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Management of Opioid Use Disorder and Associated Conditions among Hospitalized Adults: A Consensus Statement From the Society of Hospital Medicine

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Abstract

Hospital-based clinicians frequently care for patients with opioid withdrawal or opioid use disorder (OUD) and are well positioned to identify and initiate treatment for these patients. With rising numbers of hospitalizations related to opioid use and opioid-related overdose, the Society of Hospital Medicine (SHM) convened a working group to develop a consensus statement on the management of OUD and associated conditions among hospitalized adults. The guidance statement is intended for clinicians practicing medicine in the inpatient setting (e.g., hospitalists, primary care physicians, family physicians, advanced practice nurses, and physician assistants) and is intended to apply to hospitalized adults at risk for, or diagnosed with, OUD. To develop the Consensus Statement, the working group conducted a systematic review of relevant guidelines and composed a draft statement based on extracted recommendations. Next,

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the working group obtained feedback of the draft statement from external experts in addiction medicine, SHM members, professional societies, harm reduction organizations and advocacy groups, and peer reviewers. The iterative development process resulted in a final Consensus Statement consisting of 18 recommendations covering the following topics: 1) identification and treatment of OUD and opioid withdrawal, 2) perioperative and acute pain management in patients with OUD, and 3) methods to optimize care transitions at hospital discharge for patients with OUD. Most recommendations in the Consensus Statement were derived from guidelines based on observational studies and expert consensus. Due to the lack of rigorous evidence supporting key aspects of OUD-related care, the working group identified important issues necessitating future research and exploration.

Keywords

opioid use disorder; hospitalization; buprenorphine; methadone; overdose

Background

Overdose deaths are rising at an unprecedented rate. In 2020, over 100,000 people died of an overdose.¹ Highly effective medications for opioid use disorder (OUD) have the potential to reduce overdose deaths by approximately thirty percent over a 12-month period,^{2,3} yet many people with OUD are unable to access this life-saving treatment.⁴⁻⁸

Hospitalizations related to opioid use are also rising.⁹ Patients with injection drug use may be hospitalized with skin and soft tissue infections,¹⁰ osteomyelitis,¹¹ and endocarditis,^{11,12} requiring weeks of intravenous antibiotic therapy. Among these patients, initiation of medications for OUD is associated with increased days of antibiotic therapy,¹¹ decreased risk of recurrent infection,¹⁰ and reduced overdose mortality.¹² Despite these optimistic outcomes, on average, less than 20 percent of patients in these studies received medications for OUD during their hospitalization.¹⁰⁻¹³ This significant treatment gap for hospitalized patients with OUD presents an opportunity for practice improvement among hospital-based clinicians. To our knowledge, there are no existing guidelines for improving and standardizing OUD care for hospitalized adults. Access to clinical recommendations to guide care for hospitalized patients with OUD may facilitate practice change to close the treatment gap.

The Society of Hospital Medicine (SHM) convened a working group to systematically review existing guidelines and develop a consensus statement to assist clinicians in the identification and treatment of OUD and opioid withdrawal, perioperative and acute pain management in patients with OUD, and care transitions at discharge for hospitalized adults with, or at risk of, OUD.

Consensus Statement Purpose and Scope

The purpose of this Consensus Statement is to present clinical recommendations for OUD treatment, opioid withdrawal management, opioid overdose prevention, and care transitions among hospitalized adults. We developed each of the clinical guidance statements through

a synthesis of the key recommendations from existing clinical practice guidelines on OUD management and adapted them for a hospitalist-specific scope of practice. They are intended for clinicians practicing medicine in the inpatient setting (e.g., hospitalists, primary care physicians, family physicians, advanced practice nurses, and physician assistants) and are intended to apply to hospitalized adults at risk for, or diagnosed with, OUD.

Consensus Statement Development

Our working group included experts in the treatment of OUD in the hospital setting, defined by 1) engagement in the clinical practice of hospital medicine, 2) engagement in the provision of hospital-based substance-related care via an addiction consultation service or a buprenorphine team,^{14–18} and 3) involvement in clinical research related to OUD treatment in the hospital setting (see Supplementary Materials, Appendix Table 1). SHM provided administrative assistance with the project, but it had no role in formulating the recommendations. The SHM Board of Directors provided approval of the Consensus Statement without modification.

An overview of the sequential steps in the Consensus Statement development process is described below; details of the methods and results can be found in the Supplementary Materials, eMethods.

Performing the Systematic Review

The methods and results of the systematic review of existing guidelines on the management of OUD, opioid withdrawal, opioid overdose prevention, and care transitions from which the Consensus Statement is derived are described in a companion article. We extracted recommendations from each guideline related to the topics in Table 1 and used these recommendations to inform the Consensus Statement.

Drafting the Consensus Statement

After performing the systematic review, the working group drafted and iteratively revised a set of recommendations using a variation of the Delphi Method¹⁹ to identify consensus among working group members.

External Review

Following agreement on a draft set of recommendations, we obtained feedback from external groups, including 1) members of the Society of Hospital Medicine Substance Use Disorder Special Interest Group, 2) members of the Society of Hospital Medicine outside of the Special Interest Group, 3) addiction-trained clinicians in the hospital or outpatient setting, 4) leaders at specialty societies including the American Academy of Addiction Psychiatry, American College of Academic Addiction Medicine, Society of General Internal Medicine, 5) leaders and advocates of people with lived experience at harm reduction agencies and advocacy groups including the National Harm Reduction Coalition and Faces and Voices of Recovery, and 6) peer-reviewers at the Journal of Hospital Medicine.

Results

The process described above resulted in 18 recommendations under five content areas (Table 2). These recommendations are intended only as guides and may not be applicable to all patients and clinical situations. Furthermore, these guidelines are not meant to supersede state or local policies pertaining to the treatment of OUD. Clinicians should use their judgement regarding whether and how to apply these recommendations to individual patients. Because the state of knowledge is constantly evolving, this Consensus Statement should be considered automatically withdrawn 5 years after publication, or once an update has been issued.

Non-Stigmatizing Medical Communication and Language for People Who Use Opioids

1. SHM recommends that hospitalists use non-stigmatizing and person-first language.

The majority of people with substance use disorder do not seek treatment and stigma is a barrier to seeking treatment among people who use drugs.^{20,21} Language intentionally and unintentionally propagates stigma which is harmful, distressing, and marginalizing to the people who bear it.^{22,23} Person-first language puts the word referring to the individual before the word describing their behavior or condition to highlight that the condition is not their defining characteristic (e.g., person with OUD).^{24,25} When referring to hospitalized patients with OUD, do not use stigmatizing language such as ‘addict’, ‘opioid abuse’, or ‘IV drug user’.^{26,27} Instead, use language such as ‘person who uses drugs,’ ‘person who injects drugs,’ or ‘person with OUD’ when documenting in the medical record and speaking with patients and healthcare providers.

Assessment of Unhealthy Opioid Use and Diagnosis of OUD

2. SHM recommends that hospitalized patients with unhealthy opioid use be assessed for OUD.

Hospitalization offers an opportunity to identify patients with OUD and provide life-saving treatment. Unhealthy opioid use includes the nonmedical use of prescription opioids, or the use of heroin, fentanyl, or other opioid analogues obtained through illegal drug markets. Patients with unhealthy opioid use may be hospitalized for conditions related to drug use, including opioid overdose, skin and soft tissue infections, osteomyelitis, and endocarditis. More subtle behaviors associated with unhealthy opioid use include the use of opioids in hazardous situations, an inability to cut down opioid use, cravings to use opioids, or opioid use leading to social, legal or financial problems, among others.²⁸ Validated tools to screen for unhealthy opioid use are available (e.g., Single-Question Screening test, NIDA Quick Screen, the WHO 8-item ASSIST, TAPS Tool, SUBS).^{29–31} Data from state prescription drug monitoring programs (PDMP) may be used to verify use of controlled medications.³²

3. SHM recommends that hospitalists use the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM–5) criteria to diagnose OUD.³³

The DSM contains descriptions, symptoms, and other criteria for diagnosing substance use disorder while providing a common language to describe such behaviors and diagnoses.

