SHOUT TEXAS

Toolkit for Hospital Opioid Use Disorder Treatment

TEXAS TARGETED Opioid Response

BE WELL. TEXAS

Texas Hospital Association

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Executive Summary

The opioid crisis continues to be a public health emergency. Opioid overdose is the leading cause of accidental death for adults under the age of 50 in the United States. An average of 130 people die every day across the United States from an opioid overdose. **The Texas population and its healthcare system have been seriously impacted by the epidemic - approximately 50% of overdose deaths are opioid related.**

Patients with untreated Opioid Use Disorder (OUD) have high rates of acute health care utilization, and hospitals take on a significant amount of the financial burden caused by the crisis. Numerous diagnoses that occur in the setting of unhealthy substance use may result in hospitalization, including infective endocarditis, osteomyelitis, epidural and spinal abscess, joint infections, cellulitis, necrotizing fasciitis, hepatitis B and C, human immunodeficiency virus (HIV), and other sexually transmitted infections.

Hospitalization is an ideal opportunity to offer patients with OUD access to treatment. Up to 20% of patients with OUD require hospital readmission at 30 days, and up to 30% at 90 days. Moreover, they may self-discharge from the hospital with unresolved medical conditions due to fear of mistreatment, shame and stigma from staff and inadequately controlled cravings or withdrawal symptoms. Hospitalization can also be a reachable and treatable moment for people with OUD. They often recognize substance use as a major reason for hospitalization, see hospitalization as an opportunity to seek treatment, and can move to a higher degree of change-readiness during their hospitalization.

Buprenorphine is an FDA-approved medication to treat OUD. This evidence-based and cost-effective medication reduces cravings, manages withdrawal, promotes engagement in outpatient addiction treatment, and is an integral component to a hospital's approach to addiction services. In addition, hospitals should implement harm reduction approaches that include distribution of naloxone, and work to improve the standard of care for those with substance use disorders during acute hospitalization.

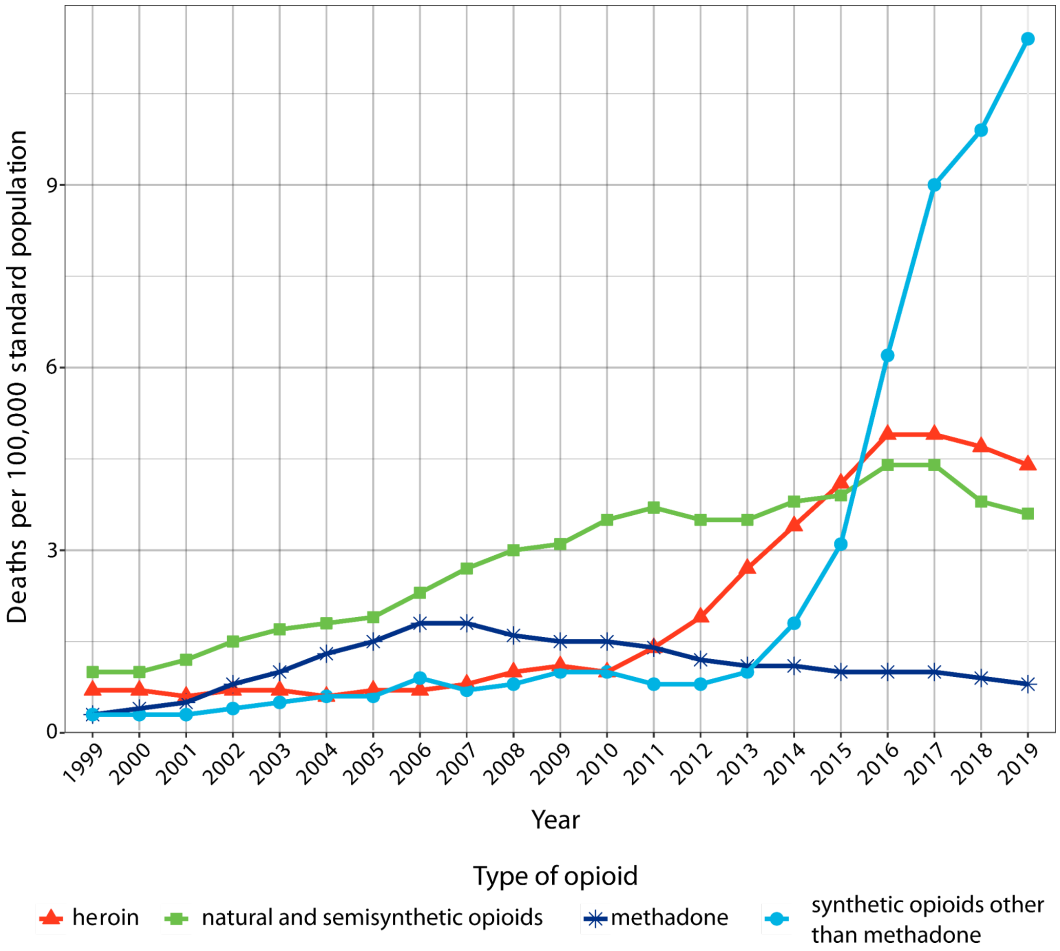
Patients present to hospitals for a wide range of acute crises, and for people with substance use disorders, addiction can become such a crisis. **Hospitals can be critical access points** for these patients, providing an opportunity to initiate treatment, promote harm reduction, begin recovery pathways, and facilitate linkages to capable community clinics for ongoing addiction care.

SECTION 1: DEFINING THE CHALLENGE

Opioid Use Disorder Epidemiology

Opioid overdose is the leading cause of accidental death for adults under the age of 50 in the United States (U.S.);[1] **nearly 50,000 opioid-related overdose deaths occured in 2019 and nearly 500,000 from 1999–2019**.[2] Although overdose deaths from heroin and prescribed opioids have declined recently, deaths from synthetic opioid overdoses (predominantly fentanyl and fentanyl analogues) have skyrocketed (see Figure 1). Provisional data indicate that overdose deaths have further increased during the COVID-19 pandemic,[3] at least in part due to restricted access to OUD treatment.[4]

Figure 1. Overdose Death Rates Involving Opioids by Opioid Type, United States, 1999–2019[5]



Over 1.6 million people in the U.S. have an OUD diagnosis[6], and the prevalence is likely significantly higher.[7] The opioid epidemic has resulted in an historical increase in the number of unintentional deaths secondary to opioid poisoning. **An average of 130 people die every day in the U.S. from an opioid overdose**.[8] From 2001 to 2016, deaths related to opioid overdoses increased by 345%.[9] During that period, 1 of every 5 deaths among 24- to 35-year-old men was attributed to opioids.[9] In 2017, 1 of every 6 hearts donated for transplantation were a result of an overdose death.[10]

Overdoses and COVID-19
Over 92,000 people in the U.S. died from overdoses from December 2019 to December 2020 – the largest number ever recorded.[3]

The opioid overdose crisis has plagued rural and suburban white, non-Hispanic communities in the U.S. for some time; however, in recent years there also has been a surge in deaths in Hispanic and Black communities.[11] In a study examining opioid-related overdose deaths from 2008 to 2015, **those more likely to die from an opioid overdose had less education, earned a lower income or were unemployed, had a disability, were incarcerated, or were uninsured.**[12] In 2019, the National Survey on Drug Use and Health reported that nearly 10 million U.S. residents aged 12 and older had misused an opioid in the prior year.[13]

Three Waves of the Opioid Epidemic

It is important to appreciate the intersection of unhealthy prescription opioid use and opioids such as heroin and fentanyl. The timeline of the opioid epidemic is often described in terms of "three waves". The first wave began in the 1990s and was related primarily to prescription opioids.[6] During this time, opioid prescriptions increased by more than 300%.[14] Contrary to early research and messaging in the scientific community that opioids were entirely safe and non-addictive, more recent evidence suggests that **up to 12% of patients who are started on an opioid medication by their healthcare provider will develop an OUD.**[15]

The second wave began in 2010 when extended-release oxycodone (OxyContin®) was reformulated to deter its misuse and a systematic crackdown on prescription "pill mill" suppliers occurred nationwide. Unfortunately, these actions had the unintended consequence of driving people away from using OxyContin® and other prescription opioids and toward heroin, which was more widely available and less expensive.[16]

The third wave began in 2013 and is marked by the widespread adulteration of heroin with cheap, highly potent synthetic (laboratory made) opioids such as fentanyl and its

analogues. In 2015, the number of heroin-related overdose deaths surpassed that of prescription opioids for the first time.[17] From 2013 to 2014, the number of specimens testing positive for fentanyl by law enforcement increased by 426%, which coincided with a **79% increase in fentanyl-related overdose deaths during the same period**.[18]

People with OUD may use prescription opioids, heroin, and/or fentanyl in an unhealthy fashion. In addition, the illicit drug supply as a whole has been tainted by fentanyl due to its ease and low cost of manufacturing. Unfortunately, it is now common for people to purchase substances which they think are pure opioids (oxycodone or heroin in particular), benzodiazepines, or stimulants, only to experience an overdose because the product has been adulterated with fentanyl analogs. **This discrete contamination by highly potent fentanyl analogs in the context of substance prohibition is largely to blame for the exponential increase in mortality related to substance use across all classes.**

