Tools to Support Hospital-Based Addiction Care:
Core Components, Values and Activities of the Improving Addiction Care Team

Appendices

Table of Contents

Medication

Assessments

Treatment tools

Other useful documents

Appendix 1

Medications to treat substance use disorders

a. Opioid Use Disorder (OUD)

Medication choice for adults with OUD is primarily driven by 1) patient preference and 2) access. For instance, if there is no opioid treatment program available near a patient's home or if the patient will be discharging to a nursing facility and is unable to access methadone at the facility, we are unlikely to offer it as on option, however, we discuss all available treatment options with each patient.

Methadone – In general, we follow methadone induction and stabilization guidelines as outlined by the American Society of Addiction Medicine Methadone Action Group (Baxter et al. 2013). Following these guidelines, we do not offer an initial dose greater than 30mg. However, the hospital setting allows us to easily assess the patient 3 to 4 hours after the initial dose, when methadone effects are peaking. If there is no sedation and the patient is still symptomatic, we will often give another 10mg for a total of 40mg the first day. Conversely, the multiple comorbidities of many hospitalized patients (e.g. COPD, use of other centrally acting medications, kyphoscoliosis) often leads us to dose more conservatively than we otherwise would in a healthier, ambulatory population. An alternative dosing regimen would be to start with 10mg as the initial dose and repeat dose every 8-12 hours for a maximum of 40mg. Patients who have lower opioid tolerance, such as those with a prescription OUD, may find benefit from starting at a lower dose of 5mg (Chou et al. 2014). **Providers cannot legally write a prescription for methadone for the treatment of OUD on discharge** (Harrison Narcotics Tax Act 1914). Therefore, it is important, whenever possible, to provide a dose in the hospital on the day of discharge and to ensure follow-up at a methadone treatment center the following day.

Buprenorphine – In a hospital setting, providers do not need a DATA waiver to begin buprenorphine. However, because they have not been trained in the use of buprenorphine, many are not familiar with the induction process. We have created an electronic order set that links to the Clinical Opioid Withdrawal Scale (COWS) (Wesson and Ling 2003) for nurses to assess opioid withdrawal and that begins the induction process in a protocolized manner once the COWS score is greater than 10. If a patient is transitioning from a longer acting medication, like methadone, to buprenorphine, we generally wait 48 hours before buprenorphine induction. Once triggered, the induction protocol follows induction guidelines as outlined by the PCSS and SAMHSA's TIP 63, Part 3 (Gunderson 2018, SAMHSA 2018).

Before induction, we use supportive medications, as outlined in both guidelines, to address symptoms of withdrawal. **A DATA waived provider must write the prescription for buprenorphine on discharge.**

Naltrexone ER – Hospital administration of naltrexone ER is less common than opioid agonist therapy given prevalence of acute pain, patient preference, and the need sufficient opioid-free window prior to administration.

If there is concern for recent opioid use or potential for precipitated withdrawal based on history, physical exam, hospital or emergency department medication administration record, or urine drug screen, we conduct a naloxone challenge and/or wait before initiating naltrexone (Providers Clinical Support System 2018). There are several induction strategies if opioids are present prior to administration (Sullivan et al. 2017; Gunderson 2018, Rudolf et al. 2018; SAMHSA 2018).

b. Alcohol Use Disorder

Medication choice for adults with AUD is primarily driven by 1) patient preference and 2) comorbidities. For instance, patients with acute hepatitis and liver function tests greater than 5 times the upper limit of normal should not start naltrexone. Acamprosate – which is renally cleared – should be avoided if glomerular filtration rate (GFR) is less than 30 and dose adjusted for GFR 30-55. If a patient has no history of opioid use and is interested in beginning naltrexone, we conduct a urine drug screen (UDS). If it the UDS is negative for opioids (a contraindication to naltrexone initiation), we proceed with initiation of oral naltrexone or extended release naltrexone injection. If there is concern for recent opioid use or potential for precipitated withdrawal based on history, physical exam, hospital or emergency department medication administration record, or urine drug screen, we conduct a naloxone challenge and/or wait before initiating naltrexone (Sullivan et al. 2017; Gunderson 2018; Rudolf et al., 2018; SAMHSA 2018).

We find the article by Jonas et al. (2014) and Johnson (2018) useful references and guides to the use of medications for alcohol use disorder.

References:

1. Baxter LE, Sr., Campbell A, Deshields M, et al. Safe methadone induction and stabilization: Report of an expert panel. *J Addict Med* 2013;7:377-86.
2. Chou R, Cruciani, RA, Riellin DA, et al. Methadone safety: A clinial practice guideline from the American Pain Society and College on Problems of Drug Dependence, in collaboration with the Heart Rhythm Society. *J Pain* 2014;15(4):321-37. doi: 10.1016/j.jpain.2014.01.494.
3. Gunderson E. Models of Buprenorphine Induction. In: Providers' Clinical Support System for Medication Assisted Treatment. 2018. Available at: http://pcssnow.org/wp-content/uploads/2015/02/Buprenorphine-Induction-Online-Module.pdf. Accessed September 4, 2018.
4. Johnson BA. Pharmacotherapy for alcohol use disorder. *UpToDate*. 2018. Available at: https://www.uptodate.com/contents/pharmacotherapy-for-alcohol-use-disorder. Accessed September 4, 2018.
5. Jonas DE, Amick HR, Feltner C, et al. Pharmacotherapy for adults with alcohol use disorders in outpatient settings: A systematic review and meta-analysis. *JAMA* 2014;311:1889-900.
6. Rudolf G, Walsh J, Plawman A, et al. A novel non-opioid protocol for medically supervised opioid withdrawal and transition to antagonist treatment. *Am J Drug Alcohol Abuse* 2018;44:302-309.
7. Sixty-Third Congress of the United States. Harrison Narcotics Tax Act of 1914. §1.38.785. Available at: https://www.naabt.org/documents/Harrison_Narcotics_Tax_Act_1914.pdf. Accessed September 4, 2018.
8. Substance Abuse and Mental Health Services Administration (SAMSHA). Treatment improvement protocol (TIP) 63: Medications for opioid use disorder – pharmacotherapy for opioid use disorder (Part 3 of 5). In: 2018. Available at: https://store.samhsa.gov/shin/content//SMA18-5063PT3/SMA18-5063PT3.pdf. Accessed September 4, 2018.
9. Wesson DR, & Ling W. The clinical opiate withdrawal scale (COWS). *J Psychoactive Drugs* 2003;35(2), 253–9.
10. XR-Naltrexone: A step-by-step guide. In: Providers' Clinical Support System for Medication Assisted Treatment. Available at: http://pcssnow.org/wp-content/uploads/2017/02/Naltrexone_Step-by-Step_Virtual_Brochure-1.pdf. Accessed September 4, 2018.

Appendix 2

Withdrawal Management

Opioid Withdrawal – If patients are not interested in treatment with any of the medications approved for OUD, we will support them through acute opioid withdrawal, which can last 2-7 days. If the patient will be in the hospital for a prolonged period (e.g 2 weeks or more), we offer methadone to abate the symptoms of acute opioid withdrawal per prior dosing recommendations but do not generally increase the dose beyond 60mg and we taper methadone prior to discharge. The taper regimen and length is based on expected hospital length of stay, but a typical taper is to reduce methadone dose by 5-10 mg per day until it is stopped. We do not hold patients in the hospital for a methadone taper. For shorter hospital stays, we use the same supportive medications we use for buprenorphine or naltrexone induction, including clonidine, hydroxyzine, acetaminophen, and ibuprofen.

Alcohol Withdrawal – Most hospital-based providers are comfortable managing alcohol withdrawal any many hospitals have protocols in place. When in doubt, we find the article by Johnson (2018) to be a useful reference.

1. Johnson BA. Pharmacotherapy for alcohol use disorder. *UpToDate*. 2018. Available at: https://www.uptodate.com/contents/pharmacotherapy-for-alcohol-use-disorder. Accessed September 4, 2018.

Appendix 3

OHSU HEALTHCARE SYSTEM

Policy # HC-PAT-119-POL	**Title:** Use of Medication to Treat Opioid Use Disorder (Pregnant and Non-Pregnant Patients)	
Effective Date: 4/25/2016	**Category:** Pharmacy and Therapeutics Policy	
Origination Date: 8/31/2015	**Next Review Date:** 4/25/2018	Page 1 of 5

PURPOSE:

To clarify the use of medications (methadone, buprenorphine/naloxone, buprenorphine, naltrexone) for opioid withdrawal management or opioid maintenance therapy in patients with opioid use disorder who are hospitalized or seen in the emergency department.

PERSONS AFFECTED:

OHSU Healthcare Workforce administering, prescribing, and dispensing medications for opioid use disorders. This policy excludes patients on opioid agonist or partial agonist therapy for chronic pain.

