98% of the samples in 2002 were Mexican heroin (black tar and to a lesser extent, brown powder), with an average purity of 27%

BLACK TAR HEROIN



- Mexican black tar may be **sticky or hard like coal**
- It may be black tar that has been turned into a brown powder by local dealers or users by adding a diluent.
- The most common route of administration of black tar is injection.
- Because of its oily, gummy consistency, special steps are required to convert the heroin into a powder that can be inhaled.
- Tar heroin can be frozen, the "cut" added, and then pulverized or ground into a powder in a coffee grinder or with mortar and pestle. It can also be dried out on a plate over the stove or under a heat lamp prior to pulverizing.
- Diluents ("*cuts*") can include Benadryl, Mannitol, Lactose, and Coffee creamer.

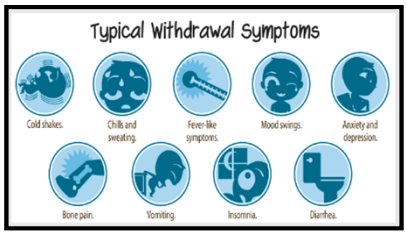
BLACK TAR HEROIN



- **IV injection** - High risk of Venous Sclerosis.
  - ✓ The presence of 6-monoacetylcodeine in black tar makes it more toxic.
- Can lead to rapid destruction of veins and stickiness, could force people to convert to **SC injection**.
  - ✓ Skin Popping.
- May put people at a lower risk for HIV.
  - ✓ Due to heating involved in dissolving.
- Increased risk of life threatening bacterial infections, in particular necrotizing soft tissue infections.
- Skin popping → **Necrotizing Fasciitis** or **Necrotizing Cellulitis** (Clostridium perfringens or Clostridium botulinum).

CASE: HPI

- 26 year old female admitted 3 days ago with L Lateral /thigh redness, swelling and fever.
- Abscess and Cellulitis suspected. Admitted for IV Antibiotic treatment**.**
- She has uses a gram of heroin IV or skin popping / Daily – Last use 3 days ago.
- Reported sx: body-aches, chills, achy joints and muscle, and stomach cramps.
- Signs appreciated yawning, and dilated (reactive) pupils.
- Dysphoria and irritability related to withdrawals noted.



SUBSTANCE USE AND PAST PSYCH HISTORY

- She started smoking heroin about **10 years ago**. Tolerance had gradually increased.
- Her boyfriend later introduced her to intravenous heroin.
- She has been incarcerated in the past for possession and distribution of drugs.
- She has history of **accidental overdose once.**
- She worked as a commercial sex work to support her drug use.
- She also reports concurrent use of **cocaine for speed balling**.

SUBSTANCE USE AND PAST PSYCH HISTORY

- She has used **suboxone off the street** (with positive effects), but never been in treatment/ recovery. .
- She denies use of alcohol or Sedatives.
- Currently she is separated from her boyfriend and motivated towards sobriety.
- H/O childhood sexual trauma. H/O self injurious behavior and two prior suicide attempts.
- No prior psychiatric hospitalization or formal outpatient follow-up.

OPIOID WITHDRAWAL ASSESSMENT

Grade	Symptoms / Signs
0	Anxiety, Drug Craving
1	Yawning, Sweating, Runny nose, Tearing eyes, Restlessness Insomnia
2	Dilated pupils, Gooseflesh, Muscle twitching & shaking, Muscle & Joint aches, Loss of appetite
3	Nausea, extreme restlessness, elevated blood pressure, Heart rate > 100, Fever
4	Vomiting / dehydration, Diarrhea, Abdominal cramps, Curled-up body position

Clinical Opiate Withdrawal Scale **pulse, sweating, restlessness & anxiety, pupil size, aches, runny nose & tearing, GI symptom, tremor, yawning, gooseflesh** (Score: 5-12 mild, 13-24 mod, 25-36 mod severe, 36-48 severe)

CASE FORMULATION

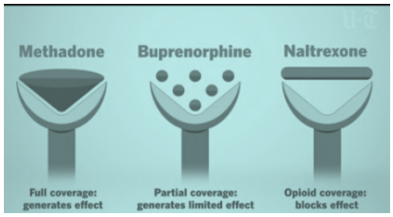
26 year old female who presented with opioid use disorder severe, opioid withdrawals and L/Thigh abscess formation due to skin popping, who is currently experiencing opioid withdrawals presented with medical issues related to drug use including cellulitis and abscess formation requiring IV antibiotics, and currently in contemplative stage of change.