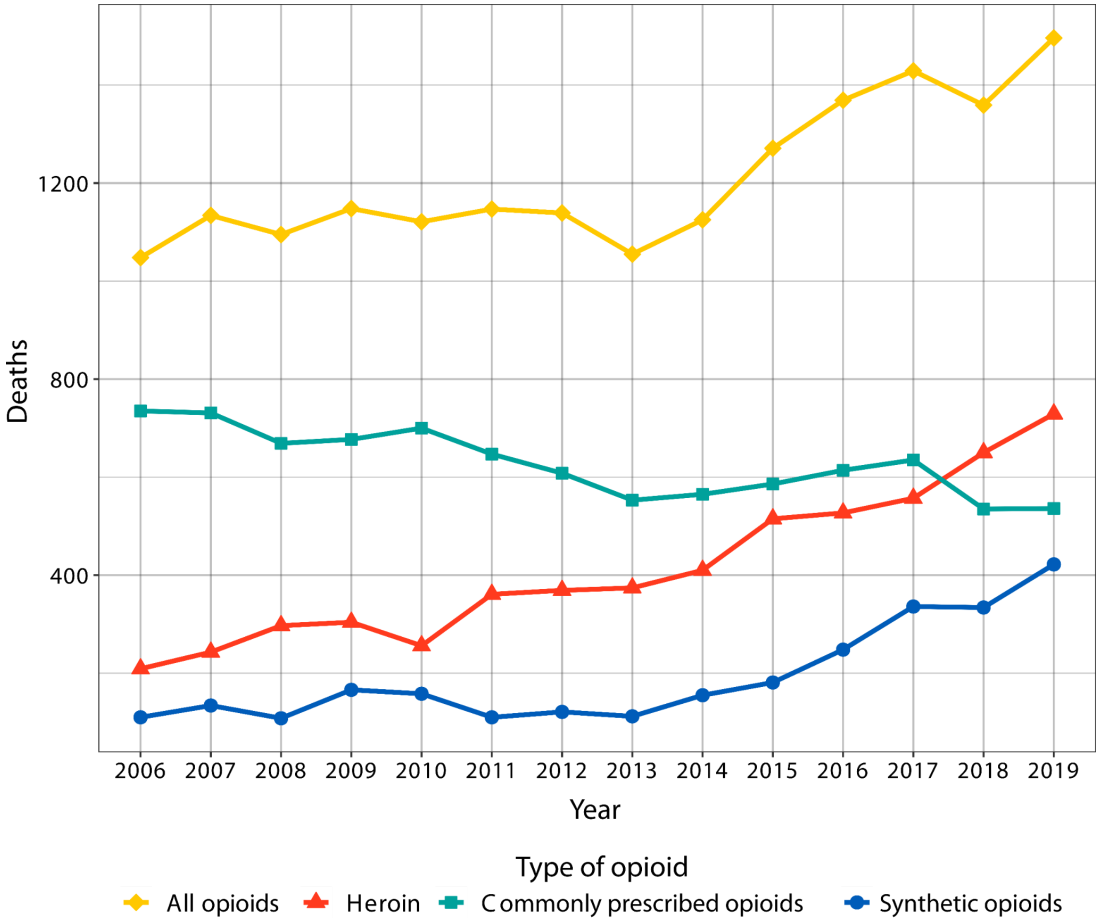
The Opioid Overdose Crisis in Texas

The Texas population and its healthcare system have been seriously impacted by the opioid epidemic and currently about 50% of overdose deaths are opioid-related.[19] Between 1999 and 2019, opioid overdose deaths in Texas increased fourfold.[20] In more recent provisional data, **reported overdose deaths in Texas increased by 33% between 2019 and 2020.**[3] Although previously most opioid-related overdose deaths in Texas were prescription medication-related (see Figure 2), heroin-related overdose deaths surpassed prescription opioid-related deaths in 2018, and synthetic opioid-related overdose deaths also increased in recent years.

Between 2018 and 2019, the largest increase in synthetic opioid-related overdose deaths occurred in the Western region of the U.S. [21] In Texas, during 2017-2019, an estimated 3.7% of prescriptions for pain relievers were misused, and the prevalence of OUD in the state was 0.3% among adults and 0.7% among young adults.[22]

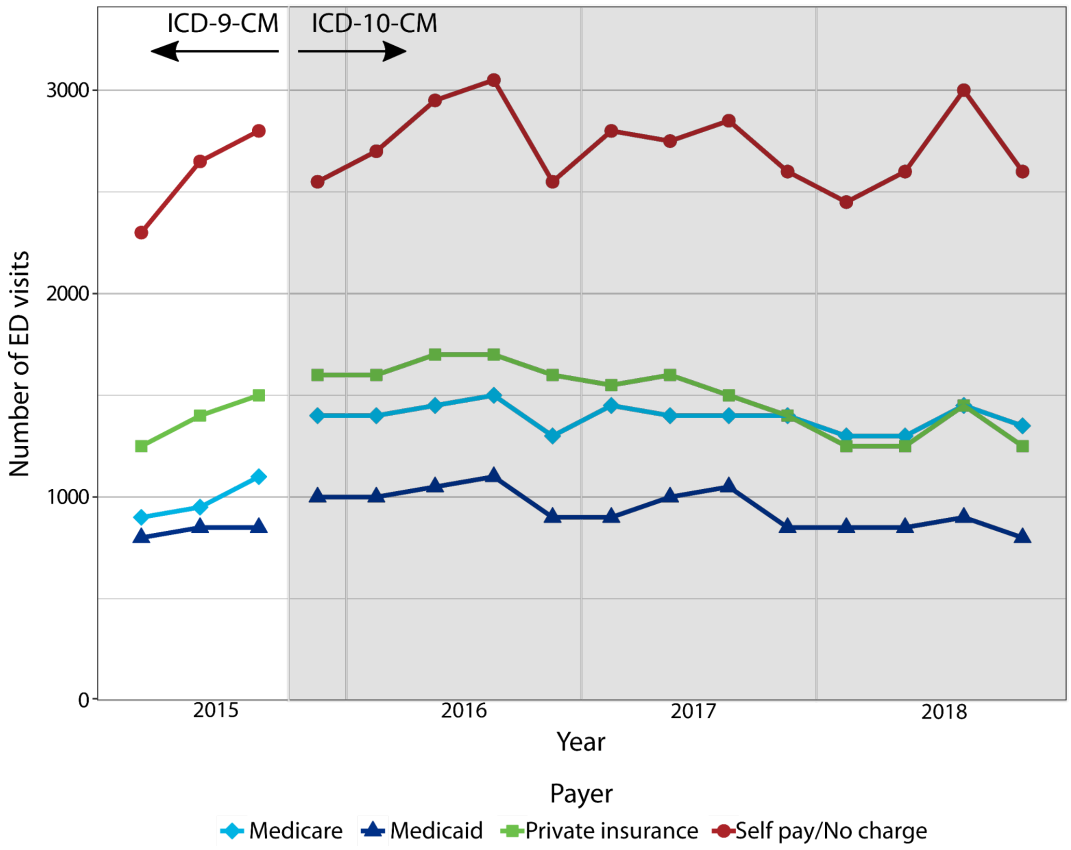
Patients with untreated OUD have high rates of acute health care utilization, and hospitals take on a significant amount of the financial burden caused by the crisis.[23] Importantly, most ED visits are for uninsured patients. In 2018, an estimated 25,250 opioid-related visits to the Emergency Department (ED) and 34,900 opioid-related inpatient stays occurred in Texas (see Figure 3 and Figure 4). This does not include ED visits and hospital stays for conditions associated with OUD (e.g., injection-related conditions) where an OUD diagnosis was not documented.

Figure 2. Number of Overdose Deaths Involving Opioids in Texas, by Opioid Type[19]



Furthermore, the incidence of Neonatal Abstinence Syndrome (NAS)/Neonatal Opioid Withdrawal Syndrome (NOWS) in Texas in 2018 was 2.4 cases per 1,000 hospital births - a 70% increase in the past decade. The average cost of NAS/NOWS is $13,900 per birth.[20] Currently, most patients are not receiving the gold standard of medication for opioid use disorder (MOUD) (e.g., buprenorphine, methadone, or XR-naltrexone).[24] For example, **in a single-day count in March 2019 in Texas, only 1,764 people were receiving buprenorphine as part of their treatment, a 20% drop from 2015.[22]**

Figure 3. Number of Opioid-Related ED Visits in Texas, by Expected Payer[25]



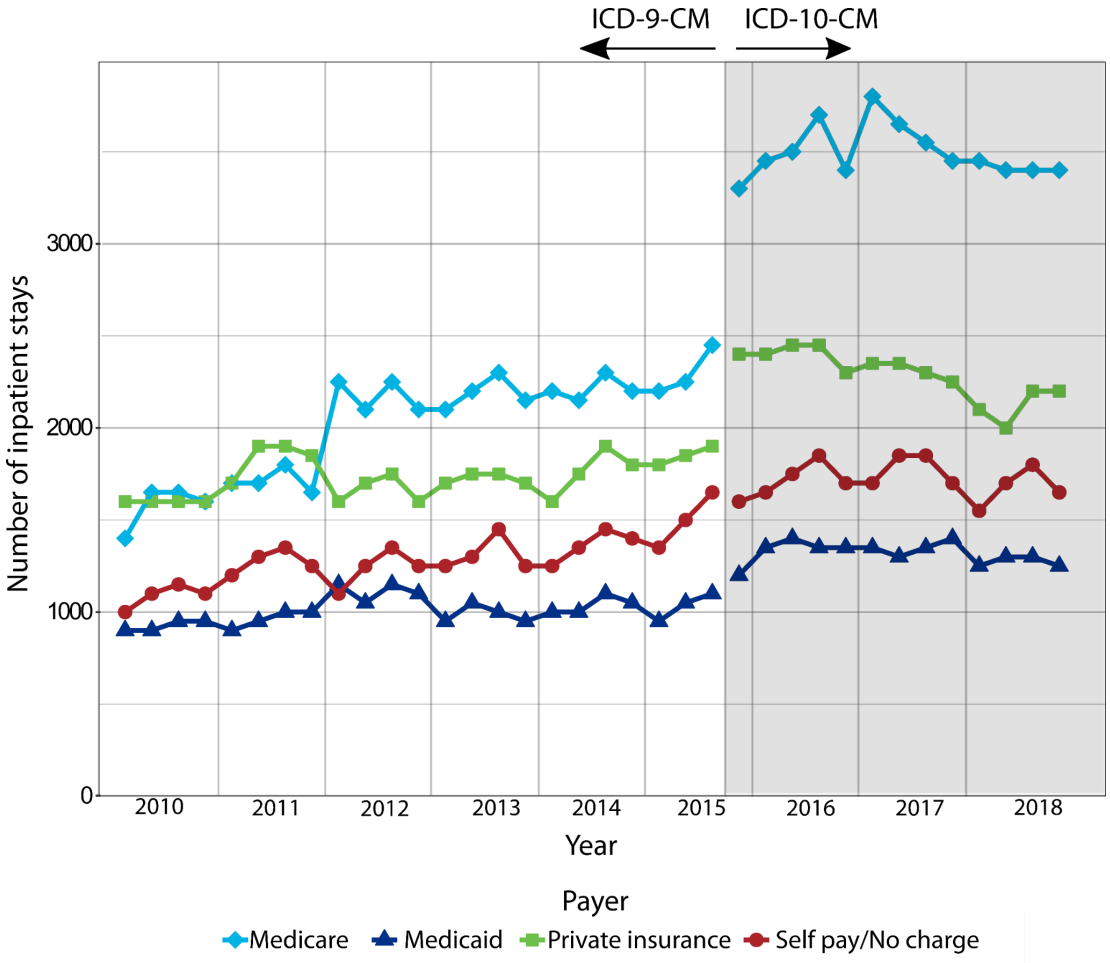
Hospitals and the Opioid Epidemic

In 2018, over 750,000 people in the U.S. received inpatient acute care for OUD.[26] **Over 10% of patients with OUD are readmitted to the hospital within 30 days of discharge**.[27] For every 20 people with OUD who are hospitalized, one will die within 12 months of discharge.[28] Hospitals spend approximately $11.3 billion annually for care related to OUD, 1% of all hospital expenditures.[29] Furthermore, people with OUD who inject substances are more likely to present to hospitals with illnesses and injuries requiring acute care compared to those who do not inject substances.[30,31]