DEFINITIONS:

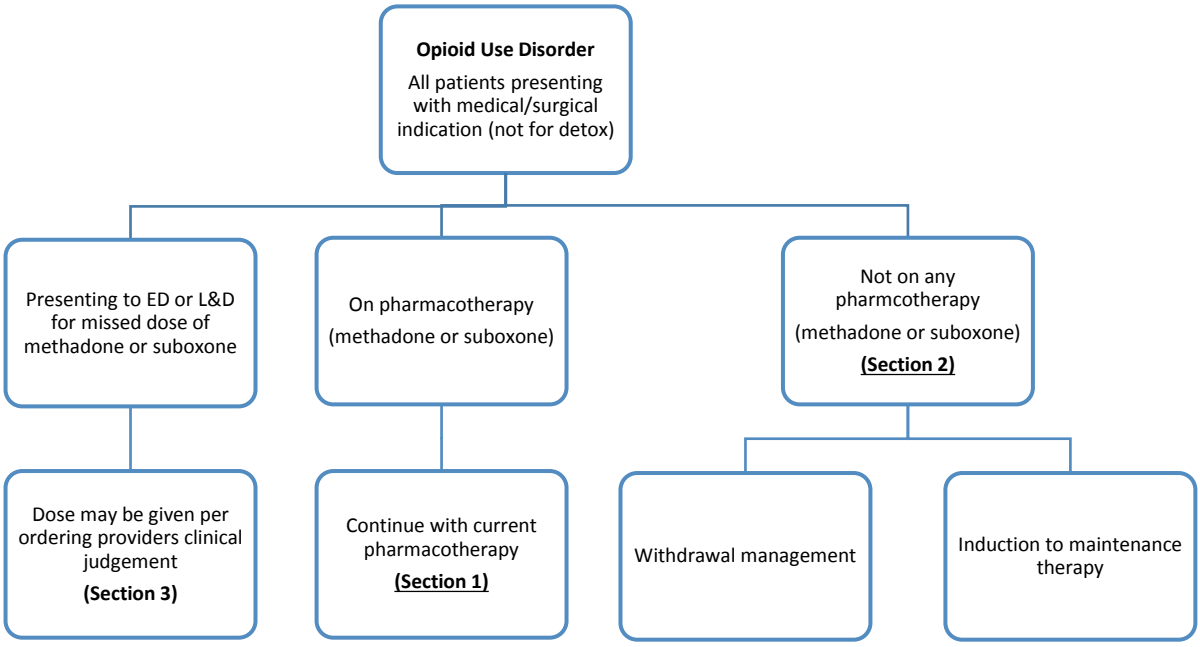
1. DATA 2000: Drug Addiction Treatment Act (DATA) of 2000. This program permits qualified physicians to treat opioid use disorders with schedules III-V opioids that are approved by the Food and Drug Administration (FDA) for that indication.
2. Methadone: a full opioid agonist medication that is typically given once daily as a liquid to treat opioid use disorder in patients with moderate to severe opioid use disorder. Methadone can only be administered in a hospital or a federally licensed opioid treatment program (OTP) unless it is prescribed for the use of pain.
3. Buprenorphine/naloxone (Suboxone) (4:1 combination): sublingual tab or film and generic equivalents are schedule CIII prescription partial opioid-agonists indicated for treatment of moderate to severe opioid use disorder or opioid withdrawal and should be used as part of a complete treatment plan to include counseling and psychosocial support. Treatment should be initiated with guidance from physicians qualified under the Drug Addiction Treatment Act.
4. Sublingual buprenorphine (Subutex): tablets and generic equivalents are partial opioid agonists indicated for the treatment of moderate to severe opioid use disorders or opioid withdrawal and subject to the same prescribing restrictions as buprenorphine/naloxone (Suboxone).
5. Extended release (ER) naltrexone (Vivitrol): An intramuscular extended release opioid antagonist indicated for the treatment of opioid use disorder. Opioid abstinence must be confirmed prior to administration of this medication. Naltrexone is currently contraindicated in pregnancy.
6. Buprenorphine extended-release injection (Sublocade): An intramuscular extended-release form for use as subcutaneous injection only. Following injection of the solution, a polymer is formed which releases buprenorphine via diffusion of the depot.

POLICY:

Opioid agonist (methadone) or partial-agonist therapy (buprenorphine/naloxone and buprenorphine) will only be administered or ordered for inpatient, emergency department (ED) and labor and delivery (L&D)patients under two circumstances.

1. To maintain the patient's current opioid use disorder maintenance treatment if the patient is admitted for a primary diagnosis or treatment condition other than opioid use disorder.
2. To initiate therapy - initiation and dose adjustments may be ordered by any provider in the inpatient, ED, and L&D setting for treatment of opioid withdrawal and/or opioid use disorder.

Extended release naltrexone can be administered during hospitalization regardless of hospitalization indication. However, this medication can only be prescribed after approval is granted by an addiction medicine consultant. Licensed Independent Practitioners may not prescribe opioid agonist therapy to treat opioid use disorder at discharge. Providers may only prescribe partial opioid agonist for opioid use disorder if they are DATA waivered.



PROCEDURES:

Section 1:

Continuation of opioid use disorder maintenance treatment during hospitalization:

Prior to administration of the opioid agonist or partial-agonist therapy, the pharmacist or provider must ensure the opioid maintenance dose is confirmed with the licensed treatment program and document this information in the integrated healthcare record.

a. In the event the patient's treatment center is closed or unable to be contacted, a dose may be ordered under the discretion of the provider. The patient's treatment center should be contacted as soon as possible for subsequent doses to be administered.

I. A single dose of methadone should not exceed 30 mg without treatment center confirmation.
II. Dose of buprenorphine/naloxone or buprenorphine can be confirmed via the patient's pharmacy or the state Prescription Drug Monitoring Program (PDMP) if DATA waiver physician is not available for confirmation.

b. The admitting provider may order the maintenance dose for daily administration to the patient in the inpatient, ED, or L&D setting until the patient is discharged.
c. Patient's own treatment medication may not be administered. Refer to, Use of Patient's Personal Medications policy.

Section 2:

Initiation of medications to treat opioid use disorder: **Admitted for a condition other than opioid use disorder**

a. Any inpatient provider can order medications (methadone, buprenorphine/naloxone, buprenorphine) to treat opioid use disorder
b. Addiction medicine consult is available if needed, but not required
c. Patients do not need to be previously enrolled in an Opioid Treatment Program
d. Providers may **not** prescribe opioid agonist to treat opioid use disorder after hospitalization. They may only prescribe partial agonists on discharge if they are DATA waivered.
e. If the patient wishes to continue agonist therapy, a prescribing community provider or an appropriate opioid treatment program should be identified before discharge
f. Refer to **Attachment A** for methadone dosing guidance
g. Refer to **Attachment B** for buprenorphine dosing guidance

Section 3:

Emergency Department and Labor and Delivery (L&D)

a. Patients arriving in the ED only to request a missed dose of methadone, buprenorphine/naloxone or buprenorphine may receive a one-time administration under the discretion of the provider. A provider or pharmacist must contact the patient's licensed treatment program to verify dose prior to administration
b. **Pregnant patients** prescribed methadone or buprenorphine maintenance therapy arriving in the ED or L&D only to request a dose of methadone or buprenorphine may be administered a one-time dose of their confirmed medication to prevent opioid withdrawal, if clinically indicated and safe.
    i. Clinical indication and safety is confirmed by the following
        1. Clinical Opioid withdrawal scale (COWS) > 5
        2. Urine drug test results show negative benzodiazepine and negative alcohol
        3. The patient does not appear to be clinically intoxicated or sedated.
    ii. In the event the patient's treatment center is closed or unable to be contacted, a single dose may be ordered under the discretion of the provider. The patient's treatment center should be contacted as soon as possible for subsequent doses to be administered.
c. Providers may **not** prescribe opioid agonist after hospitalization. DATA waived providers may prescribe partial-agonist therapy to treat opioid use disorder after hospitalization.

Attachment A: Methadone Initiation Dosing Recommendations

Factors to remember about methadone:

1. Methadone is stored extensively in the liver and secondarily in other body tissues
2. Elimination half–life averages 24 – 36 hours at steady state and can range from 4 – 91 hours
3. Achieving steady-state serum methadone levels requires 4 – 5 days on average. A rule of thumb is that half of each day's dose remains in the body and is added to the next day's dose until steady state is achieved
4. There is a great deal of inter-patient variability in methadone metabolism and tolerance
5. Effects generally peak about 3 – 4 hours after the patient receives a dose

General dosing guidelines:

1. A max dose 30 mg single dose on day one
    - May provide an additional 10 mg dose if needed to equal a total of 40 mg on day one
2. Patients injecting more than 1.5 grams heroin/day and without other risk factors should generally start on 30 – 40 mg daily to attenuate withdrawal symptoms. If the patient still feels withdrawal symptoms 3 – 4 hours after a dose of 30 mg, it is generally safe and recommended to provide another 10 mg
3. Patients who are: taking opioids orally, who do not use opioids or heroin daily, and or who do not inject should be started on a dose of 10 – 20 mg of methadone daily
4. Patients with the following conditions should be started at lower doses (5 – 15 mg daily) and titrated slowly:
    - Respiratory disorder
    - Cor pulmonale
    - Morbid obesity
    - Sleep apnea
    - Kyphoscoliosis
    - Prolonged QT
    - Known arrhythmia
    - Recent MI
    - Family history of early cardiac death
5. Once on 50 mg, generally stay at 50 mg daily x 5 – 7 days, then increase by 5 – 10 mg every 5 – 7 days
6. If the patient has missed methadone doses, do not automatically restart at last known dose. Remember that if the patient missed doses due to using, it is safer to restart than if they missed doses due to incarceration, in which case their tolerance will be lower. General rule of thumb:
    - If they have missed fewer than 3 doses, restart at last known dose
    - If they have missed 4 – 7 doses, decrease by 50%
    - If they have missed more than a week, restart at 30 mg or lower

Attachment B: Buprenorphine/naloxone (Suboxone) Initiation Dosing Recommendations

Factors to remember about buprenorphine:

1. Buprenorphine is a partial opioid agonist that has a high affinity for the mu opioid receptors. When it occupies the mu opioid receptor, it can decrease withdrawal symptoms and cravings without causing significant euphoria.
2. If buprenorphine is administered to an opioid dependent patient, it can displace full agonists from the mu receptor and trigger a precipitated withdrawal.
3. Opioid dependent patients should be in moderate withdrawal (as measured by the Clinical Opioid Withdrawal Scale) before receiving buprenorphine in order to avoid precipitated withdrawal. This excludes patients for whom there is reasonable certainty no opioid has been ingested for >3 days, such as a patient who has been hospitalized for several days, in whom UDS shows no opioid, and who has prior history of withdrawal and high risk for relapse to opioid use at discharge
4. Patients will generally begin to feel the effects of buprenorphine on cravings/withdrawal within 20 – 45 minutes of administration.

