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Opioid Use Disorder Management: Initiation of Opioid Replacement Therapy in the Inpatient Setting

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Disclosure

I have no financial interest to disclose
Off-label indications may be discussed during Q&A.
At the conclusion of this activity, participants should be able to successfully:

• Define opioid use disorder (OUD)
• Identify appropriate opportunities for initiation of replacement therapy or medicated assisted treatment (MAT)
• Understand the use of the Clinical Opioid Withdrawal Scale (COWS) for appropriate dose replacement
Opioid Use Disorder
### DSM-5 Criteria for Diagnosis of Opioid Use Disorder

**Diagnostic Criteria**
These criteria are not considered to be met for those individuals taking opioids solely under appropriate medical supervision.

**Check all that apply**

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<tr>
<td></td>
<td>Opioids are often taken in larger amounts or over a longer period of time than intended.</td>
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<td>There is a persistent desire or unsuccessful efforts to cut down or control opioid use.</td>
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<td>A great deal of time is spent in activities necessary to obtain the opioid, use the opioid, or recover from its effects.</td>
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<td>Craving, or a strong desire to use opioids.</td>
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<td>Continued opioid use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of opioids.</td>
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<td>Important social, occupational or recreational activities are given up or reduced because of opioid use.</td>
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<td>Recurrent opioid use in situations in which it is physically hazardous</td>
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<tr>
<td>Continued use despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by opioids.</td>
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</table>
*Tolerance, as defined by either of the following:
(a) a need for markedly increased amounts of opioids to achieve intoxication or desired effect
(b) markedly diminished effect with continued use of the same amount of an opioid

*Withdrawal, as manifested by either of the following:
(a) the characteristic opioid withdrawal syndrome
(b) the same (or a closely related) substance are taken to relieve or avoid withdrawal symptoms

Total Number Boxes Checked: ____________

Severity: Mild: 2-3 symptoms. Moderate: 4-5 symptoms. Severe: 6 or more symptoms

*Criteria from American Psychiatric Association (2013). Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition., Washington, DC, American Psychiatric Association page 541. For use outside of IT MATTTRs Colorado, please contact ITMATTTRsColorado@ucdenver.edu
Risks associated with opioid use disorder patients

- In 2015, 33K died of OD involving opioids
- Between 2002 - 2018 the prevalence of heroin use has nearly doubled.
- Patients with opioid related and unrelated issues are often hospitalized
- They are more likely to leave AMA
- They face a higher risk of death upon D/C
- They have higher medical costs, more hospitalizations, more co-morbidities, and increased use of medical services

- Volkow 2020, Noska et al. 2015, White 2005
This section is not intended to impose any limitations on a physician or authorized hospital staff to administer or dispense narcotic drugs in a hospital to maintain or detoxify a person as an incidental adjunct to medical or surgical treatment of conditions other than addiction, or to administer or dispense narcotic drugs to persons with intractable pain in which no relief or cure is possible or none has been found after reasonable efforts.
Who is appropriate for MAT in the hospital setting?
Opiate Withdrawal

- Mydriasis
- Tachycardia
- Sweating (diaphoresis)
- Goosebumps (cutis anserina)
- Abdominal pain cramps
- Muscle cramps

"Kicking the habit"

I'm quitting cold turkey!

Vomit
Urine
Diarrhea
Anybody who has withdrawal symptoms that may interfere with the treatment of presenting illness

Interventions?
METHADONE
Methadone

**Advantages**
- Start immediately 10 mg TID without psychiatric consultation
- Long half life prevents withdrawal symptoms
- Effective for pain in divided dosing
- Will not complicate surgery or anesthesia
- Can use breakthrough pain management
- Methadone clinic availability

**Disadvantages**
- Daily outpatient clinic dosing
- Mu agonist
- Recreational use of opioids still possible
- Respiratory depression
- QT prolongation
Buprenorphine