Hospital Mortality

In-hospital mortality related to unhealthy opioid use has more than quadrupled since the opioid epidemic began, reflecting the increased potency and availability of street opioids in the US.[32]

Figure 4. Number of Opioid-Related Inpatient Stays in Texas, by Expected Payor[25]



Complications of Substance Use

Unhealthy substance use is often accompanied by many other conditions that may result in hospitalization, including infective endocarditis, osteomyelitis, epidural and spinal abscess, joint infections, cellulitis, necrotizing fasciitis, hepatitis B and C, human immunodeficiency virus (HIV), and other sexually transmitted infections. **Patients with OUD-related endocarditis are more likely to have hepatitis C, cirrhosis, and HIV and are more likely to require valve surgery, have longer lengths of stay in the hospital, and have higher hospitalization costs.**[33] The infectious complications of OUD have risen so extensively that there are now calls for infectious disease specialists to sub-specialize in addiction medicine during fellowship training.[34]

Challenges of OUD Data

While it is critical for hospitals to make programmatic decisions based on objective data, it is also important to highlight the challenges of collecting, providing, and analyzing data for people with OUD. From a hospital perspective, epidemiologic data starts at the bedside. Clinicians document diagnoses and care plans, which are then coded by specialists. These codes are transmitted to local, state, and federal authorities and used for incidence and prevalence reporting. Often, only general diagnoses such as "injection drug use" are documented. **In one study, more than half of people with OUD had incorrect ICD-10 codes in their medical records.**[35]

These trends suggest that within specific hospitals, data from the electronic health record (EHR) or claims are likely not an accurate picture of OUD-related morbidity. Therefore, it is important to engage with front-line staff to subjectively validate any site-specific data. Further, because addiction is often seen as strictly a "behavioral health" or "psychiatric" diagnosis, many patients who meet criteria for unhealthy opioid use or OUD may go unrecognized by the inpatient care team. In summary, **people who may benefit from OUD treatment, recovery, and harm reduction resources are admitted to hospitals across Texas every day - but may not be recognized as such.**

OUD-Related Mortality

True OUD-related mortality could be up to 25% higher than reported, and under-resourced counties are more likely to have misclassified deaths from overdoses.[36]

Accurate mortality data require accurate death certificates. However, Texas county resources may be insufficient to conduct thorough investigations such as autopsies or post-mortem toxicology tests. In other cases, the specific substances that led to a death were known but were not entered into the electronic tracking system.[36]

SECTION 2: UNDERSTANDING OPIOIDS

Basic Opioid Physiology

Opium is derived from poppy seeds, and its use has been documented for thousands of years.[37] The term "opioid" is used to describe substances that act at opioid receptors in the brain, whether natural, synthetic, or semisynthetic.[38] Opiates refer specifically to naturally occurring opioid agonists (described below), primarily morphine and codeine.[38] **Three primary physiologic receptors in the brain are activated by opioids: mu, kappa, and delta.**[39]

The Mu Receptor

Many of the desired and adverse effects of opioids occur at the mu receptor, including pain relief, respiratory depression, and sedation.[39] Activation of the receptor initially results in pain relief, but can lead to respiratory depression and death, particularly at higher doses.[39]

Three general classes of medications are active at the mu receptor: full agonists, partial agonists, and antagonists. **Full agonist medications** completely activate the mu receptor. The extent to which this activation occurs depends on the concentration, potency, amount of the medication administered, and patient characteristics such as physiologic tolerance.[39] Morphine, hydrocodone, hydromorphone, fentanyl, methadone, and heroin are examples of full opioid agonists.[40] **Partial agonists** activate the mu receptor, but have a ceiling above which further dose increases do not lead to further activation. An example is buprenorphine and buprenorphine/naloxone.[40] Various formulations of buprenorphine products are discussed further in Section 3. **Antagonists** attach to the mu receptor but do not activate it at all. Antagonists prevent other medications (such as the full agonists mentioned previously) from binding to the mu receptor. Examples include naloxone and naltrexone.[40]

Naloxone and naltrexone are sometimes confused and it is important to distinguish them. **Naloxone** is a rapidly-acting opioid reversal agent considered to be a rescue medication or "antidote" administered during an opioid overdose. In outpatient settings, it is most often administered as an intranasal spray or intramuscular injection by bystanders or emergency responders. In hospitals, naloxone is often administered intravenously. The effects of naloxone wear off quickly and repeat doses may be necessary. On the other hand, **naltrexone** is a long-acting antagonist used for maintenance treatment of OUD and alcohol use disorder (AUD). In addition to blocking the effects of other opioids, naltrexone reduces craving. It is administered intramuscularly about once monthly.

Full opioid agonists such as heroin (which more rapidly moves from the circulation into the brain and reaches its peak effect compared to opiates like morphine) are particularly effective in producing euphoria. For those who do experience euphoria, long-term use of opioids continues to release dopamine from the brain's reward pathway, increasing desire to use opioids.[41] At the same time, the area of the brain responsible for anxiety and fear becomes blunted.[41] Additionally, the predominant neurobiological mechanism in chronic opioid use is anti-reward. As use of opioids becomes chronic and compulsive, the person with OUD has to continue use to try to feel normal. Thus, escalating use of opioids may stimulate the desire to use more while dimming their appreciation for potential consequences of ongoing use.[41] This situation produces long-lasting structural changes in the brain among people with OUD. For these reasons, the brain disease model for addiction posits that it is a chronic neurological disease and requires enduring medical treatment.

Definitions of Opioid Use Disorder and Addiction

The Diagnostic and Statistical Manual of Mental Disorders: 5th Edition (DSM 5) defines OUD as **a pattern of opioid use within 12 months that results in loss of control, physiologic changes, and consequences including missed obligations and medical issues**.[42] Specifically, a diagnosis of OUD must include at least two of the following factors within a 12-month period.

Addiction Defined

The American Society of Addiction Medicine defines addiction as a "treatable, chronic medical disease involving complex interactions among brain circuits, genetics, the environment, and an individual's life experiences. People with addiction use substances or engage in behaviors that become compulsive and often continue despite harmful consequences. Prevention efforts and treatment approaches for addiction are generally as successful as those for other chronic diseases."[43]

Those who are dependent on opioids are not necessarily addicted; there is a distinction between addiction and physiologic dependence. **Physiologic dependence** is a state in which the sudden cessation and absence of a substance leads to a withdrawal syndrome.[44] By contrast, **tolerance** is a reduced response to a substance after repeated exposure. Over time, tolerance results in the need for escalating doses of a substance to achieve the same effect.[43] Dependence and tolerance are expected physiologic outcomes of certain classes of medications, including opioids. Therefore, patients who are prescribed opioid medications for analgesia may exhibit withdrawal and tolerance, but would not necessarily be considered to have an OUD unless other criteria are present.

Figure 5. DSM-5 Criteria for OUD

The DSM-5 describes opioid use disorder as a problematic pattern of opioid use leading to problems or distress, with **at least two of the following occurring within a 12-month period**:

1. Opioids are often taken in larger amounts or over a longer period of time than intended.
2. Persistent desire or unsuccessful efforts to cut down or control opioid use.
3. Spending a great deal of time obtaining, using, recovering from the effect of the opioid.
4. Craving, or a strong desire or urge to use opioids.
5. Problems fulfilling obligations at work, school or home.
6. Continued opioid use despite having recurring social or interpersonal problems.
7. Giving up or reducing activities because of opioid use.
8. Using opioids in physically hazardous situations.
9. Continued opioid use despite ongoing physical or psychological problems likely to have been caused or worsened by opioids.
10. Tolerance (i.e., need for increased amounts or diminished effect with continued use of the same amount)
11. Experiencing withdrawal (opioid withdrawal syndrome) or taking opioids (or a closely related substance) to relieve or avoid withdrawal symptoms.

From "Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition," by American Psychiatric Association, 2013. Copyright 2013 American Psychiatric Association.

These advancements in our understanding of addiction have not been fully appreciated by the healthcare community, sometimes leading to decreased opportunities for long-term remission and recovery.

SECTION 3: HOSPITALS AS ACCESS POINTS FOR TREATMENT AND RECOVERY

Hospital-Based Treatment Initiation

Hospitalization is an ideal opportunity to offer patients with OUD access to treatment. There are over 6,000 hospitals in the United States.[45] The majority of patients with previous substance use before hospitalization will return to use after discharge if treatment has not been initiated.[46] An estimated 20% of hospitalized patients may have a substance use disorder (SUD), and patients with SUDs are nearly twice as likely to be readmitted to the hospital – even when adjusted for age, sex, presence of depression, insurance type, homelessness, and Charlson co-morbidity score.[49]

"Detox" is Ineffective

Withdrawal management alone is not effective and may lead to overdose and death. Among patients with a history of heroin use who undergo only withdrawal management with medications such as clonidine, without other MOUD, 80% will return to use within 30 days.[46]

Those undergoing withdrawal management during hospitalization may lose their tolerance to opioids and are at significantly elevated risk of overdose if they resume use of opioids after discharge.[47] Buprenorphine initiation in the hospital leads to increased completion of inpatient medical therapies and ultimate transition to outpatient substance use treatment.[48]

Patients with OUD may experience hospital readmission rates as high as 20% at 30 days and greater than 30% at 90 days.[50] However, patients receiving buprenorphine therapy are over 50% less likely to be readmitted within 30 days, and over 40% less likely to be readmitted within 90 days compared to those not receiving buprenorphine therapy.[50] Further, patients with OUD who are engaged in buprenorphine therapy are 70% less likely to be admitted to the hospital for any cause than those who are not.[51]

Up to 16% of patients with OUD self-discharge from the hospital.[27,58–60] Such patients may leave the hospital against medical advice because they are stigmatized by hospital staff, receive inadequate pain control, have insufficient management of withdrawal symptoms, or experience hospital security restrictions.[56,57] Studies have shown that up to 16% of patients with OUD self-discharge from the hospital.

Hospitalization can also be a **reachable and treatable moment** for patients with OUD. Many hospitals across the country provide pathways for initiating buprenorphine during

hospitalization.[48,53–55] These patients often recognize substance use as a major reason for hospitalization, see hospitalization as an opportunity to seek treatment, and move to a higher degree of change readiness during hospitalization.[52] Predictors of improved readiness to change include concerns about the need for repeat hospitalization or overall physical health, and being "tired of using" substances.[52]

The SHOUT Texas approach does not necessarily promote hospitals as primary treatment centers where ongoing and longitudinal addiction care takes place. Rather, we recognize that patients regularly present to acute care hospitals with medical emergencies and acute crises that hospitals are designed, well-equipped, and extremely skilled at addressing. Addiction often presents as an acute crisis and its consequences are often medical emergencies. Therefore, hospitals should be able to identify SUD, initiate appropriate treatment, and place referrals to ongoing treatment after discharge. This approach to care for hospitalized patients is the same as other common diagnoses such as diabetes, hypertension, or heart failure.