General Dosing Guidelines

1. Buprenorphine and naloxone (Suboxone) dosing is based of buprenorphine dose
2. In general, the maximum daily dose on day one is 8 – 12 mg, but it may be higher
3. Patients who are dependent on oral pain pills should generally start with a 2 mg dose. Patients injecting heroin or snorting/injecting pills may start with 4 mg
4. Continue to offer buprenorphine every 1-2 hours until the maximum dose for the day has been reached, or the patient reports no further cravings or withdrawal
5. There is an order set in EPIC that attaches the Clinical Opioid Withdrawal Scale (COWS), to supportive medications and to dosing for induction (GEN: BUPRENORPHINE-NALOXONE: INITIATION)

Attachment C: Supportive Care Medications

Medication	**Dose and frequency**
Clonidine	0.1-0.2 mg PO three times daily as needed, sweating/agitation. Hold for sedation/dizziness
Tizanidine	2-4 mg PO every 6 hours as needed, muscle spasms
Hydroxyzine	25-50 mg PO every 4 hours as needed, anxiety
Ondansetron	4 mg PO every 8 hours as needed, nausea/vomiting
Hyoscyamine	0.125 mg PO every 6 hours as needed, abdominal cramping
loperamide	4 mg PO four times daily as needed, diarrhea

RELEVANT REFERENCES:

- Drug Enforcement Administration §1306.07 and §1301.28
- Drug Enforcement Administration: Drug Addiction Treatment Act 2000
- Substance Abuse and Mental Health Services Administration FAQ on buprenorphine: http://buprenorphine.samhsa.gov/faq.html#A14
- https://www.samhsa.gov/programs-campaigns/medication-assisted-treatment/legislation-regulations-guidelines/special

RELATED DOCUMENTS/EXTERNAL LINKS:

Use of Patient's Personal Medications

TITLE, POLICY OWNER:

Department of Pharmacy Services

APPROVING COMMITTEE(S):

Medication Safety Committee

FINAL APPROVAL:

Pharmacy and Therapeutics Committee

Appendix 4

Approach to acute pain management in patients with opioid use disorder

Patients with acute pain and OUD often face the dual challenges of tolerance to opioids and hesitation on the part of the primary team to treat pain in the face of an opioid use disorder. We:

1. Remind teams that patients with OUD will often need higher doses of opioid due to increased opioid tolerance.
2. Work closely with the Acute Pain Service to begin multimodal pain management including, when appropriate, ketamine infusion, nerve blocks, ice, heat, and non-opioid medications.
3. Strongly recommend continuing buprenorphine-naloxone if the patient is already on it, including during the perioperative period (Appendix 4). We frequently split the total daily dose of buprenorphine-naloxone and administer two or three doses throughout the day for improved analgesia and/or add additional doses for pain control (Alford et al. 2006). For additional pain control in the acute setting, we also use potent opioids like hydromorphone in addition to buprenorphine.

1. Alford DP, Compton P, Samet JH. Acute pain management for patients receiving maintenance methadone or buprenorphine therapy. *Ann Intern Med* 2006;144:127-34.

Appendix 5

OREGON HEALTH AND SCIENCE UNIVERSITY

OFFICE OF CLINICAL INTEGRATION AND EVIDENCE-BASED PRACTICE

PRACTICE RECOMMENDATIONS FOR THE PERIOPERATIVE MANAGEMENT OF PATIENTS ON BUPRENORPHINE-CONTAINING DRUGS

Background: Opioid dependence is a significant and growing problem in the United States. [1] Therefore, more patients with opioid use disorder are receiving opioid replacement therapy with methadone or buprenorphine. As a result, physicians will more frequently encounter patients receiving opioid replacement therapy who develop acutely painful conditions, requiring effective treatment strategies. [2] This presents clinicians with greater challenges than those faced when treating the opioid-naive. Treatment aims include effective relief of acute pain, prevention of drug withdrawal, assistance with any related social, psychiatric and behavioral issues, and ensuring continuity of long-term care. [3]

Benefits and Harms for Consideration:

Benefits of continuing use of Buprenorphine-containing drugs in the perioperative period: To reassure patients with a history of opioid use disorders that their pain will be adequately managed. Additionally, patients who continue buprenorphine use have a lower risk of relapse. [2]

Harms of stopping use of Buprenorphine-containing drugs in the perioperative period: Unsuccessful or under treatment of acute pain in patients receiving long-term opioid replacement therapy. [2] Discontinuation of buprenorphine -- whether outside of care or under a clinician's guidance -- is highly associated with relapse, with reported relapse rates as high as 90%. More importantly, both all cause and overdose mortality is more than double among patients who have discontinued buprenorphine when compared to mortality rates of patients who remain on the medication. [4-9]

Definitions:

Opioid Use Disorder: A problematic pattern of opioid use leading to clinically significant impairment or distress. It often includes a strong desire to use opioids, increased tolerance to opioids, and withdrawal syndrome when opioids are abruptly discontinued.
Mild Pain: Noticeable but tolerable, does not interfere with sleep or activities (able to cough, deep breath and ambulate)
Moderate Pain: Strong, deep, distressing, interferes with sleep and activities (coughing, deep breathing, ambulation)
Severe Pain: Very intense, dominates thought, prevents sleep and movement
IV: an apparatus used to administer a fluid (as of medication, blood, or nutrients) intravenously
PCA: Patient-controlled analgesia
NOTE: Buprenorphine is a partial opioid-agonist. Morphine equivalent dose is not easily translatable for buprenorphine, so buprenorphine is not subject to morphine milligram equivalents (MME/day) dose exclusion. Approximately 30 times as potent as morphine, buprenorphine produces effective analgesia at low receptor occupancy (5 to 10%). [9-13] It is a partial agonist at the μ receptor and an antagonist at the κ and Δ receptors, with a wide safety profile including less potential for abuse and respiratory depression compared with traditional opioids. [9, 14-18]

Guideline Eligibility Criteria:

-Surgical patients on buprenorphine-containing drugs
-Pregnant women on buprenorphine-containing drugs

Guideline Exclusion Criteria:

-None

Evidence Summary: *(see accompanying evidence brief)*
Currently, no consensus nationally or high-level evidence exists on optimal acute pain management strategies for patients receiving opioid replacement therapy. [9] There is a lack of consistency in the literature with one article recommending patients continuously use buprenorphine during the perioperative period, [19] while another recommends patients start short-acting opioid or be weaned off before surgery. [9] Therefore, an evidence review was conducted to evaluate the harms and benefits of continuing buprenorphine for patients undergoing surgical procedures. Three case reports, four case series and one retrospective cohort study were identified, and appraised using the GRADE methodology. **Although the literature is of very low quality, it does support the continuation of buprenorphine for patients requiring surgery.** Additionally, one systematic review, one case series and one historical-cohort control study found **there is very low quality evidence to support the continuation of opioid replacement therapy through labor, delivery, and the post-partum period.**

Clinical Practice Recommendations

Continuing Buprenorphine Use in Perioperative Period

Continue buprenorphine use in the perioperative period for surgical patients on buprenorphine. [20-29]

- *Strong Recommendation; Very Low Quality Evidence*

PRACTICE IMPLICATIONS FOR OHSU:

The surgical team will be the first one identifying patients on buprenorphine and should communicate with Perioperative Medicine Clinic and anesthesia teams to coordinate care.

Continuing Buprenorphine Use in Pregnant Women

Continue buprenorphine use in pregnant women on buprenorphine through labor, delivery, and post-partum period. [30-32]

- *Strong Recommendation; Very Low Quality Evidence*

WHEN POSTOPERATIVE PAIN IS EXPECTED TO BE MILD:

Recommendations for Mild Pain:	
Pre-operative:	• Patient should be informed pre-operatively about challenges in managing postoperative pain. • Continue use of previously prescribed pre-operative dose of non-opioids, unless contraindicated for surgical reasons • To optimize multimodal analgesia, consider adding preoperative non-opioid analgesics such as acetaminophen (APAP), nonsteroidal anti-inflammatory drugs (NSAIDs), and gabapentinoids.

Intra-operative:	• If possible, use local anesthesia during surgical procedure. • If an opioid is needed intraoperatively, use potent opioids, e.g., hydromorphone, fentanyl, or sufentanil.
Post-operative:	• Preferred method is to increase dose of buprenorphine as an analgesia option. Divide daily dose into an every 6-8 hour regimen. May use as needed dosing in addition to regularly scheduled dose. [33-34] • Do not routinely prescribe supplemental opioids.

WHEN POSTOPERATIVE PAIN IS EXPECTED TO BE MODERATE TO SEVERE:

Recommendations for Moderate to Severe Pain:	
Pre-operative:	• Patient should be informed pre-operatively about challenges in managing postoperative pain. • Continue previously prescribed preoperative dose of above non-opioids, unless contraindicated for surgical reasons. • When postoperative pain is expected to be moderate to severe (i.e., anticipated use of postoperative opioids), consult preoperatively with Inpatient Adult Pain Service (APS) and Inpatient Addiction Medicine Service (IMPACT) to develop individual treatment plan. • Consider adding non-opioid analgesics such as acetaminophen (APAP), nonsteroidal anti-inflammatory drugs (NSAIDs), and gabapentinoids.
Intra-operative:	• Regional anesthesia (peripheral nerve blocks, epidural): consider continuous infusion catheters. • Unless contraindicated, use ketamine infusion post-operatively. – IV lidocaine use outside the OR is restricted to APS. – IV ketamine use outside the OR can be used by ICU providers (ICU patients only), palliative medicine team and APS. • Consider intra-operative intravenous (IV) lidocaine infusion (https://ohsu.ellucid.com/documents/view/5307) • Consider intra-operative dexmedetomidine infusion. A post-operative infusion will require ICU stay.
Post-operative:	• Unless contraindicated, use ketamine infusion post-operatively. – IV lidocaine use outside the OR is restricted to APS. – IV ketamine use outside the OR can be used by ICU providers (ICU patients only), palliative medicine team and APS. • Consider post-operative intravenous (IV) lidocaine infusion (https://ohsu.ellucid.com/documents/view/5307) • Consider close nursing respiratory monitoring in the postoperative period. – Patients are at increased risk for respiratory depression. If patient is not in the ICU for other medical reasons, keep remote monitoring pulse oximetry. • Prescribe IV hydromorphone or fentanyl PCA postoperatively. • At discharge, continue inpatient pain management regimen and coordinate follow-up with outpatient buprenorphine prescribing provider for supplemental opioid wean.