- Expressed desire and reasons to enforce sobriety.
- High relapse risk with some elements of illicit life style.
- Returning back to relatively safe and sober living conditions to her mother

INPATIENT GOALS

- Prevent/treat acute opioid withdrawal
  - ✓ Inadequate treatment may prevent full treatment of medical/surgical condition
- **Don't expect to cure OUD during hospitalization!!**
  - ✓ Withholding opioids will not cure patient's OUD
  - ✓ Giving opioids will not worsen patient's OUD
- Diagnose and treat medical illness
- Initiate addiction treatment referral

INTERVENTION
MEDICATION &REFERRAL



- **Psychiatrist**

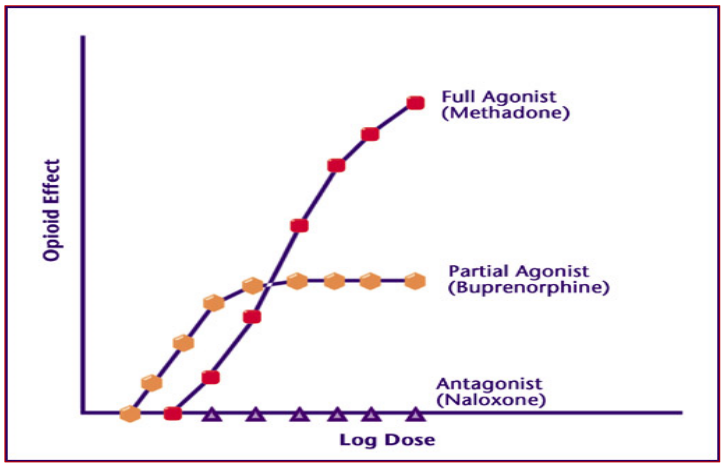
Opioid withdrawals / Opioid use Disorder

- The patient will benefit from being on Buprenorphine/methadone induction & maintenance.
- The patient is in significant distress.
- The patient is unlikely to cooperate fully with the primary team and let them carry out life saving treatment unless opioid withdrawals are reasonably managed.

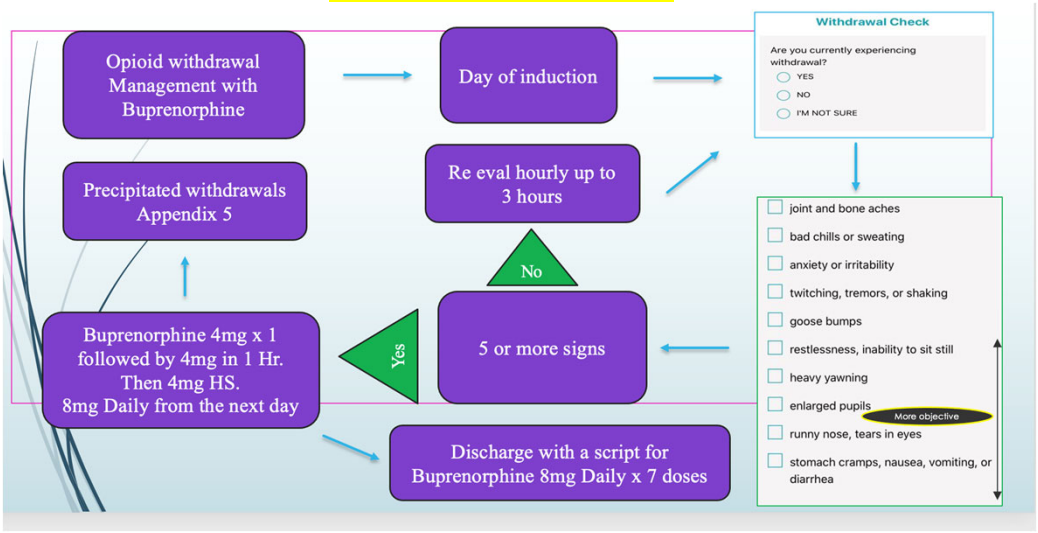
- **Social Worker**

Disposition patient will be started on buprenorphine/ methadone with a view to start on maintenance. She will be given an appointment with office- based treatment program/ OTP.