Medications for the Treatment of Opioid Use Disorder

There are three FDA-approved medications for OUD: buprenorphine, methadone, and extended-release naltrexone. These medications have traditionally been referred to collectively as "medication-assisted treatment" or "MAT". However, this terminology is lacking as pharmacotherapy is central—not adjunctive—to effective treatment, and therefore we use the term **Medications for Opioid Use Disorder (MOUD)** here to describe the use of specific pharmacologic therapies to provide OUD treatment.

Benefits of Medications for Opioid Use Disorder

MOUD reduce patient mortality related to OUD; decrease the rate of opioid overdoses, risk of life-threatening infections associated with intravenous opioid use, justice involvement related to opioid use, and syringe sharing. MOUD also increase the length of time spent actively participating in treatment.[61–66]

Buprenorphine and methadone provide relief of withdrawal symptoms and suppress opioid cravings during and after withdrawal to ultimately promote patient engagement and disease remission. While buprenorphine may be the first-line agent for many hospitalized patients, methadone may be more efficacious for certain patients. Ultimately, selection of a pharmacotherapy for OUD depends on provider experience, regional availability of outpatient support for continuity of care, payor, and most importantly, patient preference. Many patients with OUD have other co-occurring SUD that buprenorphine and methadone do not address, such as stimulant, sedative-hypnotic, alcohol, or tobacco use disorders.

Buprenorphine is a partial agonist at the mu opioid receptor, has low intrinsic activity at the site, and is an antagonist at the kappa opioid receptor. This combination of properties allows buprenorphine to control cravings and treat withdrawal without symptoms of euphoria seen with full agonists. It also provides a protective "ceiling effect" for respiratory depression (see Figure 6), significantly lowering the risk of a fatal overdose. As the dose is increased, they typically do not result in increased action or adverse effects.[67] Another benefit of buprenorphine is that it is long-acting - most patients need to take it only once a day to achieve its effects.

While buprenorphine has low efficacy at the mu opioid receptor, it displays a high affinity at the site. In fact, it exhibits some of the highest known affinities for the receptor, meaning it can displace other full opioid agonists such as heroin from the receptor, similar to naloxone. Thus, if a patient uses any other opioids while simultaneously using buprenorphine, those opioids may have less effect.[68]

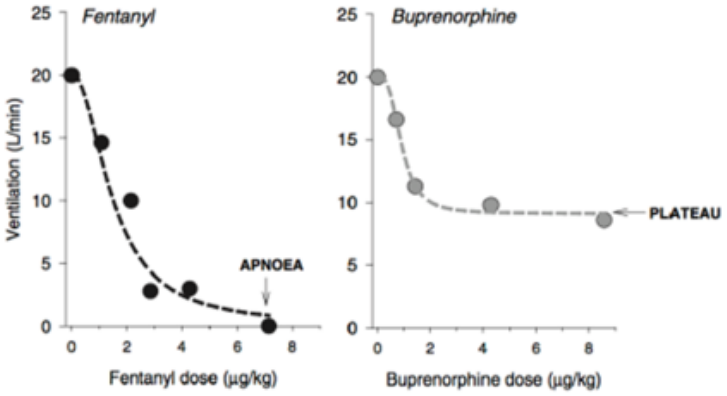
Buprenorphine reduces opioid cravings and supports long-term OUD recovery. Buprenorphine is more effective at treating withdrawal symptoms than many of the medications currently used in hospitals, including clonidine.[69–71] Buprenorphine is manufactured in two forms - a buprenorphine-naloxone combination and a buprenorphine monotherapy. In general, buprenorphine monotherapy is reserved for use in pregnancy.[67]

Number Needed to Treat

Only two patients need to be treated with buprenorphine to prevent ongoing use of non-prescription opioids in one patient - a much lower number needed to treat than other common chronic diseases.[72-73]

Patients should be prescribed buprenorphine-naloxone unless there are extenuating circumstances. It is possible, although uncommon, for buprenorphine to provide limited euphoria when used intravenously. Therefore, when used for the treatment of OUD, buprenorphine is typically prescribed as a combination product of buprenorphine and naloxone which is administered buccally or sublingually. Naloxone in the buprenorphine-naloxone product has minimal buccal, sublingual, and gastrointestinal absorption. However, if a patient uses the buprenorphine-naloxone product intravenously, the naloxone component blocks buprenorphine's ability to act on the brain's mu receptors and therefore limits, if not eliminates, euphoria. The naloxone component of buprenorphine-naloxone does not precipitate withdrawal due to its poor absorption when taken orally in contrast to its rapid action when absorbed intranasally or intravenously.

Figure 6. Respiratory Effects of Intravenous Buprenorphine and Fentanyl in Humans and Rats



Source: A. Dahan et al., "Comparison of the Respiratory Effects of Intravenous Buprenorphine and Fentanyl in Humans and Rats," *British Journal of Anaesthesia* 94, no. 6 (June 1, 2005): 825-34, doi:10.1093/bja/aei145.

Methadone is a full agonist opioid. It completely binds to and fully activates the mu receptor.[67] Much of the medication is stored in fat cells, which results in an extended half-life of up to 60 hours, with wider inter-individual pharmacokinetics. Methadone's full agonist activity contributes to its efficacy as a treatment for OUD, but also leads to its potentially dangerous adverse effect profile.[67] Outpatient provision of methadone is heavily regulated in the United States and is only available in hospitals and outpatient opioid treatment programs. Methadone must be tapered when discontinuation is desired. Buprenorphine and methadone are on the World Health Organization's list of essential medicines.[74] SHOUT Texas is developing additional resources for implementing clinical protocols for methadone as part of acute hospitalization; this guide focuses primarily on using buprenorphine to treat OUD.

Naltrexone is an antagonist at the mu receptor. It blocks the effects of opioids and is thought to reduce cravings through remodeling of molecular neurobiology.[75] The oral formulation of naltrexone is not recommended to treat OUD because of poor treatment adherence and increased risk of overdose that occurs with loss of tolerance.[67] Extended-release naltrexone administered as a monthly intramuscular injection is as effective as buprenorphine in reducing cravings and opioid misuse. However, it has not yet demonstrated reductions in overdose, infectious complications, or mortality. Naltrexone is generally considered a second-line treatment given its limited efficacy data and high cost.[76]

MOUD as the Standard of Care

In its landmark document, *Medications for Opioid Use Disorder Save Lives*, the National Academy of Medicine reported that "medication-based treatment is effective across all treatment settings studied to date. **Withholding or failing to have available all classes of FDA-approved medication for the treatment of OUD in any care or criminal justice setting is denying appropriate medical treatment**."[24]

Precipitated Withdrawal and Transitioning between Treatments

Due to its strong affinity for the mu opioid receptor, buprenorphine must be initiated at the appropriate time to avoid precipitated withdrawal. Thus, **a patient should be experiencing mild to moderate opioid withdrawal before buprenorphine is administered**. If administered too early for a patient with recent intake of a full agonist, existing opioids occupying the mu receptor may be immediately and fully displaced. This will exacerbate withdrawal syndrome because of net loss of opioid agonism. While not considered directly dangerous for most patients, it is extremely uncomfortable and reduces the likelihood the patient will succeed with buprenorphine or try buprenorphine again in the future. Moreover, some patients may immediately return to their original opioid use patterns. If they have lost tolerance, this resumption may result in accidental overdose and death.

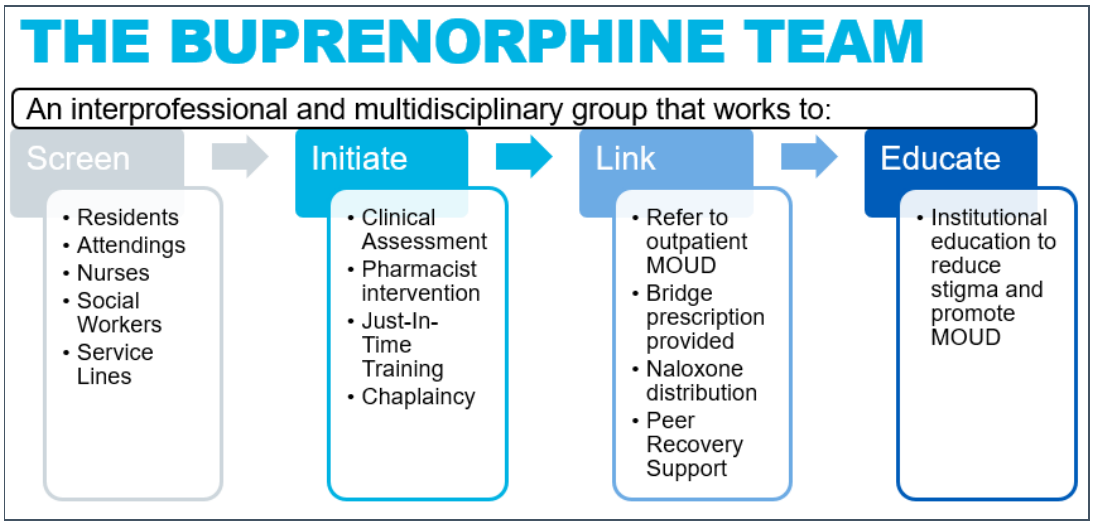
Importantly, **precipitated withdrawal is uncommon and easily mitigated** when buprenorphine is administered in appropriate clinical settings.[75] Precipitated withdrawal is not caused by the naloxone component of buprenorphine-naloxone combination product. Transitioning from methadone to buprenorphine is more technically complicated because of its long half-life. However, micro-dosing buprenorphine during hospitalization is feasible as a way to transition from methadone to maintenance buprenorphine.[77–81]

SECTION 4: CLINICAL APPLICATION

Application to Inpatient Settings

The **Buprenorphine Team ("B-Team")** at Dell Seton Medical Center and Dell Medical School at The University of Texas at Austin is an interprofessional and multidisciplinary team. They work to identify inpatients with OUD, initiate evidence-based OUD treatment with buprenorphine, provide a supportive environment during hospitalization, establish relationships in the community that facilitate linkages to care after discharge, and work to provide education and stigma reduction of SUD throughout the hospital (see Figure 7).