BUPRENORPHINE SUPPLY:

Plain buprenorphine	Combined with naloxone (buprenorphine/naloxone)
Preparations include: • Buccal film • Sublingual tablet* • IV injection* • Extended Release: transdermal patch, intradermal implant, and subcutaneous injection	Preparations include: • Sublingual tablet* (available in 2 mg-0.5 mg; 8 mg-2 mg) • Sublingual film • Buccal film

*Available on OHSU inpatient formulary

Quality Measures:

Process

-Continuation of buprenorphine use in perioperative patients on buprenorphine
-Continuation of buprenorphine use in pregnant women on buprenorphine
-Utilization of preoperative non-opioid analgesics in patients on buprenorphine
-Use of potent opioids intraoperatively in patients on buprenorphine
-Supplemental opioids prescribed in patients on buprenorphine
-Referrals to outpatient buprenorphine prescribing provider

Outcome

-Decrease opioid misuse relapse rate of perioperative patients
-Decrease opioid misuse relapse rate of pregnant women through labor, delivery, and post-partum period

References

1. Welsh, C., & Valadez-Meltzer, A. (2005). Buprenorphine: a (relatively) new treatment for opioid dependence. Psychiatry (Edgmont), 2(12), 29-39.
2. Alford, D. P., Compton, P., & Samet, J. H. (2006). Acute Pain Management for Patients Receiving Maintenance Methadone or Buprenorphine Therapy. Annals of Internal Medicine, 144(2), 127-134.
3. Huxtable, C. A., Roberts, L. J., Somogyi, A. A., & MacIntyre, P. E. (2011). Acute pain management in opioid-tolerant patients: a growing challenge. Anaesthesia & Intensive Care, 39(5), 804-823.
4. Fiellin, D. A., Schottenfeld, R. S., Cutter, C. J., Moore, B. A., Barry, D. T., & O'Connor, P. G. (2014). Primary care-based buprenorphine taper vs maintenance therapy for prescription opioid dependence: a randomized clinical trial. JAMA Intern Med, 174(12), 1947-1954. doi:10.1001/jamainternmed.2014.5302
5. Ling, W., Hillhouse, M., Domier, C., Doraimani, G., Hunter, J., Thomas, C., . . . Bilangi, R. (2009). Buprenorphine tapering schedule and illicit opioid use. Addiction, 104(2), 256-265. doi:10.1111/j.1360-0443.2008.02455.x
6. Sordo, L., Barrio, G., Bravo, M. J., Indave, B. I., Degenhardt, L., Wiessing, L., . . . Pastor-Barriuso, R. (2017). Mortality risk during and after opioid substitution treatment: systematic review and meta-analysis of cohort studies. BMJ, 357. doi:10.1136/bmj.j1550
7. Weiss, R. D., Potter, J. S., Fiellin, D. A., Byrne, M., Connery, H. S., Dickinson, W., . . . Ling, W. (2011). Adjunctive counseling during brief and extended buprenorphine-naloxone treatment for prescription opioid dependence: a 2-phase randomized controlled trial. Archives of General Psychiatry, 68(12), 1238-1246. doi:10.1001/archgenpsychiatry.2011.121
8. Briand, L. A., & Blendy, J. A. (2010). Molecular and Genetic Substrates Linking Stress and Addiction. Brain Research, 1314C, 219. doi:10.1016/j.brainres.2009.11.002
9. Anderson, T. A., Quaye, A. N. A., Ward, E. N., Wilens, T. E., Hilliard, P. E., & Brummett, C. M. (2017). To Stop or Not, That Is the Question: Acute Pain Management for the Patient on Chronic Buprenorphine. Anesthesiology, 126(6), 1180-1186. doi:10.1097/aln.0000000000001633
10. Heit, HA, Gourlay, DL . Buprenorphine: new tricks with an old molecule for pain management. *Clin J Pain* 2008; *24*:93–7.
11. Johnson, RE, Fudala, PJ, Payne, R . Buprenorphine: considerations for pain management. *J Pain Symptom Manage* 2005; *29*:297–326.
12. Tigerstedt, I, Tammisto, T . Double-blind, multiple-dose comparison of buprenorphine and morphine in postoperative pain. *Acta Anaesthesiol Scand* 1980; *24*:462–8.
13. Tyers, MB . A classification of opiate receptors that mediate antinociception in animals. *Br J Pharmacol* 1980; *69*:503–12.
14. Walsh, SL, June, HL, Schuh, KJ, Preston, KL, Bigelow, GE, Stitzer, ML . Effects of buprenorphine and methadone in methadone-maintained subjects. *Psychopharmacology (Berl)* 1995; *119*:268–76.
15. Walsh, SL, Preston, KL, Stitzer, ML, Cone, EJ, Bigelow, GE . Clinical pharmacology of buprenorphine: ceiling effects at high doses. *Clin Pharmacol Ther* 1994; *55*:569–80.
16. Cicero, TJ, Inciardi, JA, Surratt, H . Trends in the use and abuse of branded and generic extended release oxycodone and fentanyl products in the United States. *Drug Alcohol Depend* 2007; *91*:115–20.
17. Cicero, TJ, Surratt, H, Inciardi, JA, Munoz, A . Relationship between therapeutic use and abuse of opioid analgesics in rural, suburban, and urban locations in the United States. *Pharmacoepidemiol Drug Saf* 2007; *16*:827–40.
18. Cicero, TJ, Surratt, HL, Inciardi, J . Use and misuse of buprenorphine in the management of opioid addiction. *J Opioid Manag* 2007; *3*:302–8.
19. Lembke, A., Ottestad, E., & Schmiesing, C. (2018). Patients Maintained on Buprenorphine for Opioid Use Disorder Should Continue Buprenorphine Through the Perioperative Period. Pain Medicine, pny019-pny019. doi:10.1093/pm/pny019

20. Book, S. W., Myrick, H., Malcolm, R., & Strain, E. C. (2007). Buprenorphine for postoperative pain following general surgery in a buprenorphine-maintained patient. American Journal of Psychiatry, 164(6), 979. doi:10.1176/ajp.2007.164.6.979
21. Bryson, E. O. (2014). The perioperative management of patients maintained on medications used to manage opioid addiction. Current Opinion in Anaesthesiology, 27(3), 359-364. doi:10.1097/aco.0000000000000052
22. Curatolo, C., & Trinh, M. (2014). Challenges in the perioperative management of the patient receiving extended-release naltrexone. A & A Case Reports, 3(11), 142-144. doi:10.1213/xaa.0000000000000069
23. Huang, A., Katznelson, R., de Perrot, M., & Clarke, H. (2014). Perioperative management of a patient undergoing Clagett window closure stabilized on Suboxone(R) for chronic pain: a case report. Canadian Journal of Anaesthesia, 61(9), 826-831. doi:10.1007/s12630-014-0193-y
24. Israel, J. S., & Poore, S. O. (2013). The clinical conundrum of perioperative pain management in patients with opioid dependence: lessons from two cases. Plastic & Reconstructive Surgery, 131(4), 657e-658e. doi:10.1097/PRS.0b013e31828277bd
25. Khelemsky, Y., Schauer, J., & Loo, N. (2015). Effect of buprenorphine on total intravenous anesthetic requirements during spine surgery. Pain Physician, 18(2), E261-264.
26. Kornfeld, H., & Manfredi, L. (2010). Effectiveness of full agonist opioids in patients stabilized on buprenorphine undergoing major surgery: a case series. American Journal of Therapeutics, 17(5), 523-528. doi:10.1097/MJT.0b013e3181be0804
27. Macintyre, P. E., Russell, R. A., Usher, K. A., Gaughwin, M., & Huxtable, C. A. (2013). Pain relief and opioid requirements in the first 24 hours after surgery in patients taking buprenorphine and methadone opioid substitution therapy. Anaesthesia & Intensive Care, 41(2), 222-230.
28. Salama-Hanna, J., & Chen, G. (2013). Patients with Chronic Pain. Medical Clinics of North America, 97(6), 1201-1215. doi:https://doi.org/10.1016/j.mcna.2013.07.005
29. Silva, M. J., & Rubinstein, A. (2016). Continuous Perioperative Sublingual Buprenorphine. J Pain Palliat Care Pharmacother, 30(4), 289-293. doi:10.1080/15360288.2016.1231734
30. Buckley, D. N., & Ibrahim, M. (2014). Brief review: Obstetric care and perioperative analgesic management of the addicted patient. *Canadian Journal of Anaesthesia, 61*(2), 154-163. doi:https://dx.doi.org/10.1007/s12630-013-0084-7
31. Jones, H. E., Johnson, R. E., & Milio, L. (2006). Post-cesarean pain management of patients maintained on methadone or buprenorphine. *American Journal on Addictions, 15*(3), 258-259. doi:https://dx.doi.org/10.1080/10550490600626721
32. Meyer, M., Paranya, G., Keefer Norris, A., & Howard, D. (2010). Intrapartum and postpartum analgesia for women maintained on buprenorphine during pregnancy. *European Journal of Pain, 14*(9), 939-943. doi:https://dx.doi.org/10.1016/j.ejpain.2010.03.002
33. Dahan, A., Yassen, A., Romberg, R., Sarton, E., Teppema, L., Olofsen, E., & Danhof, M. (2006). Buprenorphine induces ceiling in respiratory depression but not in analgesia. British Journal of Anaesthesia, 96(5), 627-632. doi:10.1093/bja/ael051
34. Khanna, I. K., & Pillarisetti, S. (2015). Buprenorphine - an attractive opioid with underutilized potential in treatment of chronic pain. J Pain Res, 8, 859-870. doi:10.2147/jpr.s85951

Guideline Preparation
This guideline was prepared by the Office of Clinical Integration (CI) and Evidence-Based Practice (EBP) in collaboration with content experts at Oregon Health and Science University.