OUD is diagnosed when a person meets two or more of the 11 criteria outlined in the DSM–5 for OUD in a 12-month period. OUD severity is defined by the number of DSM–5 criteria met (mild 2–3; moderate 4–5; and severe 6 criteria).³⁴ Opioid tolerance and opioid withdrawal alone, in the absence of other DSM–5 criteria, are insufficient to diagnose OUD for patients who are prescribed opioids and take the opioids as prescribed. Much of this information can be obtained during a history and physical exam. Making an accurate diagnosis is important when considering treatment for OUD.

4. For patients who meet DSM–5 criteria for OUD, SHM recommends that hospitalists offer the following tests: HIV, hepatitis A, B, and C, syphilis, pregnancy test, and urine drug analysis.

Recent outbreaks of HIV, hepatitis, and syphilis associated with opioid use have been documented.^{35–38} Hospitalization offers an opportunity to diagnose new infectious diseases and link patients to effective and curative treatment.^{39–42} The Centers for Disease Control and Prevention (CDC) recommends at least annual HIV screening for people who inject drugs, although the optimal frequency for HIV testing is unknown for this patient population.⁴³ General informed consent that notifies patients that an HIV test will be performed unless the patient declines should be considered sufficient to encompass informed consent for HIV testing.⁴³ Among high risk adults including people who inject drugs or engage in transactional sex work, the CDC recommends routine periodic testing for hepatitis A, B, C, and syphilis, with administration of the hepatitis A and B vaccination for non-immune people.^{44–47} Pregnancy status should be confirmed as opioids may cause secondary amenorrhea⁴⁸ and medication dosing for OUD treatment may differ in pregnancy.^{49,50} Explicit informed consent is not required for clinical drug testing,⁵¹ however clinicians should explain the reason for the test and the intended use of the results prior to sample collection.^{52,53} Urine drug analysis may provide data not obtained during the history and physical exam to help inform medical management. Confirmatory testing, when available, should be performed when results are not consistent with information provided by the patient. Hospital policies should outline procedures for protecting the confidentiality of drug testing and results.^{52,53}

Medication treatment for DSM–5 Confirmed OUD Diagnosis

5. SHM recommends that hospitalists use shared decision making when discussing initiation of medications for OUD.

One important aspect of delivering patient-centered care is the active participation of patients in health care decisions.^{54,55} Buprenorphine, methadone, and intramuscular (IM) naltrexone are the three medications approved by the Food and Drug Administration (FDA) to treat OUD. High quality evidence demonstrates that routine use of buprenorphine and methadone reduce opioid-related mortality and all-cause mortality.^{3,56} The use of IM naltrexone is non-inferior to buprenorphine for select patients who complete a period of opioid abstinence and successfully initiate IM naltrexone.^{57,58} Regardless of the medication used to treat OUD, medication effectiveness is dependent upon patient preference and medication access, including the availability of local opioid treatment programs [required for methadone], office based opioid treatment programs or primary care practices that offer buprenorphine or IM naltrexone, and cost.⁵⁹ This information should be shared with patients

so they can make an informed decision about medication initiation for OUD. Consider partnering with a clinical pharmacist or developing staff expertise so that obtaining this information does not delay initiation of medication treatment.

6. SHM recommends that hospitalists offer buprenorphine or methadone as first line agents opioid agonist therapy to treat opioid withdrawal and OUD.

Opioid withdrawal symptoms are mitigated with the use of opioid agonists, including buprenorphine and methadone. The use of a validated opioid withdrawal assessment scale such as the Clinical Opiate Withdrawal Scale (COWS)⁶⁰ can be used to quantify opioid withdrawal symptoms and direct buprenorphine or methadone treatment initiation. Once a patient has entered mild withdrawal, buprenorphine can usually be safely initiated (i.e., without precipitating further withdrawal). A COWS score of 8 to 10 indicates mild withdrawal and usually occurs around 6 to 12 hours after last heroin or short acting opioid use.⁶¹ Methadone initiation should begin when the patient reports any opioid cravings or withdrawal symptoms. There are no legal or regulatory restrictions around inpatient ordering and titration of methadone or buprenorphine for opioid withdrawal management among patients hospitalized for medical or surgical reasons.^{62,63} The 42 Code of Federal Regulations (CFR), Title 21, Section 1306.07 “Administering or dispensing of narcotic drugs” describes federal regulations in detail.⁶² A buprenorphine X-Waiver is not required to administer buprenorphine in the hospital.

7. SHM recommends that when treating patients for opioid withdrawal and OUD, hospitalists initiate buprenorphine at 2 to 4 milligrams.

Evidence for buprenorphine dose titration is based on expert opinion and other guidelines which carry a lower strength of recommendation. One common approach for buprenorphine initiation includes dose increases by 2 to 4 milligrams every 2 hours until opioid withdrawal symptoms and cravings resolve, or a COWS score of 5, for a total dose of 12 to 16 milligrams on day 1. Dose titration should continue on day 2 to assess for ongoing cravings and withdrawal symptoms. Evidence supports increased treatment retention with buprenorphine doses of 16 to 24 milligrams per day.^{64,65} Various “low dose” and “high dose” buprenorphine protocols can assist with dosing algorithms for buprenorphine initiation and should be adjusted based upon the patient’s anticipated length of hospitalization, reported cravings, and their past experience initiating buprenorphine outside of the hospital setting.^{66–70} In areas where the drug supply is contaminated with fentanyl, when patients report regular fentanyl use, or when patients are transitioning from another long acting opioid to buprenorphine (e.g., methadone), consider the use of a low dose buprenorphine initiation protocol to avoid precipitated withdrawal.^{71–74} These recommendations should be applied with caution because buprenorphine initiation and dosing practices are rapidly evolving. Learning about patient’s past experiences with buprenorphine initiation is recommended to inform timing of buprenorphine initiation and dose titration.

8. SHM recommends that when treating patients for opioid withdrawal and OUD, hospitalists initiate methadone at 20 to 30 milligrams.

Opioid tolerance is difficult to establish by history and the amount of opioid use reported by the patient typically yields only a rough estimate of opioid tolerance.⁷⁵ A starting methadone

dose between 20 to 30 milligrams is supported by most guidelines. The dose should be increased by 5 to 10 milligrams every 2 to 3 hours to no more than 40 milligrams on day 1 for reported withdrawal symptoms. In some cases, (e.g., older age, liver disease, poor respiratory reserve, lower opioid tolerance) consider beginning with 10 milligrams of methadone.⁷⁵ During methadone initiation, patients should be instructed to judge their doses by how they feel during the peak blood concentration period, which is approximately 2 to 4 hours after their dose.⁷⁵ If patients request methadone after discharge they must be referred to a local opioid treatment program. Methadone for the treatment of OUD cannot be legally dispensed from an outpatient pharmacy.

9. If an electrocardiogram (EKG) has been performed, SHM recommends hospitalists review it to assess for QTc prolongation as part of a risk-benefit assessment when initiating methadone.

Whether to check an EKG in all patients starting on methadone is controversial.^{59,76,77} Most guidelines recommend checking an EKG when a patient has risk factors for QTc interval prolongation, including electrolyte abnormalities such as hypokalemia or hypomagnesemia, impaired liver function, structural heart disease, genetic predisposition such as congenital prolonged QT syndrome or familial history of prolonged QT syndrome, and use of drugs with QTc-prolonging properties.^{78–82} At higher doses, or in combination with other QTc prolonging medications,^{83,84} methadone has been associated with QTc prolongation leading to torsades de pointes.^{85–87} Because most hospitalized patients will have an EKG performed, reviewing the results to assess for QTc prolongation is recommended. If a patient has a QTc of ≥ 500 milliseconds, assess for reversible causes, (e.g., correcting electrolyte abnormalities or discontinuing other non-essential QTc prolonging medications). If the QTc remains ≥ 500 milliseconds, discuss the risks versus benefits of methadone with the patient and consider buprenorphine.