- Partial Mu agonist
- High affinity and low dissociation for Mu receptor
- Good analgesic, but the effect plateaus
- Ceiling effect on respiratory depression
- Half life of 38 hours
Buprenorphine Ceiling Effect on Respiratory Drive

Classification of opioid agents

- Full agonists: morphine, heroin, methadone, codeine
- Partial Agonists: buprenorphine
- Antagonists: naltrexone, naloxone

Size of opiate-agonist effect

Threshold for respiratory depression

Opiate dose

buprenorphine in opiate addiction ...
onlinelibrary.wiley.com
Advantages to buprenorphine

Occupation of Mu receptor blocks other opioids
Effective pain relief for mild to moderate pain
Tends to prevent additional recreational use
Ease of use for outpatients
Safety
Disadvantages to buprenorphine

Occupation of Mu receptor blocks other opioids
Not as useful for patients expecting surgery
Usually requires a psychiatry consult for transition to outpatient care
Requires an X- waiver
What are our goals on our med-surg units with patients with OUD?
Studies mixed on Medications for Opioid Use Disorder (MOUD) and outcomes

5.7% of 768 patients with IE received MOUD
Rate of 1 yr. Rehospitalization 162/100 patient years for treated patients v. 225/100 pys for untreated.

Kimmel et al. JAMA 2020
MOUD not associated with decreased mortality after 3 months.
Mixed results of MOUD in hospital

Young et al. Addiction 2021

1407 pts. With IE or OM in HCA hospitals in 21 states
Primary outcomes PPD and 30d readmit rates
MOUD in 19.1% of patients
No change in PPD
No change in 30 day readmit rate
BUT... 5.7 day increase in “Gold Standard” IV antibiotics Rx
This one reinforces what we try to do at IMC


4 groups of 220 pts, retrospective study of pts with invasive infections

1. Buprenorphine plus continuation
2. Methadone plus continuation
3. Methadone with taper
4. No MOUD

Groups 1 and 2 showed increased completion rates and decreased 90-day readmission rates.
Methadone

10 mg TID
Manages pain better in divided doses
Nursing can monitor it for sedation and interrupt it
30 mg dosing started at methadone clinic
Transition to once daily dosing for methadone clinic
# COWS Clinical Opiate Withdrawal Scale

<table>
<thead>
<tr>
<th>Resitting Pulse Rate:</th>
<th>GI Upset over last 1/2 hour:</th>
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<tbody>
<tr>
<td>Measured after patient is sitting or lying for one minute</td>
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<tr>
<td>0</td>
<td>0</td>
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<td>1</td>
<td>1</td>
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<td>2</td>
<td>2</td>
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<tr>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

| Sweating: over past 1/2 hour not accounted for by room temperature or patient activity: |
| No report of chills or flushing |
| Subjective report of chills or flushing |
| Flushed or observable moisture on face |
| Beads of sweat on brow or face |
| Sweats streaming off face |
| Tremor observation of outstretched hands: |
| 0 | 0 | No tremor |
| 1 | 1 | Tremor can be felt, but not observed |
| 2 | 2 | Slight tremor observable |
| 4 | 4 | Gross tremor or muscle twitching |

| Sleeplessness Observation during assessment: |
| 0 | 0 | Able to sit still |
| 1 | 1 | Reports difficulty sitting still, but is able to do so |
| 3 | 3 | Frequent shifting or extraneous movements of legs/arms |
| 5 | 5 | Unable to sit still for more than a few seconds |
| Yawning Observation during assessment: |
| 0 | 0 | No yawning |
| 1 | 1 | Yawning once or twice during assessment |
| 2 | 2 | Yawning three or more times during assessment |
| 4 | 4 | Yawning several times/minute |

| Pupil size: |
| 0 | Pupils pinned or normal size for room light |
| 1 | Pupils possibly larger than normal for room light |
| 2 | Pupils moderately dilated |
| 5 | Pupils so dilated that only the rim of the iris is visible |
| Anxiety or irritability: |
| 0 | None |
| 1 | Patient reports increasing irritability or anxiety |
| 2 | Patient obviously irritable |
| 4 | Patient to irritable or anxious that participation in the assessment is difficult |