Content Expert Team
Julio Gonzalez-Sotomayor, MD, Associate Professor of Anesthesiology and Perioperative Medicine
Honora Englander, MD, Associate Professor of Medicine
Jessica Gregg, MD, PhD, Associate Professor of Medicine
Katie Schenning, MD, MPH, Assistant Professor of Anesthesiology and Perioperative Medicine
Renita Patel, PharmD, Clinical Supervisor
Dalia Ivekich, NP, Nurse Practitioner
Clinical Integration and EBP Team
Elizabeth Crabtree, PhD, MPH, Director of Clinical Integration and EBP
Marcy Hager, MA, EBP Program Manager
Andrew Hamilton, MS/MLS, Liaison Librarian

Development Process
This guideline was developed using the process outlined in the CI and EBP Manual (2016). The review summary documents the following steps:

1. Review Preparation
   - PICO questions established
   - Evidence search confirmed with content experts
2. Review of Existing Internal and External Guidelines
   - Literature Review of Relevant Evidence
3. Critically Analyze the Evidence
4. Summarize the Evidence by preparing the guideline, and order sets
   - Materials used in the development of the guidelines, review summaries and content expert team meeting minutes are maintained in a Continuing Buprenorphine or Naltrexone-Containing Drugs in Peri-Operative Patients EB review manual with the Office of CI and EBP.

Evaluating the Quality of the Evidence
Published clinical guidelines were evaluated for this review using the **University of Pennsylvania's Trustworthy Guideline Rating Scale**. The summary of these guidelines are included in the evidence summary. The rating scale is based on the Institute of Medicine's "Standards for Developing Trustworthy Clinical Practice Guidelines" (IOM), as well as a review of the AGREE Enterprise and Guidelines International Network domains. This scale evaluates a guideline's transparency, conflict of interest, development group, systematic review, supporting evidence, recommendations, external review and currency and updates. The purpose of this scale is to focus on the weaknesses of a guideline that may reduce the trust a clinical user can have in the guideline, and distinguish weaknesses in documentation (e.g. guideline does not have a documented updating process) from weaknesses in the guidance itself (e.g. recommendations are outdated).

The GRADE (Grading of Recommendations, Assessment, Development and Evaluation) criteria were utilized to evaluate the body of evidence used to make clinical recommendations. The table below defines how the quality of the evidence is rated and how a strong versus conditional recommendation is established. The evidence summary reflects the critical points of evidence.

Recommendation	
STRONG	Desirable effects clearly outweigh undesirable effects or vice versa
CONDITIONAL	Desirable effects closely balanced with undesirable effects
Quality	**Type of Evidence**
High	Consistent evidence from well-performed RCTs or exceptionally strong evidence from unbiased observational studies
Moderate	Evidence from RCTs with important limitations (e.g., inconsistent results, methodological flaws, indirect evidence, or imprecise results) or unusually strong evidence from unbiased observational studies
Low	Evidence for at least 1 critical outcome from observational studies, from RCTs with serious flaws or indirect evidence
Very Low	Evidence for at least 1 critical outcome from unsystematic clinical observations or very indirect evidence

Recommendations
Recommendations for the guidelines were directed by the existing evidence, content experts, and consensus. Patient and family preference were included when possible. When evidence is lacking, options in care are provided in the guideline and the order sets that accompany the guideline.

Approval Process
Guidelines are reviewed and approved by the Content Expert Team, Office of CI and EBP, Knowledge Management and Therapeutics Committee, Professional Board, and other appropriate hospital committees as deemed appropriate for the guideline's intended use. Guidelines are reviewed and updated as necessary every 2 to 3 years within the Office of CI and EBP at OHSU. Content Expert Teams will be involved with every review and update.

Conflict of Interest
None of the content expert team members has any affiliations or financial involvement that conflicts with the material presented in this guideline.

Disclaimer
Guideline recommendations are made from the best evidence, clinical expertise and consensus, in addition to thoughtful consideration for the patients and families cared for within the Integrated Delivery System. When evidence was lacking or inconclusive, content experts made recommendations based on consensus. Expert consensus is implied when a reference is not otherwise indicated.

The guideline is not intended to impose standards of care preventing selective variation in practice that is necessary to meet the unique needs of individual patients. The physician must consider each patient and family's circumstance to make the ultimate judgment regarding best care.

Appendix 6

TEMPLATE: IMPACT ASAM SUD Assessment

Referred by:
Reason for consult:
Patient information:
Patient identified goal:

Use History: (Onset of substance use, Substance of choice, Severity of use disorder for substances used in the last 12 months)

Substance use treatment history: (periods of abstinence, MAT)

DSM-5 SUD diagnoses (usually from MD/ NP/ PA note)

Social Work Clinical Formulation: Using American Society of Addiction Medicine (ASAM), the following risks, barriers and protective factors were identified within these six dimensions:

Dimension 1: Acute Intoxication and/or Withdrawal Potential
(Experiencing withdrawal or at risk for withdrawal? Require detox services? Consideration for MAT? Strengths/protective factors; Barriers/risks)

Dimension 2: Biomedical Conditions and Complications
(Does patient have a Primary Care Physician; Chronic/acute medical conditions outside hospitalization; Insight into correlation between substance use and medical health; Strengths/protective factors
Barriers/risks)

Dimension 3: Emotional, Behavioral or Cognitive Conditions and Complications
(Previous diagnosis; previous treatment; mental health concerns; Insight into correlation between substance use and mental health; Trauma history; Strengths/protective factors; Barriers/risks)

Dimension 4: Readiness to Change
(Insight; Judgment; Internal/external motivators; Stage of change assessment; Strengths/protective factors; Barriers/risks)

Dimension 5: Relapse, Continued Use or Continued Problem Potential
(Previous factors supporting recovery; previous relapse experiences; triggers for use; factors supporting abstinence; Strengths/protective factors; Barriers/risks)

Dimension 6: Recovery Environment
(Living environment; financial resources/insurance coverage; Employment; Vocational and/or military history; support systems; stress systems; DCJ/probation)

Level of Care recommendations:

- Provider recommendation
- Patient preference (if discrepancy provide reasoning)

Plan: Might include

- Collaboration with other disciplines
- Patient Safety Care Plan
- Relapse prevention plan
- Approach to harm reduction

EXAMPLE: IMPACT Social Work SUD Assessment*

Referred by: Dr X, hospitalist
Reason for consult: opioid use
Patient information: Admitted to OHSU for septic joint infection and MSSA bacteremia.

IMPACT SW met with patient alongside IMPACT MD and medical student to discuss patient goals, substance use history, and develop treatment plans as related to substance use.

Patient identified goal: "I'm done with this [opioid use]"

Use History:
She endorses use of methamphetamine, benzodiazepine, opioids, and nicotine. She identifies heroin as her drug of choice. Heroin allows her to "forget and feel good." She first started heroin 2.5 years ago when she "was in a dark place." Started using IV, currently uses approximately 1g/day.

She reports regular illicit Xanax use. Anxiety and trauma trigger for benzodiazepine use.
She denies and recent methamphetamine use and reports to not like the substance.
She reports 0.5 pack/day cigarette use. Currently has access to nicotine patch, however continues to experience cravings. Poor efficacy with nicotine gum. Willing to consider lozenges.

D reports starting using drugs at age 13 with methamphetamine. She acknowledges a family history of substance use disorders including alcohol (parent), methamphetamine (sibling).

Substance use treatment history:
D reports outpatient substance use treatment and participation in 12-step groups, previously. She reports finding these settings as more triggering, noting listening to people's stories as frustrating.

She reports brief attempt to access illicit buprenorphine without benefit or disruption in her heroin use. Also reports trying Kratom to disrupt use patterns without effect.

She is interested in buprenorphine after discussion of MAT options with IMPACT MD, acknowledges understanding risk for precipitated withdrawal and the need to initiate bup while in withdrawal and denies any past experience of precipitated withdrawal.

She reports a 5-year history of abstinence, attributes her marriage and playing an active role in her niece/nephews lives as motivating factors during this time.

DSM-5 SUD diagnoses:
See IMPACT MD note outlining DSM criteria for Opioid Use Disorder, Severe.

Clinical Formulation:
Using American Society of Addiction Medicine (ASAM), the following risks, barriers and protective factors were identified within these six dimensions:

Dimension 1: Acute Intoxication and/or Withdrawal Potential
Patient endorses a history of opioid withdrawal which she identifies as a risk factor for continued and increased use. She was started on methadone during this hospitalization to manage withdrawal symptoms.
Conversations with patient re: continued MAT include:

- Patient goal to continue MAT
- Lives hours from nearest methadone clinic, making suboxone more viable option
- Patient interested in starting Suboxone for MAT. Will work with IMPACT MD re: recommendations for Suboxone induction. IMPACT SW to support continuation of MAT provider.