10. SHM recommends that in addition to buprenorphine or methadone, hospitalists prescribe non-opioid adjunctive medications for opioid withdrawal symptoms as appropriate (e.g., clonidine, loperamide, NSAIDs, acetaminophen, ondansetron, hydroxyzine).

These medications are effective complementary agents in the early stages of opioid withdrawal treatment, especially when initiating and therapeutically titrating medications for OUD. Clonidine and lofexidine, both α_2 -adrenergic agonists, reduce opioid withdrawal symptoms.⁸⁸ Commonly reported opioid withdrawal symptoms include anxiety, diarrhea, nausea, and muscle aches, which can be reduced using the aforementioned medications targeted to specific patient-reported symptoms.^{60,89–92}

11. SHM recommends that hospitalists offer intramuscular (IM) naltrexone if the patient prefers opioid antagonist treatment to methadone or buprenorphine.

A period of opioid abstinence is required prior to IM naltrexone initiation. If IM naltrexone is available to be administered in the hospital, initiate IM naltrexone ≥ 7 days from last short-acting opioid use and >10 days from last long-acting opioid use to avoid precipitated withdrawal. Obtain a urine drug analysis to assess for the absence of opioids in the urine prior to IM naltrexone administration. Consider a naloxone challenge before IM naltrexone

initiation, especially if giving sooner than these timeframes.⁹³ Counsel the patient on the risk of opioid overdose when naltrexone wears off. Do not use oral naltrexone for OUD due to its non-inferiority over placebo to prevent return to opioid use.⁹⁴

Acute Pain and Perioperative Pain Management in the Setting of OUD

12. SHM recommends that hospitalists assess and treat pain in the setting of OUD.

Patients with OUD may have high opioid tolerance and require higher doses of short acting opioids for acute pain, even when receiving medications for OUD. Multimodal analgesics are also recommended (e.g., neuropathic medications, anti-inflammatory medications, or local/regional anesthesia). Importantly, under- or untreated opioid withdrawal may exacerbate pain. It is essential to prescribe medications for OUD; however, medications for OUD are insufficient to treat acute pain. Patients receiving buprenorphine or methadone for OUD treatment do not derive sustained analgesia for pain control; the duration of analgesia for methadone and buprenorphine is approximately 4 to 8 hours,^{95,96} while their duration to suppress opioid withdrawal is approximately 24 to 48 hours.⁹⁷⁻⁹⁹ There is no evidence that exposure to opioid analgesia for acute pain control among patients on medications for OUD increases the risk of return to opioid use.^{98,100,101}

13. SHM recommends that hospitalists continue buprenorphine or methadone during hospitalization, including in the setting of acute pain and the perioperative period.¹⁰²⁻¹⁰⁸

Patients with OUD who are prescribed buprenorphine or methadone may present with acute pain or have scheduled elective surgeries. Elective surgeries in patients with OUD require careful planning and interdisciplinary involvement to coordinate care and OUD treatment management.¹⁰⁹ When a patient is admitted to the hospital, confirm the patient's current methadone or buprenorphine dose with the patient's opioid treatment program or through the PDMP, with last date of dosing, and continue this dose throughout the hospitalization unless there is an acute medical contraindication. Some experts recommend splitting the total daily buprenorphine dose into three times a day to optimize the analgesic activity of buprenorphine.^{98,106} Similar dose splitting can be done with methadone to maximize its analgesic effect. In both cases, dose splitting but should be discussed with the patient prior to making any changes. If methadone doses are split, they should be consolidated to once daily dosing prior to hospital discharge. Discontinuation of methadone or buprenorphine is not recommended during acute pain or in the perioperative setting and will result in an opioid debt which may worsen acute pain, making treatment more difficult, and may increase risk of return to opioid use and opioid overdose.

Care Transition at Hospital Discharge

14. SHM recommends that every hospitalist obtain an X-Waiver to prescribe buprenorphine at hospital discharge.¹¹⁰

Prescribing buprenorphine at discharge requires an X-DEA license which no longer requires 8+ hours of training. Submitting a Notice of Intent (NOI) application to the Substance Abuse and Mental Health Services Administration (SAMHSA) allows for issuance of an X-Waiver

license while exempting clinicians from completing the 8+ hour training.¹¹¹ Free training for buprenorphine is widely accessible.¹¹²

15. SHM recommends that when patients want to continue medications for OUD following discharge, every attempt is made to link patients to a buprenorphine prescriber or an opioid treatment program.

A hospitalist with a DEA X-Waiver should prescribe a buprenorphine bridge prescription until the scheduled follow-up appointment. At hospital discharge, methadone for OUD cannot be prescribed through a pharmacy and can only be dispensed through an opioid treatment program. Health systems should develop resource sheets with local buprenorphine prescribers and opioid treatment programs for treatment linkage. Many websites provide resources for addiction treatment services across the United States.^{113–115} Telehealth follow-up is an option for patients on buprenorphine.^{116–120} Hospital teams should identify treatment linkage; however, lack of follow-up should not preclude use of methadone or buprenorphine during hospitalization or provision of buprenorphine at discharge.¹²¹

16. SHM recommends that every attempt is made to link patients to psychosocial support, mental health treatment, mutual support groups, peer recovery supports, harm reduction services, and resources for access to housing and shelters, as appropriate.

Referrals to psychosocial treatment interventions and community-based supports, including peer support groups and harm reduction agencies, should be offered to patients, in addition to medications for OUD. Examples of psychosocial addiction treatment includes individual or group therapy, intensive outpatient treatment, residential treatment, structured counseling, and dedicated mental health treatment. Treatment resources are readily available.^{113,115,122} Peer-based support groups are free, widely available, and are a source of additional guidance and support for people with OUD.^{123,124} Harm reduction agencies and local recovery community organizations provide naloxone and sterile syringes, partner with people who use drugs to teach naloxone administration and wound care techniques, and advocate for policy reform to increase access to evidence-based harm reduction strategies.^{115,125–127} Provision of harm reduction education and supplies can happen during hospitalization,^{126,128–130} in the outpatient clinic setting,¹³¹ and in the community.^{127,132}

17. SHM recommends that, when post-acute, facility-based care is recommended, patients on medications for OUD are discharged to facilities that will continue these medications.

Continuation of medications for OUD at hospital discharge to post-acute care facilities is paramount for ongoing treatment of OUD. Care facilities such as skilled nursing facilities that prohibit continuation of medications for OUD are in violation of the Title III of the Americans with Disabilities Act.^{133,134}

18. SHM recommends that hospitalists prescribe naloxone at hospital discharge for all patients with OUD.

Patients with OUD are at very high risk of overdose-related mortality.¹³⁵ High quality evidence supports the use of naloxone to reverse opioid-related overdose and death.^{136–139} The legal risk with prescribing naloxone is no higher than that associated with any other

medication.^{140,141} Furthermore, laws in a majority of states provide civil immunity to prescribers, dispensers, and administrators of naloxone.^{141,142}

Discussion and Areas for Future Research

This Consensus Statement reflects a synthesis of the key recommendations from a systematic review of existing guidelines on OUD treatment, opioid withdrawal management, opioid overdose prevention, and care transitions, adapted for hospital-specific scope of practice. Many of the recommendations made in this Consensus Statement are based on lower quality of evidence, including observational studies and expert consensus. Despite this, several consistent topics emerged across the nineteen guidelines included in the accompanying systematic review which were relevant to the hospital setting. While the Consensus Statement focuses on care provision for OUD, many of the recommendations are applicable to people with other substance use disorders.