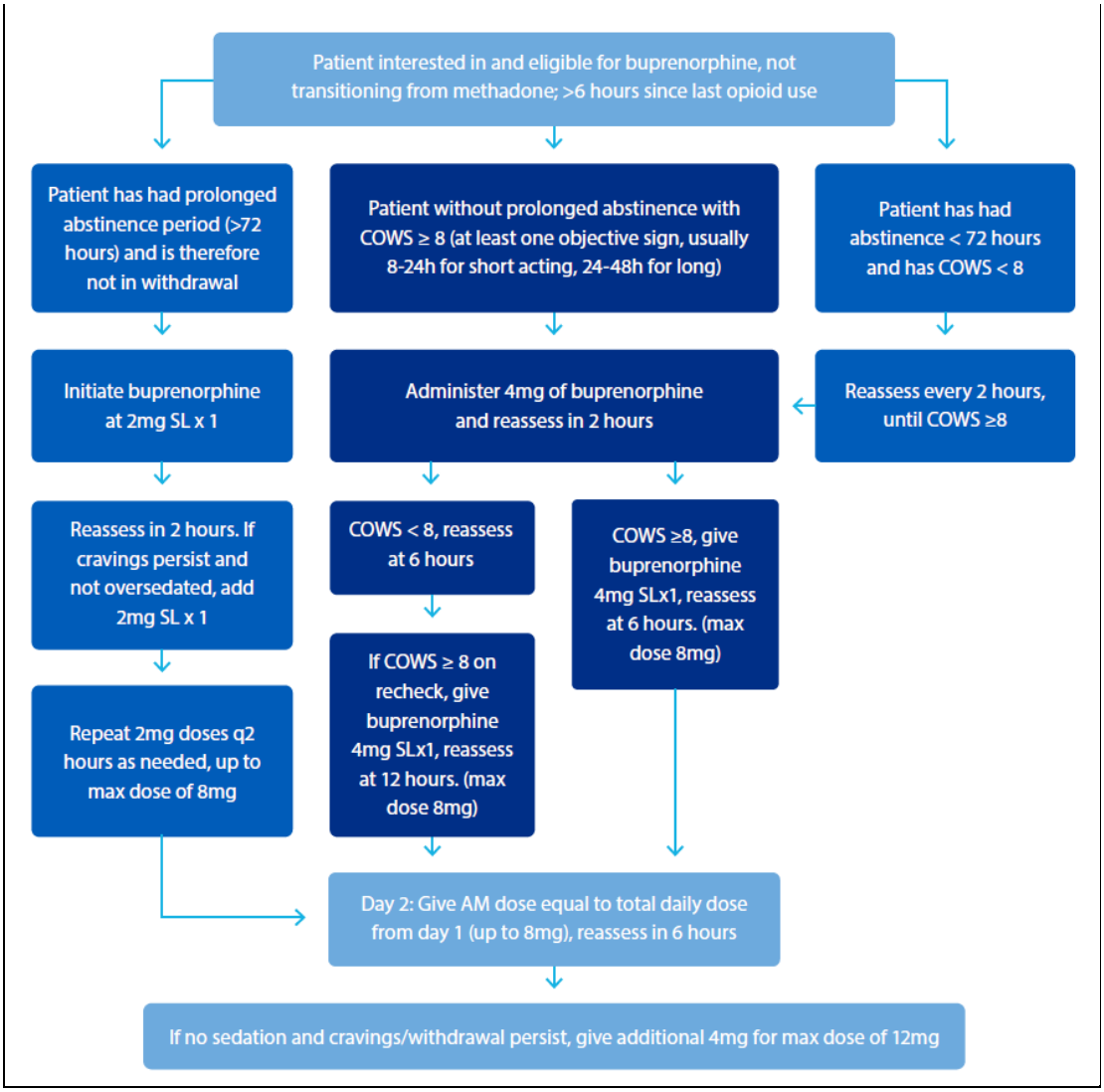
Figure 7. The Buprenorphine Team (B-Team) Model



The B-Team works to empower members of the hospital-based care team to recognize patients who may have OUD. This work includes residents, attendings, nurses, social workers, and pharmacists. It crosses all service lines – including internal medicine, general surgery, and women's health – with the goal of redesigning the standard of care so that a dedicated OUD treatment team is eventually obsolete.

For patients who may be interested in buprenorphine therapy, a clinical assessment is performed, primarily the **Clinical Opioid Withdrawal Scale (COWS)**. COWS shows if the patient is at an appropriate level of withdrawal for buprenorphine initiation. If the COWS score is greater than 8, a nurse administers the first dose of buprenorphine therapy. The full protocol is shown in Figure 8.

Figure 8. Buprenorphine Induction Algorithm



The patient receives psychosocial support for the rest of his or her hospitalization, including a staff chaplain. The hospital has built connections with an outpatient clinic that offers buprenorphine, and the patient's first follow-up appointment is scheduled there before hospital discharge. A provider with a buprenorphine x-waiver then prescribes the amount of buprenorphine needed to bridge the patient from hospital discharge until the follow-up appointment at the clinic. Patients are also prescribed naloxone and educated about its use in case of an accidental opioid overdose. The team also provides interprofessional education around OUD and works to reduce stigma through teaching of appropriate language and incorporating people with lived experience.

The B-Team developed a consultative-type model with the goal of broad dissemination and universal adoption of buprenorphine treatment. Just as insulin is an evidence-based medication for diabetes, buprenorphine is an evidence-based medication for OUD. As prescribers become increasingly comfortable and educated about buprenorphine, they will use it in their practice independently. **Importantly, buprenorphine is safe, evidence-based, and cost-effective.**

Initiating Buprenorphine in the Hospital Setting

Buprenorphine is easily started in the hospital setting (see Figure 8). The COWS assessment is similar to the Clinical Institute Withdrawal Assessment scale used to treat alcohol withdrawal, in the sense that a subjective / objective scale is used to determine severity of the withdrawal syndrome, which then dictates the treatment modality. Withdrawal symptoms begin as long-standing opioids begin their natural physiologic disassociation from the mu receptors. The more rapidly the disassociation (such as with short-acting opioids), the more severe the withdrawal symptoms can be. Due to buprenorphine's high affinity and binding capacity for the mu receptors, it is theoretically possible to cause a rapid disassociation from the mu receptors and therefore precipitate a severe withdrawal. A COWS score > 8 is felt to greatly reduce the likelihood of a precipitated withdrawal, especially if coupled with lower starting doses of ~4 mg or less.

Avoiding Precipitated Withdrawal

The primary reason for applying the COWS assessment to buprenorphine initiation is the avoidance of a precipitated withdrawal. While this is rarely directly life-threatening, it is extremely uncomfortable for the patient, alienates the patient-provider relationship, and perhaps most importantly, reduces the likelihood the patient will succeed with buprenorphine or try buprenorphine again in the future.

In the algorithm above, the left side represents a patient who may never achieve a COWS > 8 due to infrequent or low-dose use of opioids in the community. For example, a patient may state they use illicit opioids every 3-4 days in low doses, but are concerned about escalating substance use. Because this patient will not experience withdrawal symptoms, buprenorphine can be started immediately per the algorithm.

The right side of the algorithm represents a patient who will likely experience withdrawal symptoms, but has not yet. This patient should have repeated COWS assessments performed until the withdrawal symptoms are present (similar to the CIWA protocol). Once the withdrawal symptoms begin, the algorithm in the middle is initiated. **This titration process is similar to what would be expected for other medications such as insulin or gabapentin.** The total daily dose on the second day may be administered as a once-daily

dose. For example, if three 4 mg sublingual films were provided on the first day, then on the second day, the patient should receive 12 mg in the morning (three films x 4 mg each = 12 mg total daily dose.)

Full suppression of craving is typically achieved with buprenorphine doses of at least 16 mg per day. However, 24 mg or more may be needed in some cases, including large exposures to fentanyl. Depending on the length of hospital stay, **care teams should be comfortable and empowered to increase the daily buprenorphine dose as needed to control cravings.** The maximum daily dose per FDA guidelines is 32mg.

Maintenance Dosing

The ideal maintenance dose is one that controls symptoms of opioid withdrawal, reduces cravings for opioids, bolsters emotional health, re-balances dopamine pathways in the brain, strengthens coping mechanisms against relapse triggers, and facilitates patient engagement in activities that promote recovery.[82]

Harm Reduction

Harm reduction is defined as practical strategies and ideas to reduce negative consequences of substance use.[83] The Harm Reduction Coalition states the principles of harm reduction include: "Understanding for better and/or worse that licit and illicit drug use is part of our world and chooses to work to minimize its harmful effects rather than simply ignore or condemn them... acknowledging that some ways of using substances are clearly safer than others... [and] establishing that quality of individual and community life and well-being–not necessarily cessation of all drug use–as the criteria for successful interventions and policies."[83] Harm reduction incorporates efforts to reduce the risk of harm among people who continue to use substances. Abstinence is not the only possible goal.[84]

Harm reduction should be applied to the practice of medicine generally, and especially in inpatient settings[85] **Decreasing stigma is a foundational approach to reducing harm in the acute care setting.** Strategies include promoting appropriate patient-centered language and involving individuals with lived experience in care delivery and on administrative committees. Hospitals should develop a standard of care for how to approach a discharge against medical advice to avoid practice variability and poor follow-up. Strategies could include writing a bridge prescription for buprenorphine, providing oral antibiotics, and facilitating follow-up post-discharge.[86] Similar policies should be developed for optimal use and discontinuation of peripherally inserted central venous catheter (PICC) lines.

A Note on Treatment Contracts:
The use of treatment contracts should be discouraged. There is a lack of evidence to support their use and they can harm the development of trust and important clinical relationships.[87]

One harm reduction approach with far-reaching effects in and outside of hospitals is the distribution and accessibility of naloxone accompanied by overdose prevention and response education (see Figure 9). Naloxone is an opioid receptor antagonist that binds to all subtypes of the opioid receptor and quickly displaces existing opioids while preventing new opioid molecules from binding. Naloxone immediately reverses the effects of opioids and is the primary antidote for an overdose.[88] **Naloxone distribution programs lead to decreased mortality.** Prescribing naloxone for appropriate patients is recommended by the World Health Organization, U.S. Food and Drug Administration, and the U.S. Department of Health and Human Services.[89–91]

Figure 9. Target Patients for Naloxone Distribution

SECTION 5: BUILDING A PROGRAM

Checklist For Developing Hospital-Based MOUD Processes

While individual clinicians may commit to providing MOUD, it is preferable to develop hospital-wide processes that support consistent, efficient and effective care delivery. The checklist in Table 1 provides guidance on establishing such processes for hospitalized patients with OUD.