Dimension 2: Biomedical Conditions and Complications-
Patient acknowledges having met with a primary care provider (PCP) in an urgent care clinic near home once, however does not have regular PCP. Patient endorses chronic physical pain.
She has insight into the correlation between current hospitalization and substance use.

Dimension 3: Emotional, Behavioral or Cognitive Conditions and Complications
Patient acknowledges complex trauma history beginning in childhood. She endorses anxiety, nightmares, and flashbacks. She reports "being in therapy a lot" since childhood including medications and talk therapy. She identifies little benefits from the talk therapy or medications.
She described taking a number of medications that include Prozac (prescribed as an adolescent – "made me feel like a zombie"), Abilify ("I was chasing my partner with a fork") and Lexapro as ineffective medications.

She is willing to discuss and explore medications and resources that would support addressing emotional and mental health needs. She reflected upon the death of family last year and guilt/shame related to her continued opioid use as she promised she "wouldn't die a junkie".

She presents with insight into the correlation between mental health and substance use.

Dimension 4: Readiness to Change
D is in a preparation stage of change. She presents with insight into triggers to use and motivations for recovery.

Dimension 5: Relapse, Continued Use or Continued Problem Potential
D has identified physical pain, emotional/mental health, and family history of substance use.

Dimension 6: Recovery Environment
D lives in rural Oregon. She reports having Oregon Medicaid however confirmation of this coverage is still pending. She has the support and resources of family and her partner. She reports that her partner has discontinued his use, however is guarded about discussing this further at this time.

Level of Care recommendations:
D has no prior attempts at MAT to support efforts to disrupt opioid use. She would like to do suboxone induction now (see IMPACT MD note) and IMPACT recommends office based outpatient setting (OBOT) given that she lives in a rural area and and access to opioid treatment programs is a significant barrier. She is recommended to engage in outpatient co-occurring treatment in conjunction with MAT to support these recovery efforts.

Plan: (includes collaboration with other disciplines)

- See IMPACT MD recommendations re: MAT/ suboxone
- IMPACT SW will continue to follow over the course of hospitalization. Will offer brief treatment interventions, supports and coordination of connection with treatment resources to include but not limited to OBOT and outpatient treatment provider.
- During hospitalization, patient would likely benefit from peer recovery support. IMPACT SW will coordinate with IMPACT peer re: referral.
- IMPACT SW will follow up with financial Medicaid services re: patient OR Medicaid status

*details of this case have been modified to protect patient privacy.

Appendix 7

TEMPLATE: Social Work PICC Community Safety Assessment

The following assessment is intended to provide SW recommendations for safe discharge for patients who receive a PICC. The placement of the PICC line is a medical decision, to be determined by MDs and informed by previous risk factors.

Reason for referral:

Risk Factors:

- Overall level of risk identified as: High/Medium/Low
- Illicit drug use in the past 6 months: YES/NO
  - *Specify: Substances used, most recent use, frequency, method, severity, prior injection into PICC*
- Heavy alcohol use in the past six months: YES/NO
- Homeless or unsafe living environment: YES/NO
  - Specify: Homeless, couch surfing, lack of electricity, refrigeration, running water
- Cognitive impairment: YES/NO
  - Specify: limitations to cognitive capacity, memory, etc,
- History of not following medical recommendations: {YES/NO}
  - *Specify: History of leaving AMA or eloping, poor engagement with hospital or community providers*
- Other
  - *Specify: Co-occurring mental health conditions, limited engagement with SW/MD's etc, underinsured, limited social or community supports, transportation barriers*

Protective Factors:

- Overall protective factors identified as: High/Medium/Low
- Good engagement around substance use and sobriety: YES/NO
  - *Specify: SUD in early or sustained remission, pt motivated to pursue treatment, no recent drug use by injection, expressed understanding of PICC safety risks*
- Stable living situation: YES/NO
  - *Specify: Stable housing, able to meet basic needs at home, support in the home*
- Strong support network: YES/NO
  - *Specify: Sober support circles, family support, connection to community agencies*
- Other:
  - specify:

Patient Preferences and Stated Goals:

SW Assessment and Plan:

- Patient background and descriptors
- Additional relevant information
- Specific information regarding pt's discharge or treatment recommendations, such as the logistics of discharge to the community with home infusions vs infusion center follow up

Level of Care Recommendation for PICC Safety upon Discharge:

EXAMPLE: Social Work PICC Community Safety Assessment*

The following assessment is intended to provide SW recommendations for safe discharge for patients who receive a PICC. The placement of the PICC line is a medical decision, to be determined by MDs and informed by previous risk factors.

Reason for referral: injection drug use

Overall level of risk for home infusion at present is felt to be: High

Risk Factors:

- Illicit drug use in the past 6 months: YES
  - Prior to hospitalization active IV heroin use, daily 1-2 g/day
  - No previous PICC placement
- Heavy alcohol use in the past six months: NO; denies, though endorses illicit benzos
- Homeless or unsafe living environment: YES
  - Patient lives with her partner and his parents. While housing is stable with running water, electricity, and refrigeration she notes feeling that this is a high risk environment to return to given presence of others with active drug use and that use in this setting is "habit"
- Cognitive impairment: NO
- History of not following medical recommendations: NO; denies history of leaving AMA
- Other
  - Patient acknowledges the co-occurring nature of her mental health (depression, trauma, and anxiety) with substance use
  - Patient experience of pain due to biomedical factors is another trigger for continued use

Protective Factors:
Overall protective factors identified as: Medium

- Good engagement around substance use and sobriety: YES
  - Patient receptive to engagement with IMPACT and has worked to start Suboxone during hospitalization
  - Patient was not established with a provider prior to hospitalization, however is open to engaging in co-occurring treatment post-hospital for continuation of care and support
- Stable living situation: NO
  - Stable housing in an environment that patient identifies as high risk and "don't trust myself that I won't use right away"
- Strong support network: MODERATE
  - Patient reports father is supportive. Patient reports her partner to be supportive however his own relationship with active use is largely unknown.
  - Patient is open to engaging with community treatment programs and resources, however is not enrolled at time of assessment.

Patient Preferences and Stated Goals: Patient feels unsafe to discharge home. She fears that she will use through a PICC line if in a triggering home environment. She is concerned about decreased mobility due to infection and is concerned that she may require additional nursing support for daily care needs (i.e. toileting, bathing)

SW Assessment and Plan:

- *Patient background and descriptors*
- *Additional relevant information*
- *Specific information regarding pt's discharge or treatment recommendations, such as the logistics of discharge to the community with home infusions vs infusion center follow up*

Pt admitted to OHSU with MSSA bacteremia c/b septic arthritis of knee and ankle. Per ID note, "She will need 4 weeks of IV abx therapy for complicated MSSA bacteremia."

During this hospitalization, IMPACT was consulted and patient has been receptive to engagement, identifying this hospitalization as an opportunity to disrupt and discontinue her opioid use.

Given her recent IVDU patterns and having only established recovery in the hospital settings, it is not recommended that she return to her previous home environment which she additionally identifies as a trigger and is uncertain of her ability to not resume use in that setting.

Her engagement with IMPACT providers, motivation for recovery, and plans to establish with aftercare treatment resources are protective factors that indicate discharge to SNF would be appropriate.

Level of Care Recommendation for PICC Safety upon Discharge: Skilled Nursing Facility

*details of this case have been modified to protect patient privacy.

Appendix 8

Outpatient parenteral antibiotic therapy

Process for discharge planning OPAT patients with substance use disorder

IMPACT/OPAT Collaboration

1. Infectious Disease (ID) team identifies patient who requires long term IV antibiotics and has a history of substance use (active or past with ongoing concerns re risk).

2. IMPACT consults and helps identify current substance use modality/frequency, potential safe places for discharge (if IMPACT not already involved, ID recommends that primary team place a consult)

3. ID notifies OPAT RN of need for care conference. OPAT RN reaches out to Care Manager (CM) who coordinates. Alternatively, any member of the patient's treatment team can request a care conference by asking Care Manager to coordinate.

4. CM schedules care conference with: IMPACT social worker and /or MD/NP, IMPACT Peer, ID attending +/- fellow, OPAT RN, primary team, CM, +/- OPAT Pharmacist, floor nurse. CM sends initial page to all team members for best date/time. Once date/time finalized, CM sends outlook appointment.

5. Care conference held using care conference tool with OPAT RN meeting leader. CM helps determine discharge options/coverage for discharge – SNF, home, infusion center, hospital.

6. Options presented to the patient by team members identified in the care conference

7. OPAT RN documents care conference discussion using template below (OPAT RN does not document medical recommendations). ID attending addends and signs note including medical decision and/or options

Meeting Guide and Note Template - OPAT Care Conference Summary:

Team members involved:

Primary team:

IMPACT team:

Case Manager:

ID/OPAT Team:

Introduction to Care Conference (OPAT RN – meeting leader – reads after introductions): "Thank you for taking time to attend this care conference. This is a structured multidisciplinary care conference with a goal to review all aspects of OPAT and discuss the best and safest options for this patient to receive treatment for their infection. I will ask each discipline present to weigh in on specific questions/concerns. It is vital that patients are included in the decision making process for discharge planning. As we proceed, I ask that everyone approach this discussion with the following ethical principles in mind:

- **How much is paternalism playing a role in this decision making process?**
- **What is beneficent in this patient's situation?**
- **What is non-maleficent in this patient's situation?**
- **What autonomy does this pt have in the current situation?"**

ID synopsis/recs with duration, abx, dosing	
Illicit drug use history: frequency, last use, delivery method	
What is the **issue?** Reason for care conference/ problem identified?	
Patient's goal/perspective	
PICC safety assessment recommendations	
Is patient **medically stable** for discharge? Does patient have skilled needs?	
Insurance options per CM	
PT/OT/ADL needs	
Does the patient have a working, personal cell **phone**? How do we know it is working?	