Several important issues were raised during the extensive external feedback process undertaken as part of the development of this Consensus Statement. Many of these issues were subsequently incorporated into the Consensus Statement, with consideration of the existing body of evidence identified in the systematic review. Still, several suggestions remained for which we felt the evidence base was insufficient to allow for clear or valid recommendations by the working group.

First, many reviewers expressed concern about initiating buprenorphine or methadone during hospitalization if there were no community clinicians or opioid treatment programs to continue the medication in the outpatient setting. Previous research consistently demonstrates that people with OUD have an increased risk of overdose death during life transitions, whether from prison to community,^{143,144} psychiatric hospitalizations to discharge,¹⁴⁵ or when moving in and out of OUD treatment.¹⁴⁶ Thus, it stands to reason that hospitalized patients are at the same risk of opioid overdose after being hospitalized for days to weeks without regular use of opioids. Provision of methadone or buprenorphine for prevention of opioid withdrawal during hospitalization will maintain opioid tolerance reducing the risk of an opioid-related overdose death following hospital discharge. Furthermore, one observational study demonstrated that people who received medications for OUD during hospitalization were equally likely to seek out ongoing buprenorphine treatment whether or not they were directly linked to a buprenorphine prescriber following discharge.¹²¹ In this Consensus Statement, we included references to websites where local buprenorphine prescribers, telemedicine buprenorphine prescribers, and opioid treatment programs can easily be identified for referral and direct linkage for ongoing addiction treatment post hospital discharge.^{113–115,122}

Next, several external reviewers expressed concern and discomfort about provision of methadone for prevention of withdrawal without support from an addiction-trained clinician. This discomfort is likely due to inexperience with the medication and concerns for opioid overdose due to methadone's unique pharmacology, including its long and variable half-life, potential interactions with many medications, and its association with QTc prolongation.⁸⁵ Despite these challenges, methadone has been the primary means of treating OUD for the

past thirty years. It is safe and effective when taken as prescribed and as directed by this Consensus Statement.¹⁴⁷ One issue raised by reviewers was a recommendation for inclusion of a ceiling dose for methadone when initiating treatment in the hospital among patients not actively enrolled in an opioid treatment program. As outlined in Title 21 of the 42 Code of Federal Regulations (CFR) section 1306.07 C, “there are no federal 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.”⁶² The decision to titrate methadone beyond 40 milligrams should be individualized based on the patient’s clinical course and medical status, the clinician’s comfort and access to an addiction specialist, and the patient’s ability to directly link to an opioid treatment program following hospital discharge. At the least, prescribing up to 40 milligrams of methadone daily for opioid withdrawal prevention among people who use illicit fentanyl or heroin is safe and should be readily utilized as a treatment modality during hospitalization.

Some reviewers requested clarification on roles and responsibilities when assessing and treating patients with OUD in the hospital setting. The guidelines which informed this Consensus Statement did not identify specific roles and responsibilities directed to a particular healthcare provider type or physician, including assessing patients for unhealthy opioid use with various validated screening tools; conducting and documenting the COWS score for buprenorphine initiation and dosing; verification of the patient’s last methadone dose and date; identification of local resources for direct linkage to treatment following hospital discharge; education regarding harm reduction; and advocating for patients to receive medications for OUD when they transition to a post-acute care facility. These roles and responsibilities can be completed by non-physician health care workers including advanced practice providers, nurses, pharmacists, and social workers. Hospitals employ teams of health care workers to ensure efficiency of care. The care of the hospitalized patient with OUD should include support from all team members. Additionally, whenever possible, processes for care should be automated with the use of standardized order sets for buprenorphine and methadone initiation, automatic ordering of naloxone at hospital discharge when a patient is prescribed buprenorphine or methadone, and incorporation of the state PMDP into the electronic health record to reduce workload and time spend on repetitive tasks.

The major limitation in this Consensus Statement is the lower quality of evidence from which these recommendations were made and were primarily based on observational studies and expert opinions and consensus. Additional research is needed before evidence-based recommendations can be made for some of the topics discussed in this Consensus Statement. Some topics identified by the working group that warrant future research include the frequency of screening for HIV and hepatitis C among hospitalized patients who inject drugs; the use of low dose or high dose protocols to initiate buprenorphine among people who regularly use long-acting opioids like methadone, or regular use of fentanyl or fentanyl analogues; practice recommendations regarding the use of short acting opioids, in addition to methadone or buprenorphine, for opioid withdrawal management in the hospital setting;¹⁴⁸ and importantly, best practices to reduce OUD treatment disparities by race and ethnicity.

This Consensus Statement includes recommendations for the management of OUD and related conditions among hospitalized patients based on the best available evidence. Until more high-quality evidence becomes available, this Consensus Statement may be used as a guide for the care of hospitalized adults with OUD. This Consensus Statement should be used in conjunction with clinical judgement, input from hospital-based providers (social workers, pharmacists, nurses), physicians, patients, and local and state policies or guidelines for OUD treatment to help facilitate consistent, high-quality care. In doing so, hospital-based providers and physicians can help close the treatment gap for patients with OUD.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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References

1. Statistics NCfH. Drug overdose deaths in the U.S. top 100,000 annually. Centers for Disease Control and Prevention. Updated November 17, 2021. Accessed May 22, 2022. https://www.cdc.gov/nchs/pressroom/nchs_press_releases/2021/20211117.htm
2. Wakeman SE, Laroche MR, Ameli O, et al. Comparative effectiveness of different treatment pathways for opioid use disorder. *JAMA Network Open*. 2020;3(2):e1920622–e1920622. doi:10.1001/jamanetworkopen.2019.20622 [PubMed: 32022884]
3. Laroche MR, Bernson D, Land T, et al. Medication for opioid use disorder after nonfatal opioid overdose and association with mortality: A cohort study. *Ann Intern Med*. Aug 7 2018;169(3):137–145. doi:10.7326/m17-3107 [PubMed: 29913516]
4. Andrilla CHA, Moore TE, Patterson DG, Larson EH. Geographic distribution of providers with a DEA waiver to prescribe buprenorphine for the treatment of opioid use disorder: A 5-year update. *J Rural Health*. Jan 2019;35(1):108–112. doi:10.1111/jrh.12307 [PubMed: 29923637]
5. Hartung DM, Johnston K, Geddes J, Leichtling G, Priest KC, Korthuis PT. Buprenorphine Coverage in the Medicare Part D Program for 2007 to 2018. *JAMA*. 2019;321(6):607–609. doi:10.1001/jama.2018.20391 [PubMed: 30747957]