| Bone or Joint aches: If patient was having pain previously, only the additional component attributed to opiates withdrawal is scored: |
| 0 | Not present |
| 1 | Mild diffuse discomfort |
| 2 | Patient reports severe diffuse aching of joints/muscles |
| 4 | Patient is rubbing joints or muscles and is unable to sit still because of discomfort |
| Gooseflesh skin: |
| 0 | Skin is smooth |
| 3 | Piloerection of skin can be felt or hairs standing up on arm |
| 5 | Prominent piloerection |

| Runny nose or tearing: Not accounted for by cold symptoms or allergies: |
| 0 | Not present |
| 1 | Nasal stuffiness or unusually moist eyes |
| 2 | Nose running or tearing |
| 4 | Nose constantly running or tears streaming down cheeks |

| Total Score: |
| The total score is the sum of all items |
| Initials of person completing Assessment: | |

Score: 5-12 mild; 13-24 moderate; 25-36 moderately severe; more than 36 = severe withdrawal
Home buprenorphine induction per SAMHSA

**Initial Assessment**

- **History and Physical**
  - Concurrent medical issues and substance use
  - Medication history (with review of the PDMP)
  - Allergies
  - Mental health status and social history
  - Social history

- **Lab Workup**
  - CBC, CMP, HIV, hepatitis A, B & C
  - Urine drug testing, and consider pregnancy & STD screen

- **Referral**
  - Refer to specialists as indicated
  - Refer to counseling
  - Refer to case management

- **Provide Patient Education**
  - Treatment goals and medication education
  - Side-effects
  - How to store medication at home
  - Patient should update provider with new medications or other changes
  - Establish open communication

- **Discuss Safety Concerns**
  - Altered tolerance to opioids on buprenorphine/suboxone
  - No co-administration of alcohol or benzodiazepines
  - Alert provider if planning pregnancy or pregnant
  - Planned procedures that may require opiate analgesia
**Day One (Induction)**

- **Last opioid use >6-12 hours ago → Moderate Withdrawal (COWS >12) → Give First Dose of Buprenorphine/Naloxone (2 – 4mg)**

  - **2 – 4 Hours Later**
    - *Withdrawal Symptoms Relieved?*
      - **Yes**
        - Prescribe one dose
        - Return to clinic on day two for observation and review
      - **No**
        - Give further 2 – 4mg dose, up to 8mg total

  - **No → Give further 2 – 4mg dose**

- **After 1 Hour**
  - Monitor for precipitated withdrawal
  - If present, treat symptoms
  - Attempt induction 24 hours later
SAMHSA Day 2

**Day Two**

- **No**
  - Give day 1 dose and additional 2 - 4mg up to 16mg total

- **Yes**
  - Adequate symptom relief achieved after induction?
    - **Yes**
      - Induction Complete - Give induction dose as ongoing dose, and review in 1 day
    - **No**
      - 2 - 4 Hours Later

- **No**
  - Give further 2 - 4mg dose, up to 16mg

- **Yes**
  - Withdrawal Symptoms Relieved?
    - **Yes**
      - Induction Complete - Give induction dose as ongoing dose, and review in 1 day
SAMHSA Maintenance

**Maintenance**

- **No** → Consider further 2 – 4mg dose, up to 16mg
- **Patient Stable On Current Dose?**
  - **Yes** → Continue once daily dosing with regular review

**Perform monthly urinary drug screens, and check PDMP regularly. Ensure on-going attendance at counseling and support groups. When patient stable on medication, assess readiness for take-home dosing.**
Subjective Opiate Withdrawal Scale (SOWS)

Instructions: We want to know how you’re feeling. In the column below today’s date and time, use the scale to write in a number from 0-4 about how you feel about each symptom right now.