Updated **emergency contacts** and addresses	
Is **home environment safe?** (running water, refrigeration, heat in winter, non-abusive/safe environment).	
Transportation AND **funds** for transportation AND **willingness** to travel. (Applies to all potential dc settings)	
Previous OPAT course history (if applicable)	
Receiving treatment for **mental health** condition post dc if applicable? Medications (expense?), counseling, etc.	
Receiving **addiction treatment** post dc? Medications (expense?), counseling, peer support, etc.	
Does pt have a **PCP**? Appt made?	
Transparency from all teams regarding the **seriousness of the infection and disease progression** if infection is not treated/not treated optimally. Transparency about potential health risks with PICC line and especially with misused PICC line (injecting into PICC line, injecting into other veins while having PICC line in, getting dressing wet, lack of dressing change q7 days or prn, line pulled out/line pushed in, DVT, rash/irritation)	
Options discussed for treating infection from ID standpoint: 1. Most ideal option: 2. Sub-optimal option: 3. Alternate sub-optimal option Likelihood of success with each option? If suboptimal option is being recommended, why?	

Per Infectious Diseases Society of America:

"The primary goal of an OPAT program is to allow patients to complete treatment safely and effectively in the comfort of their home or another outpatient site. Secondary goals include reducing inconvenience, avoiding potential exposure to nosocomial pathogens, and decreasing the expense of hospitalization to complete a prescribed intravenous (IV) antibiotic course."
http://www.idsociety.org/uploadedFiles/IDSA/News_and_Publications/OPAT_eHandbook/Chapter_01.pdf

Definitions:

Paternalism: A philosophy that certain health decisions are best left in the hands of those providing healthcare.

Beneficence: is action that is done for the benefit of others. Beneficent actions can be taken to help prevent or remove harms or to simply improve the situation of others.

Non-maleficence: to "do no harm." A principle of bioethics that asserts an obligation not to inflict harm intentionally.

Autonomy: the right of competent adults to make informed decisions about their own medical care.

Appendix 9

Patient Safety Care Plan

The following is adapted from the OHSU 14C/ 5A/5C nurses' patient safety care plan. The general framework is shared across IMPACT, medical teams, and clinical staff, however there is not universal agreement on all aspects or language, and the document continues to evolve. Extra thanks to Brittney Caldera, Susannah Lujan-Bear, Stephanie Milstein, Clint Oliver, Eva Cicilian, Kristen Thorsvik, Kartar Khalsa, and Whittney Wike.

Patient Safety Care Plan

OHSU maintains a safe environment for all patients, staff, and visitors. Your medical team wants to partner with you to keep everyone healthy and safe. Here's what you can do:

- **Tell us your needs: especially around cravings, triggers, anxiety and/or pain.**
  - Your nurse will check in with you approximately every 2 hours and may not be able to come immediately if you call as they have other patients.
  - Keeping a list may help so when your nurse or doctors arrive you can get your needs addressed (Doctors come once a day).
- **We request you do not inject, smoke, or consume any illicit drugs or alcohol**
  - Using in the hospital can interfere with medical treatment and put you and others at risk for injury.
  - If you have a change in behavior or are off unit for an extended time, a urine drug screen (UDS) may be requested.
- **Procedure for walking off the unit if approved: We want you here for your treatments.**
  - Time off the unit is limited to between 8am – 9pm
  - Let your nurse know you are leaving the unit.
  - IV pumps need to be unhooked by nursing staff before leaving.
  - Use the **sign in/sign out book**: The Orange Binder at nurses' station.
- **Visitor information**
  - Visitors can provide support or they can be disruptive to your health or care. Let us know if you would like to restrict visitors for any reason.
  - Visitors need to check in at nurses' station before entering your room.
  - OHSU reserves the right to monitor visitors, search visitors and their belongings, or prohibit visitors who are interfering with care or are under the influence.
  - Due to infection issues and patient privacy, never enter another patient's room

OHSU values the dignity of our patients and our staff.

Everyone at OHSU needs to be treated with respect.

- **Yelling and foul language is disrespectful.**
  - We will leave and shut the door in consideration of others on unit.
- **Threats or throwing things is unsafe.**
  - We will call public safety to maintain our safety and the safety of our other patients.
  - Unsafe behavior may result in discharge from the hospital prior to completion of treatment.

Thank you for agreeing to partner with us in your care!

Appendix 10

TEMPLATE: Relapse Prevention Plan

Social workers develop a relapse prevention plan with patients at the bedside. The goal is to further develop and strengthen understanding of triggers for use; identify the thoughts, feelings, and behaviors associated with those triggers; identify possible interventions to address those trigger (for example, deep breathing, medications such as prazosin for PTSD); and identify additional sources of support. Typically, IMPACT social workers develop relapse prevention plans for hospital care and for transition into the community.

IMPACT Social workers may write out a relapse prevention plan with patients, but do not typically include relapse prevention plans as part of the medical record.

Example:

Triggers (people, places, and things which might make me think of using):

-
-

Thoughts, feelings, and behaviors (which contribute to urges or cravings to use):

-
-

Healthy coping skills (activities and behaviors to get my mind off using):

-
-

People I can reach out to for support (family, friends, fellowship, etc):

-
-

My continued plan of care:

-
-

EXAMPLE: Relapse prevention plan

Triggers (people, places, and things which might make me think of using):

- 'people using in front of me'

Thoughts, feelings, and behaviors (which contribute to urges or cravings to use):

- 'experiencing or fear of experiencing pain'
- Shame related to use
- Grief from loss of loved ones

Healthy coping skills (activities and behaviors to get my mind off using):

- Breathing and mindfulness (body scans, belly breathing, 5 senses)
- Coloring
- Acupuncture if available

People I can reach out to for support (family, friends, fellowship, etc):

- Partner
- Partner's parents
- IMPACT team

My continued plan of care:

- Follow through with engagement with suboxone provider/treatment groups
- Reach out to IMPACT
- Discharge to partner's parent's home where there are no active substance users

Appendix 11

Approach to harm reduction

If Injection Use, encourage safe injection practices and assure information about local needle exchange

Questions to prompt discussion around harm reduction and safe injection*:

- What is your water source? Do you cut your heroin with sterile water?
- Do you re-use needles?
- Do you lick your needles?
- Do you discard your cotton after every use?
- Do you inject with other people around?
- Do you do a tester shot to make sure a new batch isn't too strong? Do you know where to test your drugs for fentanyl?

HIV Pre-Exposure Prophylaxis: Did you consider HIV PrEP?

Naloxone: All patients with opioid use disorder or with any SUD and/ or >50 morphine equivalents/ day of prescription opioids should receive naloxone (ordered prior to discharge and provided at discharge or if patients' sign out against medical advice)

Factors that increase risk for overdose include:

- Prior overdose
- Use of illicit opioids
- High daily dose prescription opioid (>50MME)
- Concurrent use of sedatives/ benzodiazepines
- Recent period of abstinence
- Uses alone

*IMPACT often has peers lead this discussion in conjunction with medical provider to increase patient engagement and help train medical providers

Appendix 12

OREGON HEALTH & SCIENCE UNIVERSITY
School of Medicine
Department of Medicine
Division of Hospital Medicine
Mail code: BTE119
3181 S.W. Sam Jackson Park Rd.
Portland, Oregon 97239-2997
Phone: 503-494-1164
Fax: 503-494-1159

Honora L. Englander, MD, FACP
Associate Professor of Medicine
Director, Improving Addiction Care Team (IMPACT)

August 9, 2017

To:
Parole & Probation Officer
Department of Community Justice
Portland, OR 97204

Re: [Name of patient]

Dear [Name of PO]:

This letter is a request to drop warrants for Mr. John Doe. Mr. Doe has been under my care at OHSU where he has been treated for medical complications of his substance use disorder since August 1, 2017. Prior to OHSU he was hospitalized at an area hospital from July 15-26, 2017.

Mr. Doe suffers severe opioid use disorder, a chronic brain disease that leads to brain changes turn drug use into an automatic, compulsive behavior (addiction). With behavioral and medication-assisted treatment, we can treat his addiction. Mr. Doe is highly motivated for change, recognizes the harms and risks of drug use, and has fully engaged in treatment at OHSU with our Improving Addiction Care Team (IMPACT). He is on a path to recovery; however, his warrant and the need to serve jail time would interrupt that recovery path.

Mr. Doe currently has a spinal infection related to his drug use. Treating his underlying addiction is a critical part of treating this spinal infection and preventing the grave possible complications which include losing the ability to walk, loss of control his bowel or bladder, and death.

By dropping his warrant you allow him to effectively connect to addiction treatment in the community, avoid forced withdrawal from methadone in jail, and get the care necessary to prevent further complications from his infection.

Through the IMPACT team which I direct, we have the ability to directly support his linkage to care for addiction treatment after his discharge. He, ideally, would discharge to a skilled nursing facility for the remainder of his intravenous antibiotics, and then transition to addiction treatment at one of our partners, CODA, Inc.

Please let me know if you have additional questions.

Sincerely,

Honora Englander, MD, FACP

Associate Professor of Medicine
Director, Improving Addiction Care Team (IMPACT)
OHSU Medical Director for Community & Clinical Integration
Division of Hospital Medicine
Oregon Health & Science University
Portland, Oregon
englanderh@ohsu.edu

Appendix 13

TEMPLATE: Medical provider note template

The following clinical information related to alcohol or drug abuse is CONFIDENTIAL and protected by Federal Law. ACCESS TO THIS INFORMATION IS ON A NEED-TO-KNOW BASIS ONLY AND IS PROVIDED FOR THE PURPOSE OF ASSURING APPROPRIATE MEDICAL CARE. Federal regulations (42 CFR, Part 2) prohibit the release of this information without specific written consent of the patient. A general authorization for the release of medical information is NOT sufficient for the purpose of releasing the following information.