OPIOID TREATMENT MEDICATION & IT'S EFFECT @MU RECEPTOR



INPATIENT OPIOID WITHDRAWAL MANAGEMENT BUPRENORPHINE



INPATIENT OPIOID WITHDRAWAL MANAGEMENT

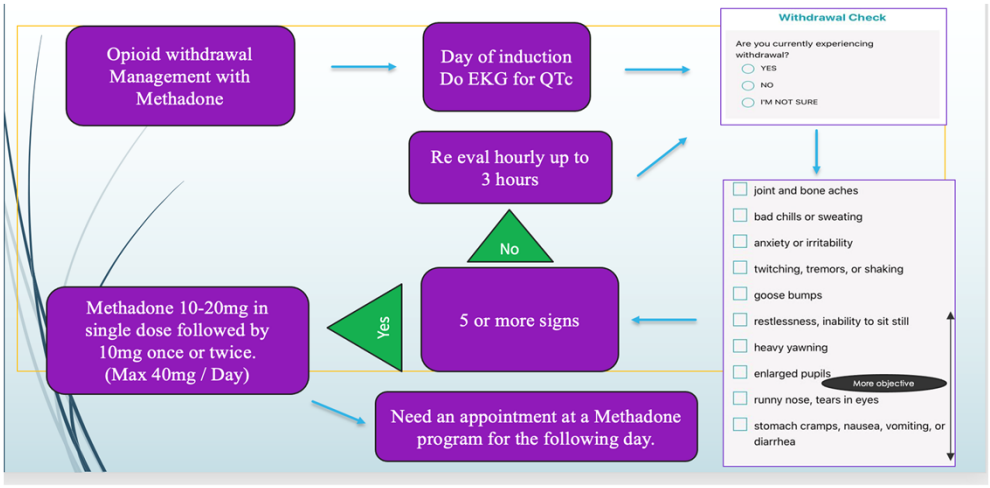
Appendix 5

Repeat Buprenorphine 4 mg hourly + Adjunctive medications

Table 1. Adjunctive, Non-opioid-based Medications to Treat Withdrawal

Clonidine 0.1 mg Q4, PRN for irritability and anxiety
Hydroxyzine 50 mg Q6, PRN for anxiety
Diazepam 10 mg PO for sleep (once)
Ondansetron 4 mg Q6, PRN for nausea and vomiting
Acetaminophen and ketorolac, PRN for pain management (avoid opioids)
Dicyclomine 10 mg Q6, PRN for cramping
Loperamide, PRN for loose stool
i.v. fluids, PRN for hydration

INPATIENT OPIOID WITHDRAWAL MANAGEMENT METHADONE



INPATIENT TREATMENT OF OPIOID WITHDRAWAL

- Monitor for CNS and respiratory depression
- Give same dose daily (once patient stable) including day of discharge
- Don't give a methadone prescription
- Can give buprenorphine prescription (**NO longer require X-waiver for OP prescription!!!**)

BEHAVIORAL INTERVENTION

Motivational Interview

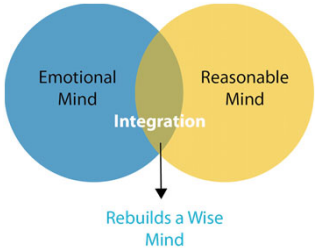
- **Ensuring patient's autonomy**
- The patient's **own reasons for change** / positive outcomes of change considered.
- **Readiness for change assessed**.
- **Plan moving forward**.

Cognitive Behavioral Therapy

- Identify **high risk situations & low risk situations**.
- Discuss **cognitive distortions** including rationalizing use and hopelessness.
- Discussed **skills deficits & imaginal exposure**
- **Normal life skills & goal setting deficits** addressed.

Dialectical Behavioral Therapy

- Building new bridges and burning old dysfunctional bridges.
- Plan for **harm reduction**
- **Urge surfing** through mindfulness.



CASE CONTINUED: 6 MONTHS LATER

- She presented to primary care clinic requesting treatment for heroin addiction
- Did not follow up for outpatient appointment
- She started using heroin the day she left the hospital

CASE CONTINUED

Recommended treatment options from PCP

- Narcotics Anonymous meeting
- Supportive: clonidine + NSAID + loperamide
- Buprenorphine maintenance
- Naltrexone (po or injectable) after abstinence for 7-10 days
- Overdose prevention education and naloxone

Referral

- Detoxification (medically supervised withdrawal) program
- Methadone maintenance (Opioid Treatment Program)
- Buprenorphine maintenance
- Harm reduction, HIV pre-exposure prophylaxis (PrEP)
- Outpatient counseling

OPIOID DETOXIFICATION OUTCOMES

- Low rates of retention in treatment
- High rates of relapse post-treatment
  - Increased rates of overdose due to decreased tolerance
  - < 50% abstinent at 6 months
  - < 15% abstinent at 12 months