Table 1. Checklist for Hospital-Based MOUD

Infrastructure Development

- ☐ Designate a project lead
- ☐ Engage primary stakeholders
- ☐ Explore similar programs at the local, regional, state, or national level
- ☐ Determine if/how offering MOUD as part of hospitalization aligns with organizational vision, mission, and goals
- ☐ Create milestones for rolling out the program, including metrics to track success
- ☐ Review and update institutional policies related to MOUD administration

Clinical Application

- ☐ Add buprenorphine and methadone to hospital formulary
- ☐ Engage members of the interprofessional team
- ☐ Build order sets to ease ordering of medications
- ☐ Develop guidelines for
  - ☐ Initiating buprenorphine and methadone, including on weekends and nights
  - ☐ Notification parameters for nursing orders
  - ☐ Under what circumstances (if any) a patient might be transferred to the ICU
  - ☐ How orders will be entered and saved in the electronic health record (EHR)

Education

- ☐ Determine clinical role and learning goals for trainees, if applicable
- ☐ Develop or decide on education for buprenorphine for various disciplines
- ☐ Designate and train those responsible for administering the COWS assessment
- ☐ Educate providers and staff about the use of non-stigmatizing language

Revenue Cycle/Costs

- ☐ Ensure providers know the proper documentation for initiation of MOUD for billing
- ☐ Calculate potential costs of starting OUD treatment during hospitalization
- ☐ Discuss if cost of bridge buprenorphine for unfunded patients will be covered by the hospital

Harm Reduction

- ☐ Develop a plan for implementing harm reduction strategies

- ☐ Develop a protocol to discharge all appropriate patients with naloxone
- ☐ Develop patient education materials

Discharge Planning and Care Coordination

- ☐ Establish protocols for discharge
- ☐ Ensure there are no barriers that delay the start or continuation of MOUD treatment
- ☐ Explore capacity for outpatient MOUD treatment locally and develop relationships with outpatient providers serving your patient population(s)
- ☐ Locate resources for reliable transportation to facilitate treatment access post-discharge
- ☐ Check that all local retail pharmacies stock buprenorphine

Metrics and Evaluation

Metrics should capture multiple components of MOUD, from screening and treatment to post-discharge follow-up. These can help to document the benefits of MOUD and support a return on investment for data-driven, quality care. Table 2 is adapted from the American Hospital Association and includes suggested measures to track regarding hospital-based opioid treatment. Hospitals are encouraged to choose those most relevant to their processes and goals. **For additional details regarding metrics and evaluation, refer to the American Hospital Association's Stem the Tide: Opioid Stewardship Measurement Implementation Guide.**[92]

Table 2. Program Evaluation Metrics for Consideration

Measure: Naloxone prescribed for opioid overdoses or high-risk patients **Numerator:** Number of naloxone prescriptions **Denominator:** Number of patients presenting with overdose, OUD, or opioid morphine milligram equivalents (MME) >50 **Desired Quality Improvement Trend:** Increase in naloxone prescriptions **Notes:** May be challenging to track if a hospital lacks its own retail pharmacy
Measure: Screening for OUD/SUD **Numerator:** Number of risk assessments documented in EHR, percentage of patients screened **Denominator:** Number of inpatient admissions **Desired Quality Improvement Trend:** Increase in number of screens **Alignment with Federal Quality or Accountability Programs (2020):** Merit-Based Incentive Payment System Quality Measure (MIPS QM)
Measure: Identification and planning for patients with OUD upon admission **Numerator:** Number of plans documented **Denominator:** Number of patients with OUD diagnosis **Desired Quality Improvement Trend:** Increase in number of documented plans **Alignment with Federal Quality or Accountability Programs (2020):** Medicaid Adult Core Set (ACS)

Measure: Number of referrals for OUD treatment **Numerator:** Number of referrals ordered **Denominator:** Number of patients identified with untreated OUD **Desired Quality Improvement Trend:** Increase in referrals **Alignment with Federal Quality or Accountability Programs (2020):** Medicaid ACS, The Joint Commission (TJC)
Measure: Completed/successful referrals for OUD treatment **Numerator:** Number of referrals completed **Denominator:** Number of referrals ordered **Desired Quality Improvement Trend:** Increase in number of completed referrals **Alignment with Federal Quality or Accountability Programs (2020):** Medicaid ACS, TJC
Measure: New patients started on OUD treatment **Numerator:** OUD initiated **Denominator:** Number of patients identified with OUD **Desired Quality Improvement Trend:** Increase in number of new starts **Alignment with Federal Quality or Accountability Programs (2020):** Medicaid ACS
Measure: Screening patients with OUD for infectious diseases (e.g., hepatitis B/C, HIV) **Numerator:** Percentage of patients screened **Denominator:** Number of patients with OUD **Desired Quality Improvement Trend:** Increase in number of screens
Measure: Number of referred patients still in treatment 30 days later **Numerator:** Number of patients still in active treatment program **Denominator:** Number of treatment referrals completed **Desired Quality Improvement Trend:** Increase in number of patients still engaged in treatment **Alignment with Federal Quality or Accountability Programs (2020):** Medicaid ACS
Measure: Engagement in outpatient treatment program for 12 months or longer **Numerator:** Number of patients engaged in treatment **Denominator:** Number of treatment referrals **Desired Quality Improvement Trend:** Increase in number of patients engaging in OUD treatment **Alignment with Federal Quality or Accountability Programs (2020):** MIPS QM
Measure: Percent readmissions among patients started on MOUD **Numerator:** Number of patients admitted for any cause within 90 days after initial inpatient MOUD **Denominator:** Number of individuals started on inpatient MOUD **Desired Quality Improvement Trend:** Decrease in number of readmitted patients who were started on MOUD **Note:** Although not exclusively for OUD, reducing readmissions for conditions related to OUD, aligns with several federal and local quality incentive programs

Potential Barriers to Hospital-Based MOUD and How to Overcome Them

Barrier 1: Limited connections to treatment networks outside of hospitals

While access to outpatient treatment with buprenorphine may be more widely available than methadone, discharge planning should facilitate patients' transfer to an office-based opioid treatment (OBOT) provider or opioid treatment program (OTP). Hospital social workers and recovery specialists, where available, can help ensure a seamless transition of care. Hospitals should also consider funding a full-time, part-time or per diem position that supports this work.

Substance Use Navigators (SUNs)

The CA Bridge program has adopted SUNs to enhance uptake of MOUD. Consult the program's website for additional information on the roles of SUNs and how hospitals might be able to fund them.

Barrier 2: Restrictive or outdated institutional opioid policies

Clinical champions should act as the experts on treatment for OUD, including updating policies and guiding hospital decision-making around MOUD.

Barrier 3: Lack of 24/7 service leads to missing patients in need

Creating a hospital culture that embraces MOUD and trains all clinical staff on buprenorphine prescribing can help reduce the numbers of patients with SUD who are missed due to the timing of their admission. Ultimately, introduction of MOUD in the hospital, using patient-first and recovery-centered language and promoting harm reduction, must be the standard of care in hospitals.

Barrier 4: Patients have difficulty accessing transportation to MOUD treatment

For patients who are initiated on buprenorphine during their hospital stay, having X-waivered hospitalists is a key step in bridging the gap between discharge and access to outpatient treatment. If patients have transportation difficulties, connecting them to mobile health units or outpatient treatment via telehealth can also help reduce the need to travel significant distances to treatment. Advocating for local outpatient physicians to obtain X-waivers can allow patients to access treatment at their regular primary care provider's office or any local medical facility. Even for uninsured patients, transportation can be arranged (depending on the county) via the American Public Transportation Association.

Virtual Appointments for MOUD

As a result of changes to federal regulations related to COVID-19, **initiation and continuity of treatment for OUD may be conducted virtually.** Whether these changes in

regulation will endure is unknown, but using technology to widen access to outpatient treatment for OUD is of clear benefit to patients.

Common Myths about MOUD

Myth 1: "You are just trading one addiction for another. There is no benefit of MOUD."
Buprenorphine and methadone cut overdose death rates in half while decreasing substance use, decreasing HIV and hepatitis C transmission, and improving patient retention in treatment.[24]

The Truth About Buprenorphine:
It confers a very low risk of addiction, due to the way the medication works in the brain.[24]

Myth 2: "Providing 'detox' for a patient is good enough."
Withdrawal management is not the evidence-based best practice for patients with opioid withdrawal syndrome and should only be undertaken in circumstances where the benefits outweigh the increased risk of overdose. Medication-free treatment is not as effective as medications for OUD in preventing deaths. Recurrences of use and deaths are common as patients try to maintain abstinence, since strong cravings persist for years after last use.[93]

Myth 3: "12-step programs on their own are the standard of care for patients with OUD."
Twelve-step and other abstinence-based approaches may be helpful for many SUDs, but they only succeed in 10% to 15% of people with OUD when used alone.[24]

The Truth About MOUD:
It is effective for 50% to 80% of patients with OUD.[93]

Myth 4: "Buprenorphine is just a way to get high or make money."
Most people who take buprenorphine without a prescription are taking it to avoid withdrawal or access treatment - not to get "high".[94] Because buprenorphine is a long-acting opioid receptor partial agonist, people are unlikely to get any euphoric effects from it. When sold on the street, it is most commonly used to treat withdrawal symptoms in patients with low access to medical treatment.[94] People who have used buprenorphine not prescribed to them are more likely to stay in treatment once they start treatment.[95]

Myth 5: "You are encouraging people to use substances since they can rescue themselves from an overdose with naloxone."
Increased access to naloxone reduces mortality and does not increase substance use.[96]

More myths and Their Truths:
Additional myths and truths are available from Providers Clinical Support System.

Acute Pain Management

Pain management for hospitalized patients is complex and compounded by a diagnosis of OUD, which can be accompanied by hyperalgesia. **Non-opioid multimodal approaches to acute pain should be the first line of treatment.** For patients in buprenorphine therapy who need more analgesia, split doses or additional doses may be beneficial. For severe pain, the use of high-affinity full agonist opioids such as fentanyl or hydromorphone can be considered as well.

More Resources for Acute Pain Management:
Detailed recommendations for pain management in patients with OUD are in section 3F of the Substance Abuse and Mental Health Services Administration (SAMHSA) TIP 63: Medications for Opioid Use Disorder treatment improvement protocol.

Maintaining Patients on MOUD During Hospitalization

Patients currently receiving MOUD who present to the ED or are hospitalized should be maintained on their medication in virtually every circumstance, including acute pain, planned surgical intervention, and pregnancy or labor and delivery.[36-39] However, clinicians should be aware of important medication interactions between methadone and buprenorphine and other medications

Connecting to Outpatient Treatment

For patients to receive the treatment they need after discharge, they must be connected to local outpatient buprenorphine and methadone providers. Patients initiated on buprenorphine must follow up with an outpatient provider who is appropriately trained and qualified. By definition, these practices are considered OBOT facilities. The referral institution should confirm that the provider has expertise in prescribing buprenorphine. Many outpatient addiction treatment facilities offer only naltrexone and/or inappropriately enforce buprenorphine tapers, and therefore cannot care for patients initiated on buprenorphine in an inpatient setting. Considerations for connecting with outpatient treatment facilities are listed in Table 3. A phone call or visit to potential referral sites by a social worker or hospitalist should confirm that the site offers buprenorphine treatment and facilitates consistent and effective hand-offs of care.