43. Branson BM, Handsfield HH, Lampe MA, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Recomm Rep.* Sep 22 2006;55(Rr-14):1–17; quiz CE1–4.
44. Prevention CfDCa. Screening Recommendations and Considerations Referenced in Treatment Guidelines and Original Sources. Updated September 15, 2021. Accessed May 24, 2022. <https://www.cdc.gov/std/treatment-guidelines/screening-recommendations.htm>
45. Schillie S, Wester C, Osborne M, Wesolowski L, Ryerson AB. CDC Recommendations for Hepatitis C Screening Among Adults - United States, 2020. *MMWR Recomm Rep.* Apr 10 2020;69(2):1–17. doi:10.15585/mmwr.rr6902a1
46. Weinbaum CM, Mast EE, Ward JW. Recommendations for identification and public health management of persons with chronic hepatitis B virus infection. *Hepatology.* May 2009;49(5 Suppl):S35–44. doi:10.1002/hep.22882 [PubMed: 19399812]
47. Nelson NP, Weng MK, Hofmeister MILLIGRAM, et al. Prevention of Hepatitis A Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices, 2020. *MMWR Recomm Rep.* Jul 3 2020;69(5):1–38. doi:10.15585/mmwr.rr6905a1
48. Vuong C, Van Uum SHM, O'Dell LE, Lutfy K, Friedman TC. The effects of opioids and opioid analogs on animal and human Endocrine systems. *Endocrine Reviews.* 2010;31(1):98–132. doi:10.1210/er.2009-0009 [PubMed: 19903933]
49. Johnson RE, Jones HE, Fischer G. Use of buprenorphine in pregnancy: patient management and effects on the neonate. *Drug Alcohol Depend.* May 21 2003;70(2 Suppl):S87–101. doi:10.1016/s0376-8716(03)00062-0
50. Jarvis MA, Wu-Pong S, Kniseley JS, Schnoll SH. Alterations in methadone metabolism during late pregnancy. *J Addict Dis.* 1999;18(4):51–61. doi:10.1300/J069v18n04_05
51. Center for Substance Abuse T. SAMHSA/CSAT Treatment Improvement Protocols. Alcohol and Other Drug Screening of Hospitalized Trauma Patients. Substance Abuse and Mental Health Services Administration (US); 1995.
52. Treatment CfSA. A guide to substance abuse services for primary care clinicians. Appendix B. Legal and Ethical Issues. Treatment Improvement Protocol (TIP) Series Substance Abuse and Mental Health Services Administration; 1997.
53. Warner EA, Walker RM, Friedmann PD. Should informed consent be required for laboratory testing for drugs of abuse in medical settings? *Am J Med.* Jul 2003;115(1):54–8. doi:10.1016/s0002-9343(03)00236-5 [PubMed: 12867235]
54. Barry MJ, Edgman-Levitan S. Shared decision making--pinnacle of patient-centered care. *N Engl J Med.* Mar 1 2012;366(9):780–1. doi:10.1056/NEJMp1109283 [PubMed: 22375967]
55. Institute of Medicine Committee on Quality of Health Care in A. Crossing the Quality Chasm: A New Health System for the 21st Century. National Academies Press (US); 2001.
56. Sordo L, Barrio G, Bravo MJ, et al. Mortality risk during and after opioid substitution treatment: systematic review and meta-analysis of cohort studies. *Bmj.* Apr 26 2017;357:j1550. doi:10.1136/bmj.j1550 [PubMed: 28446428]
57. Tanum L, Solli KK, Latif Z-e-H, et al. Effectiveness of injectable extended-release naltrexone vs daily buprenorphine-naloxone for opioid dependence: A randomized clinical noninferiority trial. *JAMA Psychiatry.* 2017;74(12):1197–1205. doi:10.1001/jamapsychiatry.2017.3206 [PubMed: 29049469]
58. Lee JD, Nunes EV Jr., Novo P, et al. Comparative effectiveness of extended-release naltrexone versus buprenorphine-naloxone for opioid relapse prevention (X:BOT): a multicentre, open-label, randomised controlled trial. *Lancet.* Jan 27 2018;391(10118):309–318. doi:10.1016/s0140-6736(17)32812-x [PubMed: 29150198]
59. Treatment CfSA. Medications for opioid use disorder. Treatment improvement protocol (TIP) series 63. Substance Abuse and Mental Health Services Administration; 2005. vol. DHHS Publication No. (SMA) 05–4048.
60. Wesson DR, Ling W. The clinical opiate withdrawal scale (COWS). *J Psychoactive Drugs.* Apr-Jun 2003;35(2):253–9. doi:10.1080/02791072.2003.10400007 [PubMed: 12924748]

61. Strain EC, Harrison JA, Bigelow GE. Induction of opioid-dependent individuals onto buprenorphine and buprenorphine/naloxone soluble-films. *Clin Pharmacol Ther.* Mar 2011;89(3):443–9. doi:10.1038/clpt.2010.352 [PubMed: 21270789]
62. U.S. Department of Justice DEA, Diversion Control Division. Title 21 Code of Federal Regulations 1306.07: Administering or dispensing of narcotic drugs. United States Drug Enforcement Administration. Updated November 2, 2020. Accessed May 24, 2022. <https://www.ecfr.gov/current/title-21/chapter-II/part-1306/subject-group-ECFR1eb5bb3a23fddd0/section-1306.07>
63. Noska A, Mohan A, Wakeman S, Rich J, Boutwell A. Managing Opioid Use Disorder During and After Acute Hospitalization: A Case-Based Review Clarifying Methadone Regulation for Acute Care Settings. *J Addict Behav Ther Rehabil.* 2015;4(2)doi:10.4172/2324-9005.1000138
64. Hser YI, Saxon AJ, Huang D, et al. Treatment retention among patients randomized to buprenorphine/naloxone compared to methadone in a multi-site trial. *Addiction.* Jan 2014;109(1):79–87. doi:10.1111/add.12333 [PubMed: 23961726]
65. Fareed A, Vayalapalli S, Casarella J, Drexler K. Effect of buprenorphine dose on treatment outcome. *J Addict Dis.* 2012;31(1):8–18. doi:10.1080/10550887.2011.642758 [PubMed: 22356665]
66. A guide for patients beginning buprenorphine treatment at home. Updated September 24, 2019. Accessed May 24, 2022. https://medicine.yale.edu/edbup/quickstart/Home_Buprenorphine_Initiation_338574_42801_v1.pdf
67. Lee JD, Grossman E, DiRocco D, Gourevitch MN. Home buprenorphine/naloxone induction in primary care. *Journal of general internal medicine.* 2009;24(2):226–232. doi:10.1007/s11606-008-0866-8 [PubMed: 19089508]
68. Gasper Pharm D KHP James, Herring MD Andrew, Kan MD David, Lee MD Sky, Ling MD Walter, Luftig PA Josh, Moulin MD ASP Aimee, Snyder MD Hannah, Trozky-Sirr MD Rebecca. Buprenorphine (Bup) Hospital Quick Start. Accessed May 24, 2022. <https://static1.squarespace.com/static/5c412ab755b02cec3b4ed998/t/5f5ff10736ebc23814307021/1600123145998/REFERENCES++Bup+Hospital+Quick+Start++September+2020.pdf>
69. Administration SAaMHS. Buprenorphine quick start guide. Substance Abuse and Mental Health Services Administration. Accessed May 24, 2022. <https://www.samhsa.gov/sites/default/files/quick-start-guide.pdf>
70. Herring AA, Vosooghi AA, Luftig J, et al. High-Dose Buprenorphine Induction in the Emergency Department for Treatment of Opioid Use Disorder. *JAMA Netw Open.* Jul 1 2021;4(7):e2117128. doi:10.1001/jamanetworkopen.2021.17128 [PubMed: 34264326]
71. Button D, Hartley J, Robbins J, Levander XA, Smith NJ, Englander H. Low-dose Buprenorphine Initiation in Hospitalized Adults With Opioid Use Disorder: A Retrospective Cohort Analysis. *J Addict Med.* May 17 2021;doi:10.1097/adm.0000000000000864
72. Ghosh SM, Klaire S, Tanguay R, Manek M, Azar P. A review of novel methods to support the transition from methadone and other full agonist opioids to buprenorphine/naloxone sublingual in both community and acute care settings. *Canadian J Addict.* 2019;10(4):41–50. doi:doi:10.1097/CXA.0000000000000072
73. Ahmed S, Bhivandkar S, Lonergan BB, Suzuki J. Microinduction of Buprenorphine/Naloxone: A Review of the Literature. *Am J Addict.* Jul 2021;30(4):305–315. doi:10.1111/ajad.13135 [PubMed: 33378137]
74. Antoine D, Huhn AS, Strain EC, et al. Method for Successfully Inducting Individuals Who Use Illicit Fentanyl Onto Buprenorphine/Naloxone. *Am J Addict.* Jan 2021;30(1):83–87. doi:10.1111/ajad.13069 [PubMed: 32572978]
75. Baxter LE Sr., Campbell A, Deshields M, et al. Safe methadone induction and stabilization: report of an expert panel. *J Addict Med.* Nov-Dec 2013;7(6):377–86. doi:10.1097/01.ADM.0000435321.39251.d7 [PubMed: 24189172]
76. Bart G, Wyman Z, Wang Q, Hodges JS, Karim R, Bart BA. Methadone and the QTc Interval: Paucity of Clinically Significant Factors in a Retrospective Cohort. *Journal of addiction medicine.* Nov/Dec 2017;11(6):489–493. doi:10.1097/ADM.0000000000000353 [PubMed: 28863009]