Scale: 0 = not at all 1 = a little 2 = moderately 3 = quite a bit 4 = extremely

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
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<table>
<thead>
<tr>
<th>SYMPTOM</th>
<th>SCORE</th>
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<tbody>
<tr>
<td>1. I feel anxious</td>
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<td>2. I feel like yawning</td>
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<td>3. I am perspiring</td>
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<td>4. My eyes are tearing</td>
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<td>5. My nose is running</td>
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<td>6. I have goosebumps</td>
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<td>7. I am shaking</td>
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<td>8. I have hot flushes</td>
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<td>9. I have cold flushes</td>
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<td>10. My bones and muscles ache</td>
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<td>11. I feel restless</td>
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<td>12. I feel nauseous</td>
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<tr>
<td>13. I feel like vomiting</td>
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<td>14. My muscles twitch</td>
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<td>15. I have stomach cramps</td>
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<td>16. I feel like using now</td>
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<tr>
<td><strong>TOTAL</strong></td>
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Mild Withdrawal = score of 1 – 10
Moderate withdrawal = 11 – 20
Severe withdrawal = 21 – 30

Source: Reprinted from Mandell et al. 1967, p. 396, by courtesy of Marcel Dekker, Inc. For use outside of IT MATTERS Colorado, please contact ITMATTERSinformation@wadsworth.edu.
Fig. 3

Timeline of opioid withdrawal scales development

Legend
- Single Dose Opiate Questionnaire (SDQ)
- Addiction Research Center Inventory (ARCI)
- Opiate Withdrawal Scale (OPW)
- Strong Opiate Withdrawal Scale (SOWS)
- Weak Opiate Withdrawal Scale (WOWS)
- Opiate Withdrawal Scale (OWS)
- Subjective Opiate Withdrawal Scale (SOQW)
- Objective Opiate Withdrawal Scale (OOWS)
- Adjective Rating Scale for Withdrawal (ARSW)
- Clinical Institute Narcotic Assessment (CINA)
- Short Opiate Withdrawal Scale (SOWS)-Gossop
- Subjective Opiate Withdrawal Questionnaire (SOWQ)
- Clinical Opiate Withdrawal Scale (COWS)
The Wander Induction

24-hour washout with deviation for methadone
1 mg test dose for listed withdrawal symptoms
Then 4 mg every 4 hours as needed for withdrawal symptoms
Chills and sweats most salient symptoms
The Coudreaut Induction

Details for **buprenorphine-naloxone** (buprenorphine-naloxone 2 mg-0.5 mg sublingual tablet)

- **Dose**: 0.5
- **Route of administration**: SubLingual
- **Frequency**: every 4 hr
- **PRN reason**: **withdrawal**
# The Malhorta Induction

<table>
<thead>
<tr>
<th>Day</th>
<th>Instructions</th>
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| Day 1 | • Administer buprenorphine 4 mg sublingual tablet after moderate withdrawal symptoms have appeared.<br>  
      | • Observe patient for 1-2 hours after administration.<br>                   |
|       |   a. If symptoms continue, an additional 2-4 mg of buprenorphine may be administered.|
|       |   b. If symptoms persist, an additional 2-4 mg may be administered to achieve a maximum dose of 8 mg.|
| Day 2 | • Use same dosing schedule as day 1.<br>                                     |
|       |   a. If needed, may increase dose to a maximum of 12 mg.                     |
| Day 3 | • Use same dosing schedule as day 2.<br>                                     |
|       |   a. If needed, may increase dose to a maximum of 16 mg.                     |
| Day 4+ | • Continue previous dosing from day 3 forward.                              |

Note: Individualize dosing to a patient’s specific needs. Not every patient will require 16 mg of buprenorphine to achieve relief. Dosing may be split across 8 to 12 hours.
Bibliography/References

American Psychiatric Association DSM-V
SAMHSA Buprenorphine Quick Start Guide
FDA Methadone Monograph
FDA Buprenorphine Monograph
Draft: Order Verification Process of Methadone and Buprenorphine for the Treatment and Prevention of Opioid Withdrawal. Intermountain Medical Center Department of Pharmacy Services