REASONS FOR RELAPSE

1. Protracted abstinence syndrome

- ✓ Secondary to derangement of endogenous opioid receptor system
- ✓ Opioid withdrawal symptoms
  - Generalized malaise, fatigue, insomnia
  - Poor tolerance to stress and pain
  - Opioid craving

2. Conditioned cues (triggers)

3. Priming with small dose of drug

MEDICATIONS FOR OUD TREATMENT

- Naltrexone (full opioid antagonist)
- Opioid Agonist Therapy **(OAT)**
  - ✓**Methadone** (full agonist)
  - ✓**Buprenorphine** (partial agonist)

GOALS

- Alleviate physical withdrawal
- Opioid blockade
- Alleviate drug craving
- Normalize brain changes

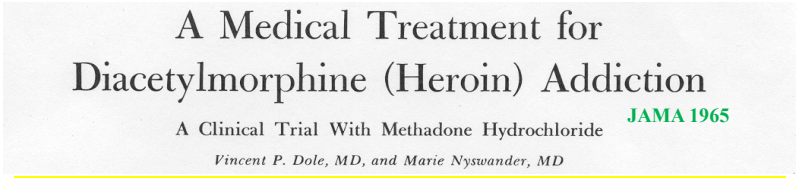
METHADONE MAINTENANCE TREATMENT

Methadone

- Full opioid agonist
- PO onset of action 30-60 minutes
- Duration of action 24-36 hours to treat OUD
- Proper dosing for OUD
  - 20-40 mg for acute withdrawal
  - >80 mg for craving, "opioid blockade"

Opioid Treatment Program dispenses

- Highly structured
- Observed daily → "Take homes"


A Medical Treatment for
Diacetylmorphine (Heroin) Addiction
A Clinical Trial With Methadone Hydrochloride
JAMA 1965
Vincent P. Dole, MD, and Marie Nyswander, MD

EXTENSIVE RESEARCH ON EFFECTIVENESS

- Increases treatment retention
- Decreases illicit opioid use
- Decreases hepatitis and HIV seroconversion
- Decreases mortality
- Decreases criminal activity
- Increases employment
- Improves birth outcomes

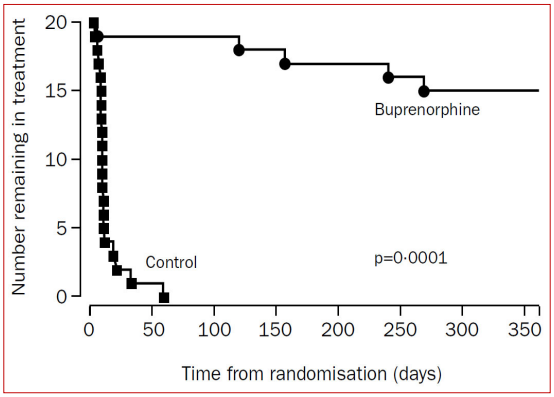
METHADONE MAINTENANCE LIMITATIONS

- Highly regulated - *Narcotic Addict Treatment Act 1974*
- Limited access
- Inconvenient and highly punitive
- Mixes stable and unstable patients
- Lack of privacy
- **Stigma "Substituting one drug for another…I don't believe in methadone"**

BUPRENORPHINE

- Semi-synthetic analogue of thebaine
- FDA approved 2002 as schedule III
- High receptor affinity
- Slow receptor dissociation
- Ceiling effect on CNS and respiratory depression
- Mu-opioid receptor partial agonist
- Kappa-opioid receptor antagonist (antidepressant and anxiolytic effects)

BUPRENORPHINE MAINTENANCE VS TAPER

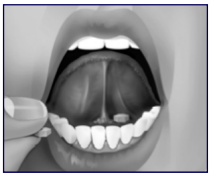


- 1-year retention in treatment
  - ✓Maintenance group: 75%
  - ✓Placebo/ Taper group : 0%
- Mean % urine screen negative
  - ✓Maintenance: ~75%
- Mortality
  - ✓Maintenance: 0%
  - ✓Placebo/Taper: 20%

Kakko J et al. Lancet 2003

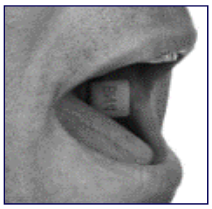
BUPRENORPHINE FORMULATIONS

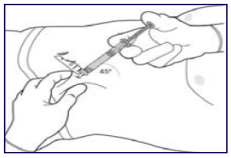
Drug	Formulations	Maintenance
Buprenorphine		
generic	SL tabs	16 mg/d
Probuphine	SD implant	4 implants/6m
Sublocade	SQ injection	100 mg/m
Buprenorphine/Naloxone		
generic	SL tabs	16/4 mg/d
Bunavail	buccal film	8.4/1.4 mg/d
Suboxone	SL film	16/4 mg/d
Zubsolv	SL tab	11.4/2.8 mg/d