77. Pani PP, Trogu E, Maremmani I, Pacini M. QTc interval screening for cardiac risk in methadone treatment of opioid dependence. *Cochrane Database Syst Rev.* Jun 20 2013;(6):Cd008939. doi:10.1002/14651858.CD008939.pub2
78. Tan HL, Hou CJ, Lauer MR, Sung RJ. Electrophysiologic mechanisms of the long QT interval syndromes and torsade de pointes. *Ann Intern Med.* May 1 1995;122(9):701–14. doi:10.7326/0003-4819-122-9-199505010-00009 [PubMed: 7702233]
79. Fareed A, Vayalapalli S, Scheinberg K, Gale R, Casarella J, Drexler K. QTc interval prolongation for patients in methadone maintenance treatment: a five years follow-up study. *The American Journal of Drug and Alcohol Abuse.* 2013/07/01 2013;39(4):235–240. doi:10.3109/00952990.2013.804525 [PubMed: 23808912]
80. Ehret GB, Voide C, Gex-Fabry M, et al. Drug-Induced Long QT Syndrome in Injection Drug Users Receiving Methadone: High Frequency in Hospitalized Patients and Risk Factors. *Archives of Internal Medicine.* 2006;166(12):1280–1287. doi:10.1001/archinte.166.12.1280 [PubMed: 16801510]
81. Stallvik M, Nordstrand B, Kristensen Ø, Bathen J, Skogvoll E, Spigset O. Corrected QT interval during treatment with methadone and buprenorphine--relation to doses and serum concentrations. *Drug Alcohol Depend.* Apr 1 2013;129(1–2):88–93. doi:10.1016/j.drugalcdep.2012.09.016 [PubMed: 23084592]
82. Drew BJ, Ackerman MJ, Funk M, et al. Prevention of torsade de pointes in hospital settings: a scientific statement from the American Heart Association and the American College of Cardiology Foundation. *J Am Coll Cardiol.* Mar 2 2010;55(9):934–47. doi:10.1016/j.jacc.2010.01.001 [PubMed: 20185054]
83. Al-Khatib SM, LaPointe NM, Kramer JM, Califf RM. What clinicians should know about the QT interval. *Jama.* Apr 23-30 2003;289(16):2120–7. doi:10.1001/jama.289.16.2120 [PubMed: 12709470]
84. Curtis LH, Østbye T, Sendersky V, et al. Prescription of QT-prolonging drugs in a cohort of about 5 million outpatients. *Am J Med.* Feb 1 2003;114(2):135–41. doi:10.1016/s0002-9343(02)01455-9 [PubMed: 12586234]
85. Chou R, Cruciani RA, Fiellin DA, et al. Methadone safety: a clinical practice guideline from the American Pain Society and College on Problems of Drug Dependence, in collaboration with the Heart Rhythm Society. *J Pain.* Apr 2014;15(4):321–37. doi:10.1016/j.jpain.2014.01.494 [PubMed: 24685458]
86. Krantz MJ, Lowery CM, Martell BA, Gourevitch MN, Arnsten JH. Effects of methadone on QT-interval dispersion. *Pharmacotherapy.* Nov 2005;25(11):1523–9. doi:10.1592/phco.2005.25.11.1523 [PubMed: 16232014]
87. Krantz MJ, Kutinsky IB, Robertson AD, Mehler PS. Dose-related effects of methadone on QT prolongation in a series of patients with torsade de pointes. *Pharmacotherapy.* Jun 2003;23(6):802–5. doi:10.1592/phco.23.6.802.32186 [PubMed: 12820821]
88. Gowing L, Farrell M, Ali R, White JM. Alpha₂-adrenergic agonists for the management of opioid withdrawal. *Cochrane Database Syst Rev.* May 3 2016;2016(5):Cd002024. doi:10.1002/14651858.CD002024.pub5
89. Kosten TR, Baxter LE. Review article: Effective management of opioid withdrawal symptoms: A gateway to opioid dependence treatment. *Am J Addict.* Feb 2019;28(2):55–62. doi:10.1111/ajad.12862 [PubMed: 30701615]
90. Sigmon SC, Bisaga A, Nunes EV, O'Connor PG, Kosten T, Woody G. Opioid detoxification and naltrexone induction strategies: recommendations for clinical practice. *Am J Drug Alcohol Abuse.* May 2012;38(3):187–99. doi:10.3109/00952990.2011.653426 [PubMed: 22404717]
91. Guaiana G, Barbui C, Cipriani A. Hydroxyzine for generalised anxiety disorder. *Cochrane Database Syst Rev.* Dec 8 2010;(12):Cd006815. doi:10.1002/14651858.CD006815.pub2 [PubMed: 21154375]
92. Baker DE. Loperamide: a pharmacological review. *Rev Gastroenterol Disord.* 2007;7 Suppl 3:S11–8. [PubMed: 18192961]
93. Treatment PCSSfMA. XR-Naltrexone: A step-by-step guide. Accessed May 24, 2022. http://pcssnow.org/wp-content/uploads/2017/02/Naltrexone_Step-by-Step_Virtual_Brochure-1.pdf