Patients initiated on methadone require care from an OTP. These may offer more comprehensive care, including counseling, although counseling can sometimes be found in a co-located primary care environment as well. Many patients, on methadone or buprenorphine, have positive outcomes in this primary care/OBOT environment; however, some require the additional structure and resources of opioid treatment programs. For more information on the differences between OBOT and OTP models, please see Section 6 of this document. Treatment locators are available online at the SAMHSA Opioid Treatment Program Directory.

Table 3. Considerations for Connecting with Any Outpatient Treatment Facility

What medications and services does the outpatient clinic provide?

- What is the typical wait time before the initial appointment?
- What is the best way to connect patients that are being discharged to this outpatient clinic?
- How does the clinic handle the referral process? Do they want clinicals faxed, emailed, etc.? What is the release of information process?
- What are the requirements of the program and what can the patient expect? Is buprenorphine continued indefinitely, or are there enforced timelines and tapering requirements?
- What forms of insurance does the clinic accept?
- What type of appointment flexibility does the clinic offer? Does the clinic offer telehealth visits? How long is the intake appointment (typically two or more hours) and subsequent appointments? What days and times of day are appointments offered?
- Can patients be referred after hours?

Additional Considerations for Connecting to Outpatient Treatment

Patients with complex medical, behavioral health or social needs may benefit from specialized care or care from a multidisciplinary team. Ideally, patients will be transitioned to co-located outpatient treatment facilities capable of treating OUD and providing care for comorbidities. Additional considerations for complex or specialized patient populations are listed in Table 4.

Table 4. Additional Considerations for Special Patient Populations

Infectious disease: If a patient also has an infectious disease, it may be in that person's best interest to be connected with an infectious disease clinic that also provides addiction medicine services. Ideally, patients can receive all of their treatment in one place, including ongoing parenteral antibiotics and treatment for HIV, hepatitis B, and

hepatitis C.
Pregnancy: Some women's clinics may have specialized providers who treat OUD and offer obstetric-gynecologic services.
Behavioral health: Some community behavioral health agencies have MOUD capabilities.
Homelessness: Some day-shelters have drop-in services by MOUD providers that may be convenient for patients.

SECTION 6: REGULATORY ENVIRONMENT AND TEXAS POLICY LANDSCAPE

Treatment for OUD, particularly as patients are discharged from hospitals, can be subject to multiple federal and state regulations. This section is designed to provide information on laws, regulations, and insurance coverage regarding MOUD treatment in the hospital setting specific to the state of Texas. Further, we describe regulations for when methadone and buprenorphine are used for OUD indication, not pain.

General information on laws, regulations and advocacy work relating to addiction prevention, treatment, remission, and recovery can be found at the American Society of Addiction Medicine (ASAM) advocacy website.

Policy Information Specific to the State of Texas:
Texas Hospital Association
Meadows Mental Health Policy Institute
Hogg Foundation for Mental Health

OUD Treatment in Inpatient Acute Care Settings

There are currently no federal or state regulations that restrict administration of methadone, buprenorphine, or naltrexone for a hospitalized patient. Any clinician with hospital ordering privileges may initiate treatment for OUD in a hospital setting without special certification. However, hospital-based clinicians who wish to discharge patients with a buprenorphine prescription must follow federal and state regulations.

- A clinician cannot prescribe methadone to a patient who is being discharged
- A clinician who wishes to prescribe buprenorphine to be filled at a retail pharmacy must have an X-waiver. However, a prescriber does not need an X-waiver to prescribe buprenorphine for pain.
- Any clinician licensed to prescribe medications should write a discharge prescription for naltrexone.

Information regarding provision of MOUD including methadone, buprenorphine, and naltrexone in inpatient and outpatient settings is included in Table 5.

Table 5. Requirements for Provision of MOUD in Inpatient and Outpatient Settings

	Methadone	Buprenorphine	Naltrexone
For OUD Treatment in an Inpatient Setting			
Allowable clinician actions	Use as inpatient treatment	Use as an inpatient treatment; X-waivered clinicians can write a discharge prescription[a]	Use as an inpatient medication; any clinician can write a prescription but affordability is a challenge.
Restrictions on prescriptions	Prescriptions may not be issued	Written, electronic, or oral (phone) prescriptions permitted; prescriptions may be refilled, subject to certain limitations[a]	Written, electronic, or oral (phone) prescriptions permitted; no limitations on refills. Oral naltrexone not indicated for OUD treatment.
Who may prescribe, administer, or dispense (as permitted)	Any clinician that has hospital ordering privileges	Any clinician that has hospital ordering privileges	Any clinician that has hospital ordering privileges
Limitations on number of patients	None	30 patients concurrently (most hospitalists will not reach this capacity.)	None
For OUD Treatment in an Outpatient Setting			
Allowable clinician actions	Administer[b] and dispense[c]	Dispense and prescribe[d]	Prescribe and administer
Location	Only in opioid treatment programs (OTPs)[e]	Any outpatient settings, such as a doctor's office, OTP, or community health center	Any outpatient settings, such as a doctor's office, OTP or community health center
Restrictions on prescriptions	Prescriptions may not be issued	Written, electronic, or oral (phone) prescriptions permitted; prescriptions may be refilled, subject to certain limitations	Written, electronic, or oral (phone) prescriptions permitted; prescriptions may be refilled
Who may prescribe, administer, or dispense (as permitted)	A clinician or program that obtains a separate OTP registration or their agent[f]	Physicians with a waiver and, Nurse Practitioners (NPs), Physician Assistants (PAs), Clinical Nurse Specialists (CNSs), Certified Registered Nurse Anesthetist (CRNAs), and Certified Nurse-Midwives (CNMs).[g]	Any clinician with prescribing privileges

Limitations on number of patients	None	Physician can treat up to 100 patients in the first year of waiver receipt if they satisfy one of the following two conditions: Board certification in addiction medicine or addiction psychiatry Practicing in a "qualified practice setting"[g]	None

[a] *The requirements for buprenorphine are when dispensed or prescribed under a waiver authorized by amendments to the CSA enacted through the Drug Addiction Treatment Act of 2000 (DATA 2000).*
[b] *Administering refers to the direct application of a single dose of drug.*
[c] *Dispensing refers to preparing, packaging and labeling a prescription drug or device for subsequent use by a patient.*
[d] *Prescribing refers to written instruction given by a licensed practitioner to be dispensed by someone off site.*
[e] *OTP refers both to a program or a practitioner engaged in opioid treatment of individuals. See 42 C.F.R. § 8.2.*
[f] *The agent must be supervised by and under the order of the licensed practitioner and is required to be a pharmacist, registered nurse, licensed practical nurse, or any other healthcare professional authorized by federal and state law to administer or dispense opioid drugs.*
[g] *H.R. 6, the Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act*

Buprenorphine

Buprenorphine may be easily and legally ordered by any clinician in any hospital setting. However, to prescribe buprenorphine at hospital discharge for dispensing at a retail pharmacy, an X-waiver is required.

Methadone

Federal law requires that methadone for the treatment of OUD be dispensed only by qualified providers in certified and accredited OTPs.[97,98] However, emergency medicine clinicians who are not separately registered as an OTP are permitted to dispense and administer, but not prescribe, methadone and buprenorphine outside of an OTP under an exception known as the "3-day rule."[99,100] This rule allows a clinician in a hospital setting to initiate or continue treatment of OUD for 3 days to relieve or prevent acute withdrawal symptoms. However, again, any patient admitted to the hospital can have their buprenorphine or methadone continued indefinitely during hospitalization by any prescriber. In keeping with federal law, patients who begin treatment with methadone during a hospitalization cannot be discharged with a prescription for methadone. Clinical guidelines recommend that patients receiving methadone from an OTP who are admitted to the hospital be maintained on their existing methadone regimens and the dose be confirmed with the initiating provider if possible.[101]

Methadone Dispensing:
In Texas, methadone is dispensed by OTPs, which are regulated and inspected by Texas Health and Human Services.[102]

Naltrexone

Naltrexone can be prescribed by any healthcare clinician who is licensed to prescribe medications. Special training and certification are not required.[103]

Insurance Coverage

The Mental Health Parity and Addiction Equity Act (MHPAEA) of 2008 requires health insurers and group health plans to provide the same level of mental health or substance use benefits as for medical or surgical care.[104,105] This requirement ensures that quantitative treatment limitations, such as number of allowed hospital days or co-pays, and non-quantitative treatment limitations, such as prior authorization and medical necessity requirements, are not more stringent or restrictive for behavioral health services (including treatment for OUD) than for physical health services.

House Bill 10, a 2017 law passed by the Texas legislature, strengthens MHPAEA by requiring the Texas Department of Insurance (TDI) to enforce parity for all state-regulated health plans in Texas. Also, House Bill 10 gives that department the authority to monitor compliance and handle complaints related to parity issues for the plans it oversees.[106] **Importantly, parity laws do not require plans to cover substance use services, including treatment for OUD, or impose minimum levels of service.**

Medicaid and Medicare Coverage

In Texas, Medicaid covers MOUD under Fee-For-Service (FFS) and Managed Care (MC) plans. Both buprenorphine products and naltrexone are included on the Texas Medicaid Preferred Drug List (PDL).[107] **Buprenorphine products do not require prior authorization as required for non-preferred medications but do require clinical prior authorization.** Clinical prior authorization ensures medications are prescribed based on evidence-based clinical criteria and nationally recognized peer-reviewed information.[107] Naltrexone does not require any type of prior authorization. State legislation requires that qualified MOUD providers in Texas are guaranteed coverage for MOUD services provided to Medicaid beneficiaries without prior authorization.[108] Table 6 lists Texas Medicaid preferred and non-preferred opioid medications to treat pain and OUD, and prior authorization criteria.