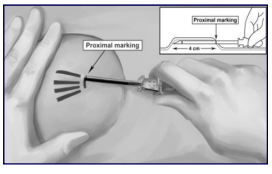
SL Tablet

Buccal film





SQ injection



SD implant

BUPRENORPHINE EFFICACY SUMMARY

Studies (RCT) show buprenorphine (**16-24 mg**) more effective than placebo and equally effective to moderate doses (80 mg) of methadone on primary outcomes of:

- Retention in treatment
- Abstinence from illicit opioid use
- Decreased opioid craving
- Decreased mortality
- Improved occupational stability
- Improved psychosocial outcomes

Effective
Placebo <BUP = Methadone

Johnson et al. *NEJM* 2000, Fudala PJ et al. *NEJM* 2003, Kakko J et al. *Lancet* 2003

NALTREXONE

- Pure opioid antagonist
  - ✓ Patients physically dependent must be **opioid free for a minimum of 7-10 days before treatment**

- Oral naltrexone (FDA approved 1984)
  - ✓ Well tolerated, safe, duration of action 24-48 hours
  - ✓ No statistically significant difference compared to placebo (**Minozzi S et al. 2011**)
  - ✓ Only 28% of people were retained in treatment in the included studies

- More effective than placebo when patients legally mandated to take it
- Injectable XR naltrexone (FDA approved 2010)
  - ✓IM with customized needle/month

STARTING MEDICATIONS FOR OUD PATIENTS THAT PRESENT ON INPATIENT

- Inpatient Service

Compared with an inpatient detoxification, initiation of and linkage to buprenorphine treatment is effective for engaging medically hospitalized patients, who are not seeking addiction treatment, and reduces illicit opioid use 6 months after hospitalization

Liebschutz JM et al. *JAMA Intern Med.* 2014

"OVERCOMING MY FEAR OF TREATING OPIOID USE DISORDER."

Dr. P was reluctant to obtain a waiver to prescribe buprenorphine for the treatment of OUD until her patient (Ms. L) with longstanding OUD died from a fatal opioid overdose…

"Caring for these patients has become the most meaningful part of my practice."

"Providing some sense of normalcy for patients whose lives are roiled by overdose and estrangement is the most profound therapeutic intervention I've engaged in as a caregiver."

"I did not know what Ms. L. meant all those years ago when she said that she only wished to feel normal again. I wish that I'd listened more closely. I wish that I had not been afraid."

Provenzano AM. *N Engl J Med.* 2018

DRUG ADDICTION TREATMENT ACT (DATA) 2000

- Qualified physician (e.g., 8 h training "X waiver") to prescribe scheduled III - V, narcotic FDA approved for OUD treatment (i.e., buprenorphine) with patient limits (30 →100 → 275)

Comprehensive Addiction and Recovery Act (CARA) 2016

- Expands to qualified NPs and PAs:

✓ Require 24 hours of training

✓ Must be supervised by qualifying physician if required by state law

Mainstreaming Addiction Treatment Act (MAT)

- Proposed in House and Senate
- Eliminate the "X Waiver"
- Required national education campaign for physicians and advanced practice providers

Removal of DATA Waiver (X Waiver) Requirement

- DATA waiver registration is no longer required for treating patients of OUD with buprenorphine.
- For buprenorphine prescription, only require standard DEA registration number
- No longer cap/ any limit on number of patients a prescriber may treat for OUD on buprenorphine
- The Act does not impact existing state laws or regulations that may be applicable.

✓ **Effective June 2023: 8 hour new training for all prescribers for controlled substances**

DATA (X WAIVER) WAIVER

PROS

1. Expanded access to care

Increase in number of physicians who are able to provide access to care for individuals with OUD.

2. Reduced stigma

There would be no longer need for specialized training for providers; could be prescribed by any provider.

3. Reduced administrative burden

Process of obtaining X waiver was time consuming and costly for providers.

CONS

1. Potential for misuse

Schedule III with potential for misuse and diversion.

2. Quality of care concerns

Without training/ certification, there can be concerns about quality of care provided by providers.

3. Patient safety concerns

There could be inexperienced providers prescribing buprenorphine without sufficient knowledge/ support, and impact patient health.

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Suggestions?
Comments?
Questions?