94. Minozzi S, Amato L, Vecchi S, Davoli M, Kirchmayer U, Verster A. Oral naltrexone maintenance treatment for opioid dependence. *Cochrane Database Syst Rev*. Feb 16 2011;(2):Cd001333. doi:10.1002/14651858.CD001333.pub3
95. Raffa RB, Haidery M, Huang HM, et al. The clinical analgesic efficacy of buprenorphine. *J Clin Pharm Ther*. Dec 2014;39(6):577–83. doi:10.1111/jcpt.12196 [PubMed: 25070601]
96. Leppert W The role of methadone in cancer pain treatment--a review. *Int J Clin Pract*. Jul 2009;63(7):1095–109. doi:10.1111/j.1742-1241.2008.01990.x [PubMed: 19570126]
97. Orman JS, Keating GM. Buprenorphine/Naloxone. *Drugs*. 2009/03/01 2009;69(5):577–607. doi:10.2165/00003495-200969050-00006 [PubMed: 19368419]
98. Alford DP, Compton P, Samet JH. Acute pain management for patients receiving maintenance methadone or buprenorphine therapy. *Ann Intern Med*. Jan 17 2006;144(2):127–34. doi:10.7326/0003-4819-144-2-200601170-00010 [PubMed: 16418412]
99. Ferrari A, Coccia CP, Bertolini A, Sternieri E. Methadone--metabolism, pharmacokinetics and interactions. *Pharmacol Res*. Dec 2004;50(6):551–9. doi:10.1016/j.phrs.2004.05.002 [PubMed: 15501692]
100. Kantor TG, Cantor R, Tom E. A study of hospitalized surgical patients on methadone maintenance. *Drug Alcohol Depend*. Sep 1980;6(3):163–73. doi:10.1016/0376-8716(80)90455-x [PubMed: 6107237]
101. Manfredi PL, Gonzales GR, Cheville AL, Kornick C, Payne R. Methadone analgesia in cancer pain patients on chronic methadone maintenance therapy. *J Pain Symptom Manage*. Feb 2001;21(2):169–74. doi:10.1016/s0885-3924(00)00252-9 [PubMed: 11226767]
102. Lembke A, Ottestad E, Schmiesing C. Patients Maintained on Buprenorphine for Opioid Use Disorder Should Continue Buprenorphine Through the Perioperative Period. *Pain Medicine*. 2018;20(3):425–428. doi:10.1093/pm/pny019
103. Jonan AB, Kaye AD, Urman RD. Buprenorphine Formulations: Clinical Best Practice Strategies Recommendations for Perioperative Management of Patients Undergoing Surgical or Interventional Pain Procedures. *Pain Physician*. Jan 2018;21(1):E1–e12. [PubMed: 29357325]
104. Quayle AN, Zhang Y. Perioperative Management of Buprenorphine: Solving the Conundrum. *Pain Med*. Jul 1 2019;20(7):1395–1408. doi:10.1093/pm/pny217 [PubMed: 30500943]
105. Goel A, Azargive S, Lamba W, et al. The perioperative patient on buprenorphine: a systematic review of perioperative management strategies and patient outcomes. *Can J Anaesth*. Feb 2019;66(2):201–217. Le patient en période périopératoire sous buprénorphine : revue systématique des stratégies de gestion périopératoire et de l'évolution des patients. doi:10.1007/s12630-018-1255-3 [PubMed: 30484167]
106. Haber LA, DeFries T, Martin M. Things We Do for No Reason™: Discontinuing Buprenorphine When Treating Acute Pain. *J Hosp Med*. Oct 1 2019;14(10):633–635. doi:10.12788/jhm.3265 [PubMed: 31433765]
107. Buresh M, Ratner J, Zgierska A, Gordin V, Alvanzo A. Treating Perioperative and Acute Pain in Patients on Buprenorphine: Narrative Literature Review and Practice Recommendations. *J Gen Intern Med*. Dec 2020;35(12):3635–3643. doi:10.1007/s11606-020-06115-3 [PubMed: 32827109]
108. Kohan L, Potru S, Barreveld AM, et al. Buprenorphine management in the perioperative period: educational review and recommendations from a multisociety expert panel. *Reg Anesth Pain Med*. Oct 2021;46(10):840–859. doi:10.1136/rapm-2021-103007 [PubMed: 34385292]
109. Hickey T, Abelleira A, Acampora G, et al. Perioperative Buprenorphine Management: A Multidisciplinary Approach. *Med Clin North Am*. Jan 2022;106(1):169–185. doi:10.1016/j.mcna.2021.09.001 [PubMed: 34823729]
110. Medicine SoH. New Buprenorphine Practice Guidelines: FAQs. Society of Hospital Medicine. Accessed May 24, 2022. <https://www.hospitalmedicine.org/globalassets/practice-management/practice-management-pdf/x-waiver-faq.pdf>
111. Administration SAaMHS. Buprenorphine waiver notification. Substance Abuse and Mental Health Services Administration. Accessed May 24, 2022. <https://buprenorphine.samhsa.gov/forms/select-practitioner-type.php>

112. Medicine ASoA. Buprenorphine Mini-Course: Building on Federal Prescribing Guidance. American Society of Addiction Medicine. Accessed May 24, 2022. https://elearning.asam.org/products/buprenorphine-mini-course-building-on-federal-prescribing-guidance#tab-product_tab_overview
113. Administration SAaMHS. Find treatment. Substance Abuse and Mental Health Services Administration. Accessed May 24, 2022. <https://findtreatment.gov/>
114. Administration SAaMHS. Buprenorphine practitioner locator. Substance Abuse and Mental Health Services Administration. Accessed May 24, 2022. <https://www.samhsa.gov/medication-assisted-treatment/find-treatment/treatment-practitioner-locator>
115. ATLAS. Find high quality addiction treatment. Accessed May 24, 2022. <https://www.treatmentatlas.org/>
116. Administration SAaMHS. FAQs: Provision of methadone and buprenorphine for the treatment of opioid use disorder in the COVID-19 emergency. Substance Abuse and Mental Health Services Administration. Updated April 21. Accessed May 24, 2022. <https://www.samhsa.gov/sites/default/files/faqs-for-oud-prescribing-and-dispensing.pdf>
117. Vakkalanka JP, Lund BC, Ward MM, et al. Telehealth Utilization Is Associated with Lower Risk of Discontinuation of Buprenorphine: a Retrospective Cohort Study of US Veterans. *J Gen Intern Med.* Jun 22 2021;1–9. doi:10.1007/s11606-021-06969-1
118. Cales RH, Cales SC, Shreffler J, Huecker MR. The COVID-19 pandemic and opioid use disorder: Expanding treatment with buprenorphine, and combining safety precautions with telehealth. *J Subst Abuse Treat.* Feb 2022;133:108543. doi:10.1016/j.jsat.2021.108543 [PubMed: 34210567]
119. Guillen AG, Reddy M, Saadat S, Chakravarthy B. Utilization of Telehealth Solutions for Patients with Opioid Use Disorder Using Buprenorphine: A Scoping Review. *Telemed J E Health.* Oct 29 2021;doi:10.1089/tmj.2021.0308
120. Clark SA, Davis C, Wightman RS, et al. Using telehealth to improve buprenorphine access during and after COVID-19: A rapid response initiative in Rhode Island. *J Subst Abuse Treat.* May 2021;124:108283. doi:10.1016/j.jsat.2021.108283 [PubMed: 33771282]
121. Suzuki J, DeVido J, Kalra I, et al. Initiating buprenorphine treatment for hospitalized patients with opioid dependence: A case series. *Am J Addict.* Jan 2015;24(1):10–4. doi:10.1111/ajad.12161 [PubMed: 25823630]
122. Administration SAaMHS. Behavioral health treatment services locator. Substance Abuse and Mental Health Services Administration. Accessed May 24, 2022. <https://findtreatment.samhsa.gov/>
123. Recovery S There's life beyond addiction. Updated 2022. Accessed May 24, 2022. <https://www.smartrecovery.org/>
124. Anonymous N Find A Meeting. Updated 2012. Accessed May 24, 2022. <https://www.na.org/meetingsearch/>
125. Coalition NHR. Find Harm Reduction Resources Near You. Accessed May 24, 2022. <https://harmreduction.org/resource-center/harm-reduction-near-you/>
126. Recovery FaVo. ARCO Members on the Map. Accessed May 24, 2022. <https://facesandvoicesofrecovery.org/>
127. Chan CA, Canver B, McNeil R, Sue KL. Harm Reduction in Health Care Settings. *Med Clin North Am.* Jan 2022;106(1):201–217. doi:10.1016/j.mena.2021.09.002 [PubMed: 34823731]
128. Perera R, Stephan L, Appa A, et al. Meeting people where they are: implementing hospital-based substance use harm reduction. *Harm Reduction Journal.* 2022/02/09 2022;19(1):14. doi:10.1186/s12954-022-00594-9 [PubMed: 35139877]
129. Khan GK, Harvey L, Johnson S, et al. Integration of a community-based harm reduction program into a safety net hospital: a qualitative study. *Harm Reduction Journal.* 2022/04/12 2022;19(1):35. doi:10.1186/s12954-022-00622-8 [PubMed: 35414072]
130. Lennox R, Martin L, Brimner C, O'Shea T. Hospital policy as a harm reduction intervention for people who use drugs. *Int J Drug Policy.* Nov 2021;97:103324. doi:10.1016/j.drugpo.2021.103324 [PubMed: 34153628]