INPATIENT INITIAL ADDICTION (IMPACT) CONSULT

Author:
Primary Team Attending:
PCP:
Hospital Day:

REASON FOR CONSULTATION: ***

HPI:

Addiction History:

Signs of substance use disorder in the last 12 months:
[DSM-5 flowsheet]

1	Use in larger amounts or for longer periods of time than intended
2	Unsuccessful efforts to cut down or quit
3	Excessive time spent using the drug
4	Intense desire/urge for drug (craving)
5	Failure to fulfill major obligations
6	Continued use despite social/interpersonal problems
7	Activities/hobbies reduced given use
8	Recurrent use in physically hazardous situations
9	Recurrent use despite physical or psychological problem caused by or worsened by use
10	Tolerance
11	Withdrawal

OTHER SUBSTANCE USE HISTORY:
Tobacco
Alcohol
Benzodiazepines
Cocaine
Methamphetamine
Gambling
Family History
Active SUD in household
History of SUD treatment
DUI
Hx of incarceration/probation?
If so, Probation Officer:
Prescription Drug Monitoring checked:

Mental Health history:

Trauma history:

ROS:
Withdrawal symptoms currently:
Concern for abscess or induration:
Concern for STI or s/s of STI:

PMH:

OUTPATIENT MEDS:

INPATIENT MEDS:

Other SOCIAL HX:

PHYSICAL EXAM:

DATA:
Last UDS
HIV
Hep C
RPR
LFTs

IMPRESSION:
[Patient name] is a [age] year old [man/ woman] with a history of *** who presents with ***

The patient meets *** out of 11 DSM-V criteria, consistent with *** *** Use Disorder.
The patient meets *** out of 11 DSM-V criteria, consistent with *** *** Use Disorder.

Level of motivation is assessed to be:

Social Issues Addressed/Barriers to Care:

RECOMMENDATIONS:

-Obtain urine drug test if not already obtained

-Recommend checking random urine drug test at least once weekly during hospitalization to support safe medication prescribing

-Change all opioids to liquid formulation to prevent diversion

-Avoid benzodiazepines and IV formulations of medications with strong reward value (opioids, phenergan, benadryl, etc)

-Obtain ECG at baseline and then every week thereafter

-Check RPR, HIV, Hep C tests

- Please place a TB skin test (PPD) and a nursing order to read in 48-72 hours. If patient is going to discharge before 48 hours please have nurses provide documentation of when PPD was placed and when it should be read.

-Naloxone kit at discharge (and if patient leaves AMA)

-If not yet done, please place EPIC consult for addiction medicine

For questions related to this patient's addiction care, please page the IMPACT/Addiction Medicine pager at 17273 which is available M-F 8-5pm only. Weekend coverage is not available.

I spent ** minutes in the care of this patient. Greater than 50% of the time was spent counseling and coordination of care, including record review, coordination of care with primary team and family, and counseling to the patient about substance use disorder and its treatment.

Thank you for this interesting consult and the opportunity to partner with you on this patient's care.

@SIGNATURE@
Pager

Appendix 14

EXAMPLE: Medication PARQs (Procedures, Alternatives, Risks and Questions)**:**

Buprenorphine-naloxone Induction PARQ – Pt meets DSM-5 criteria for severe opioid use disorder. Patient appears to be a good candidate for outpatient treatment with pharmacotherapy with buprenorphine-naloxone. They appear highly motivated to quit and requests buprenorphine treatment. We discussed alternative treatments, including methadone maintenance and naltrexone, but they would prefer to initiate buprenorphine-naloxone at this time. I counseled them regarding the specific risks and benefits of buprenorphine-naloxone use. We briefly reviewed again what is expected of patients in buprenorphine treatment programs including urine drug testing, frequent medical visits, and outpatient counseling.

We reviewed a regimen for buprenorphine-naloxone induction. We reviewed the side effects of buprenorphine-naloxone including precipitated opioid withdrawal if taken too soon, physical dependence, sedation, overdose risk, constipation, urinary retention, and neonatal abstinence syndrome (if applicable). I informed the patient that benzodiazepines and alcohol are contraindicated with this buprenorphine-naloxone. I reviewed the mechanism of action of buprenorphine, its long half-life (24-36 hours), and how it is administered. I reviewed that it is only active sublingually and it must be fully dissolved before it is active (this can take up to 10-15 minutes). I advised the patient not to inject or snort the medication or it will activate the naloxone component of the medication and block the opioid affects. I reviewed our buprenorphine-naloxone induction schedule.

I answered any questions. The patient expressed understanding and agreement with the above.

Naltrexone ER PARQ – I discussed the possible role of ER naltrexone with patient today. We discussed that ER naltrexone is administered as an intramuscular injection given every 28 days. We discussed the expected benefits and side effects. We discussed that people are at a lower risk of overdose while the naltrexone is effective; however they are at a higher overdose risk when the medication wears off at or beyond 28-30 days. We discussed the most common side effects are nausea and injection site reaction.

We discussed how opioids (including opioid pain medications) do not work while naltrexone is active. Thus, if patient were to have unanticipated acute pain needs, opioid-alternatives would have to be used.

We also discussed risk of precipitated withdrawal if naltrexone is administered with opioids in the body, and discussed the role for a naloxone challenge prior to administration of naltrexone.

Patient asked appropriate questions and was engaged in the conversation about medications.

Appendix 15

Fact Sheet: Buprenorphine-naloxone (Suboxone)

Indications:

Buprenorphine is a life-saving medicine. Strong evidence supports that it reduces death (overdose and all-cause mortality) by over two times.

Buprenorphine's effects include pain relief, decreased withdrawal symptoms, and decreased opioid cravings. It does not tend to produce a high, and it is much less likely than other opioids to produce respiratory depression.

At an effective dose, buprenorphine enables stabilization of neurobiologic brain processes and supports all the activities needed for recovery. When buprenorphine supports a person with an opioid use disorder to not use other opioids (except in specific cases of need with medical supervision), and go forward with recovery and responsible life activities, that person is in recovery, not active addiction.

Pharmacology:

Buprenorphine is a partial opioid agonist at the mu receptors. It is often combine with naloxone (buprenorphine-naloxone) to deter people from misusing it. The naloxone (aka narcan) is not active when given sublingually or swallowed. (It is added only to discourage people from crushing the drug and injecting. If injected, it would cause precipitated withdrawal.)

Avoiding Precipitated withdrawal when starting buprenorphine:

- Buprenorphine binds more tightly than other opioids at the mu opioid receptors. It will displace or block other opioids (such as heroin, oxycodone, morphine, hydromorphone, or methadone) at these receptors, but will exert only about 30%-40% of the mu-effect (pain relief or euphoria for example). It is, nevertheless, often remarkably effective for pain.

- Because of this ability to displace other opioids, it will precipitate withdrawal symptoms if given before "natural" withdrawal from other opioids occurs.

  This is why a patient starting buprenorphine must be in withdrawal already in order to get relief from symptoms of addiction, instead of temporarily making them feel worse. For this "natural' withdrawal to occur, patients will need to stop other opioids for around 6-24 hours before starting buprenorphine.

Assessing withdrawal before administering the first dose during induction:

- Clinical Opioid Withdrawal Scale (COWS), available in Epic under Document Flowsheet, is the measure of withdrawal level, and first dose buprenorphine is usually given when the score reaches 10 or 11. (If recent use of long-acting opioid such as methadone, higher COWS score may be needed to start, often minimum of 15)

- After the first dose, subsequent doses can be given at one-hour intervals for ongoing withdrawal symptoms or craving. The COWS score does not have to reach 10 after the first dose.

How to administer: Sublingual administration

- Buprenorphine must be given sublingually, and must fully dissolve into a slurry, to be effective. Instruct patient not to swallow the pill or the saliva under the tongue until the tab is dissolved. If the tab is swallowed it will not be absorbed adequately. The dose should be observed, and the patient should wait 15 minutes after it dissolves to eat or drink. (Dissolving SL tab may go better if patient is not asked to talk much while it is dissolving.)

Induction timeline:

- It may take several days for an effective dose to be achieved; while that happens, trust the patient's report of cravings, and give the medication up to the maximum ordered for that day.

- Suboxone is usually effective at somewhere between 8 and 24 mg per day (based on the buprenorphine dose). It does have a ceiling effect, and doses above 24 mg per day are rarely more effective, though occasionally a dose of up to 32 mg per day is helpful, especially in acutely painful conditions.

- Like other opioids, buprenorphine in combination with other CNS-depressants is much more risky than Buprenorphine alone. Patients should avoid alcohol and benzodiazepines while taking buprenorphine.

Managing buprenorphine in setting of acute pain/ surgery:

- It is no longer the usual practice at OHSU hospital to stop buprenorphine prior to surgical procedures, as was often done in the past. Buprenorphine itself has analgesic effects, and does not completely block the pain relieving effect of other opioids. Opioids such as hydromorphone, fentanyl, or even oxycodone will still give pain relief with a stable dose buprenorphine on board, but may need to be used in higher doses than in a patient who is not taking buprenorphine.

Reasons for NOT using Buprenorphine can include:

- Patient preference (such as preferring methadone, not wanting opioid medication for treatment, previous negative experience with some form of buprenorphine)

- Acute pain which makes stopping other opioids temporarily not an option

- In the community, providers must have a special DEA license (called an X waiver) to prescribe buprenorphine for addiction. Sometimes we do not start buprenorphine because we do not have any provider to continue it after discharge.

Kim Brandt, FNP-BC
IMPACT Nurse Practitioner