131. Soares NSA, Fernandes MA, Ribeiro HKP, Rocha DM, Ribeiro Í AP. Harm reduction in primary healthcare: an integrative review of care strategies. *Rev Esc Enferm USP*. 2020;54:e03591. doi:10.1590/s1980-220x2018051803591 [PubMed: 32965442]
132. Ashford RD, Curtis B, Brown AM. Peer-delivered harm reduction and recovery support services: initial evaluation from a hybrid recovery community drop-in center and syringe exchange program. *Harm Reduction Journal*. 2018/10/22 2018;15(1):52. doi:10.1186/s12954-018-0258-2 [PubMed: 30348170]
133. Kimmel SD, Rosenmoss S, Bearnot B, Larochelle M, Walley AY. Rejection of patients with opioid use disorder referred for post-acute medical care before and after an anti-discrimination settlement in Massachusetts. *J Addict Med*. Jan-Feb 01 2021;15(1):20–26. doi:10.1097/adm.0000000000000693 [PubMed: 32675798]
134. U.S. Attorney’s Office Settles Disability Discrimination Allegations with Operator of Skilled Nursing Facilities. December 29, 2020. Accessed May 24, 2022. <https://www.justice.gov/usao-ma/pr/us-attorney-s-office-settles-disability-discrimination-allegations-operator-skilled-0>
135. Mattson CL, Tanz LJ, Quinn K, Kariisa M, Patel P, Davis NL. Trends and Geographic Patterns in Drug and Synthetic Opioid Overdose Deaths - United States, 2013–2019. *MMWR Morb Mortal Wkly Rep*. Feb 12 2021;70(6):202–207. doi:10.15585/mmwr.mm7006a4 [PubMed: 33571180]
136. Sohn M, Talbert JC, Huang Z, Lofwall MR, Freeman PR. Association of naloxone coprescription laws with naloxone prescription dispensing in the United States. *JAMA Netw Open*. Jun 5 2019;2(6):e196215. doi:10.1001/jamanetworkopen.2019.6215 [PubMed: 31225895]
137. Wheeler E, Jones TS, Gilbert MK, Davidson PJ. Opioid Overdose Prevention Programs Providing Naloxone to Laypersons - United States, 2014. *MMWR Morb Mortal Wkly Rep*. Jun 19 2015;64(23):631–5. [PubMed: 26086633]
138. Walley AY, Xuan Z, Hackman HH, et al. Opioid overdose rates and implementation of overdose education and nasal naloxone distribution in Massachusetts: interrupted time series analysis. *Bmj*. Jan 30 2013;346:f174. doi:10.1136/bmj.f174 [PubMed: 23372174]
139. McDonald R, Campbell ND, Strang J. Twenty years of take-home naloxone for the prevention of overdose deaths from heroin and other opioids—Conception and maturation. *Drug Alcohol Depend*. Sep 1 2017;178:176–187. doi:10.1016/j.drugalcdep.2017.05.001 [PubMed: 28654870]
140. Burris S, Norland J, Edlin BR. Legal aspects of providing naloxone to heroin users in the United States. *Int J Drug Policy*. 2001/09/01/ 2001;12(3):237–248. doi:10.1016/S0955-3959(01)00080-9
141. Davis CS, Burris S, Beletsky L, Binswanger IMMM. Co-prescribing naloxone does not increase liability risk. *Subst Abuse*. Oct-Dec 2016;37(4):498–500. doi:10.1080/08897077.2016.1238431 [PubMed: 27648764]
142. Davis CS, Carr D. Legal changes to increase access to naloxone for opioid overdose reversal in the United States. *Drug Alcohol Depend*. Dec 1 2015;157:112–20. doi:10.1016/j.drugalcdep.2015.10.013 [PubMed: 26507172]
143. Binswanger IA, Stern MF, Deyo RA, et al. Release from prison--a high risk of death for former inmates. *N Engl J Med*. Jan 11 2007;356(2):157–65. doi:10.1056/NEJMs064115 [PubMed: 17215533]
144. Binswanger IA, Blatchford PJ, Mueller SR, Stern MF. Mortality after prison release: opioid overdose and other causes of death, risk factors, and time trends from 1999 to 2009. *Ann Intern Med*. Nov 5 2013;159(9):592–600. doi:10.7326/0003-4819-159-9-201311050-00005 [PubMed: 24189594]
145. Cousins G, Teljeur C, Motterlini N, McCowan C, Dimitrov BD, Fahey T. Risk of drug-related mortality during periods of transition in methadone maintenance treatment: a cohort study. *J Subst Abuse Treat*. Oct 2011;41(3):252–60. doi:10.1016/j.jsat.2011.05.001 [PubMed: 21696913]
146. Santo T Jr., Clark B, Hickman M, et al. Association of opioid agonist treatment with all-cause mortality and specific causes of death among people with opioid dependence: A systematic review and meta-analysis. *JAMA Psychiatry*. 2021;78(9):979–993. doi:10.1001/jamapsychiatry.2021.0976 [PubMed: 34076676]
147. Institute of Medicine Committee on Federal Regulation of Methadone T. In: Rettig RA, Yarmolinsky A, eds. *Federal Regulation of Methadone Treatment*. National Academies Press (US) Copyright 1995 by the National Academy of Sciences. All rights reserved.; 1995.

148. Kleinman RA, Wakeman SE. Treating opioid withdrawal in the hospital: A role for short-acting opioids. *Ann Intern Med.* Feb 2022;175(2):283–284. doi:10.7326/m21-3968 [PubMed: 34807718]

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Table 1.

Topics for which Recommendations Were Extracted From Existing Guidelines

•	Best practices to screen, diagnose, and treat OUD
•	Best practices for the treatment of opioid withdrawal
•	Best practices to manage perioperative and acute pain in patients with OUD
•	Best practices to manage patients whose goal is not complete abstinence
•	Best practices to link patients with OUD to addiction treatment

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Table 2.

Society of Hospital Medicine Key Guidance for Opioid Use Disorder Assessment, Treatment, Overdose Prevention, and Care Transitions for Hospitalists

Non-Stigmatizing Medical Communication and Language for People Who Use Opioids	
•	Use non-stigmatizing and person-first language
Assessment of Unhealthy Opioid Use and Diagnosis of OUD	
•	Assess hospitalized patients with unhealthy opioid use for OUD
•	Use the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM – 5) criteria to diagnose OUD
•	Offer HIV, hepatitis A, B, and C, syphilis, pregnancy testing, and urine drug analysis to patients who meet DSM–5 criteria for OUD
OUD Medication for DSM–5 Confirmed Diagnosis	
•	Use shared decision making to initiate medications for OUD
•	Offer buprenorphine or methadone as first line agents to treat opioid withdrawal and OUD
•	Initiate buprenorphine at 2 to 4 milligrams
•	Initiate methadone at 20 to 30 milligrams to treat opioid withdrawal and/or OUD
•	If already performed, review an EKG to assess for QTc prolongation as part of a risk-benefit assessment when initiating methadone
•	Prescribe non-opioid adjunctive medications, as appropriate, (e.g., clonidine, loperamide, NSAIDs, acetaminophen, ondansetron, hydroxyzine) for opioid withdrawal symptoms in addition to buprenorphine or methadone
•	Offer intramuscular (IM) naltrexone if the patient prefers opioid antagonist treatment to methadone or buprenorphine
Acute Pain and/or Perioperative Pain Management in the Setting of OUD	
•	Assess and treat pain in the setting of OUD
•	Continue buprenorphine or methadone during hospitalization, including in the setting of acute pain and the perioperative period
Care Transition at Hospital Discharge	
•	Obtain an X-Waiver to prescribe buprenorphine at hospital discharge
•	Link patients to a buprenorphine prescriber or an opioid treatment program when they want to continue buprenorphine or methadone following hospital discharge
•	Link patients to psychosocial support, mental health treatment, mutual support groups, peer recovery supports, harm reduction services, and, if appropriate, resources for access to housing and shelters when they desire these services following hospital discharge
•	Discharge patients on medication for OUD to facilities that will continue these medications when patients require post-acute care following hospital discharge
•	Prescribe naloxone at hospital discharge for all patients with OUD