Table 6. Medicaid Coverage of Opioid Medications in Texas

Preferred Medication	Non-preferred Medication	Prior Authorization Criteria (client must meet at least one)

For Treatment of Pain		
• BUTRANS (buprenorphine) • EMBEDA (morphine/naloxone) • fentanyl patch (12.5, 25, 50, 75, 100 mcg) • morphine ER (generic MS Contin) tramadol ER (Ultram ER) • XTAMPZA ER (oxycodone)	• BELBUCA (buprenorphine) • buprenorphine patch • DURAGESIC (fentanyl) EXALGO (hydromorphone) • fentanyl patch (37.5, 62.5, 87.5 mcg) • hydromorphone ER • HYSINGLA ER (hydrocodone) • KADIAN (morphine) • methadone • MORPHABOND ER (morphine) • morphine ER (generic Avinza, KADIAN) • MS CONTIN (morphine) • NUCYNTA ER (tapentadol) • OPANA ER (oxymorphone) • oxycodone ER • OXYCONTIN (oxycodone) • oxymorphone ER • tramadol ER (generic Conzip, Ryzolt)	• Treatment failure with preferred medications within any subclass • Contraindication to preferred medications • Allergic reaction to preferred medications • Treatment of stage-four advanced, metastatic cancer and associated conditions Methadone oral solution will be authorized for patients less than 24 months of age.
For Treatment of OUD		
• BUNAVAIL (buprenorphine/naloxone)* • buprenorphine* • buprenorphine/naloxone* • LUCEMYRA (lofexidine) • naloxone syringe, vial • naltrexone • NARCAN (naloxone) nasal • SUBOXONE (buprenorphine/naloxone) film* • VIVITROL (naltrexone) • ZUBSOLV (buprenorphine/naloxone)*		• Treatment failure with preferred medications within any subclass • Contraindication to preferred medications • Allergic reaction to preferred medications • Treatment of stage-four advanced, metastatic cancer and associated conditions

Medicare also provides coverage for MOUD. **All FDA-approved MOUD medications, including methadone, are covered by Medicare Part A when administered during an inpatient stay.** Medicare Advantage, depending on the plan, can cover buprenorphine; however, requirements for prior authorization for MOUD can vary by plan[109] Table 7 lists MOUD medications covered by Medicare.

Table 7. Medicare MOUD Medication Summary[110]

Medicare Part	Covered MOUD Medications	Not Covered
Part A	Covers all FDA-approved MOUD medications (methadone, buprenorphine, naltrexone) when administered during a hospital admission.	N/A

Part B	May cover MOUD in approved outpatient settings, such as community health centers or physician offices. Effective January 1, 2020, OTPs are reimbursed through bundled payments for MOUD including: methadone, buprenorphine (oral, injectable or implant) and naltrexone.[111]	
Part C	Covers Part D medications if the Part C plan covers prescription medications .	Methadone for MOUD is not covered under Part C.
Part D	Covers MOUD prescribed by participating Medicare practitioners and dispensed by retail pharmacies, including some buprenorphine formulations, such as film or tablets, and naltrexone. Methadone when prescribed for pain, depending on the plan.	Methadone for MOUD is not covered under Part D.

Commercial Health Insurance Coverage

In Texas, commercial coverage of MOUD can vary by insurer. Some large insurers in Texas may not require prior authorization for preferred MOUD products, which can include buprenorphine sublingual tablet and buprenorphine – naloxone sublingual tablet/film ; however, this practice can vary.[112,113] Hospital discharge planning should include a review of benefits and coordination with pharmacy services to ensure coverage of MOUD within the hospital and upon discharge.

Harm Reduction

Research has supported several OUD harm reduction strategies, such as increased access to naloxone, distribution of fentanyl test strips, needle distribution, and safe injection sites as effective means to reduce opioid overdose deaths and infectious diseases associated with intravenous substance use.[114–117]

Naloxone Distribution Programs:
Naloxone access strategies, such as take-home naloxone programs, are associated with decreased mortality among those with unhealthy opioid use.[114]

Although no national regulations address naloxone access, many states have implemented various laws enabling naloxone prescribing and dispensing. **The 2015 Texas Legislature permitted doctors to write standing orders for naloxone.** The law allows any pharmacy with a standing order to dispense naloxone to anyone who asks for it, to keep on hand as a precaution. Requesters can include a family member, friend, or other person in a position to assist someone at risk of experiencing an opioid-related overdose.[118] Furthermore, Texas regulations provide immunity to anyone administering naloxone to an individual believed to be suffering from an opioid overdose, provided that person acts in good faith.

Administering individuals are immune from criminal prosecution, civil liability, and sanction under professional licensing statutes.[119]

Fentanyl test strips are designed to help consumers determine if there is fentanyl, a very powerful opioid and a key driver of opioid deaths, in any substances purchased on the streets. These strips can change substance use behavior and increase overdose safety awareness of people who inject substances.[117]

SECTION 7: REIMBURSEMENT

Like other services provided in the hospital, MOUD services are reimbursed as pharmacy costs, professional services, and hospital costs. This section covers these three areas, including how the Medicare and Texas Medicaid programs price medications, how MOUD professional services are billed, and regulations surrounding hospital costs in the inpatient and ED settings for patients requiring MOUD.

Pharmacy Costs

Pharmacy costs can vary extensively, depending on a given hospital's medication distribution contracts. However, reimbursement for most physician-administered medications under Medicare is based on the medication's average sales price as calculated by the Centers for Medicare & Medicaid Services (CMS).[120] For Texas Medicaid, physician-administered medications in the hospital are reimbursed as the lesser of the billed charge or the Medicaid fee[121] established by the Texas Health and Human Services Commission.[122]

Billing for MOUD Professional Services

Payment for professional services delivered in the inpatient and emergency setting is calculated using CMS's Current Procedural Terminology (CPT) codes and related Healthcare Common Procedure Coding System (HCPCS) codes. Table 8 summarizes reimbursement information for professional services delivered by physicians to Medicare or Medicaid beneficiaries in the hospital. The table also shows whether these services were covered as telehealth benefits for Medicare beneficiaries specifically.

Considerations for Telehealth Services

All telehealth services either were already covered under Medicare or have been extended coverage for the duration of the COVID-19 public health emergency. For Medicaid beneficiaries, hospital codes are not covered as telehealth benefits, but the office visit codes (99202, 99203, 99204, 99212. 99213, and 99214) are. Those billing Texas Medicaid for telehealth services should use the "95" modifier when billing.[123]

Table 8. Reimbursement for MOUD Physician Services

HCPCS/ CPT Code	Time	Medicare Facility Payment[124]	Medicaid MD Facility Payment[125]	Telehealth Coverage for Medicare[126]
New or established patient initial hospital inpatient care services				
99221	30 minutes	$101.19	$59.92	temporarily added for PHE

99222	50 minutes	$136.08	$95.05	temporarily added for PHE
99223	70 minutes	$200.29	$120.14	temporarily added for PHE
Follow-up hospital visits				
99231	15 minutes	$38.38	$35.13	covered
99232	25 minutes	$71.88	$45.48	covered
99233	35 minutes	$103.28	$61.17	covered
Prolonged consultation, inpatient setting				
99356	First hour	$91.42	$54.58	covered
99357	Each additional 30 minutes	$91.77	$24.78	covered
Hospital discharge day management				
99238	≤ 30 minutes	$72.23	$60.51	temporarily added for PHE
99239	>30 minutes	$106.42	$72.15	temporarily added for PHE
Office visits - new patient (for patients in observation status)				
99202	20 minutes	$49.90	$41.09	covered
99203	30 minutes	$84.44	$55.52	covered
99204	45 minutes	$137.48	$81.24	covered
99205	60 minutes	$186.68	$101.00	covered
Office visits - established patient (for patients in observation status)				
99212	10 minutes	$36.29	$22.59	covered
99213	15 minutes	$68.04	$33.95	covered
99214	25 minutes	$100.49	$47.68	covered
99215	40 minutes	$147.95	$73.40	covered

These HCPCS codes and categories are adapted from a Colorado Hospital Association figure produced in 2020. The Medicare reimbursement rates have been updated to reflect the 2021 Physician Fee Schedule, Texas Medicaid rates have been added with the Texas Medicaid & Health Partnership Fee Lookup Tool, and 2021 Telehealth coverage was pulled from the CMS website.

In addition to inpatient and observation codes, **MAT services can be coded with a new G code for initiation of MAT in the ED.** The new code for MAT initiation in the ED is covered for Medicare beneficiaries beginning January 1, 2021, but it is not covered for Texas Medicaid beneficiaries. The HCPCS code is G2213, and the physician fee for the service in the hospital is $65.95.[127]

Screening, Brief Intervention, and Referral to Treatment

Substance screening, as well as Screening, Brief Intervention, & Referral to Treatment (SBIRT) services are covered for both Medicare and Medicaid beneficiaries to varying degrees. These screening and SBIRT services must occur in the outpatient or physician office environments and, definitionally, do not include interventions that lead to an inpatient admission. Table 9 displays the different CPT and HCPCS codes that can be charged for services rendered to Medicare, Medicaid, and private pay beneficiaries. Facility fee prices are included for the Medicare and Medicaid services, but these will vary among the private plans. Texas Medicaid covers two screening-only sessions and up to four screening and brief intervention sessions per rolling year.

Screening-only sessions involve only the use of standard screening tools to assess for risky substance use and appropriate levels care, whereas SBIRT sessions include screening and a brief intervention in the form of counseling, discussion, and advice and finally a referral for additional therapy or treatment services depending on the assessment from the patient's initial screening.[128] **Additionally, SBIRT is only reimbursable to providers who have completed at least 4 hours of SBIRT training.**[129] H0049 is the intended code if the screening is negative, whereas 99408 and G2011 are for brief interventions.[129(p8)] Because SBIRT requires a referral for subsequent treatment and not immediate treatment in the ED or inpatient settings, the following psychiatric evaluation and other test codes are considered mutually exclusive with the Medicaid SBIRT codes: 90791, 90792, 90833, 90834, 90836, 90837, 90838, 90847, 90853, 90865, 90870, 96130, 96131, 96132, 96133, 96136, and 96137.[129(p8)]

Table 9. Reimbursement for SBIRT130

Payer	Code	Description	Fee Schedule
Commercial Insurance	CPT 99408	Alcohol and/or substance abuse structured screening and brief intervention services; 15 to 30 minutes	plan dependent
	CPT 99409	Alcohol and/or substance abuse structured screening and brief intervention services; greater than 30 minutes	plan dependent
Medicare	G0396	Alcohol and/or substance abuse structured screening and brief intervention services; 15 to 30 minutes	$29.42
	G0397	Alcohol and/or substance abuse structured screening and brief intervention services; greater than 30 minutes	$57.69
Medicaid	H0049	Alcohol and/or drug screening (no intervention)	$13.47
	G2011	Alcohol/substance misuse assessment	$12.83
	CPT 99408	Alcohol and/or substance abuse structured screening and brief intervention services; 15 to 30 minutes	$25.39

Billing for Hospital Services

Like Medicare, Texas Medicaid uses a prospective payment system based on reimbursing clusters of similar diagnoses to reimburse acute inpatient care called the All Patient Refined – Diagnosis Related Groups (APR-DRG) payment system.[131] However, there are Texas-specific policies that uniquely affect the Medicaid population. These key policies are discussed below.

- **Texas Medicaid beneficiaries are subject to an annual limit of allowed reimbursement for acute inpatient care of $200,000 per beneficiary per year.** Payments made for claims beyond that $200,000 limit are recouped from the provider. Importantly, Medicaid beneficiaries under the age of 20 are not subject to this annual limit.[132]
- Regarding MAT treatments specifically, although the above codes can cover some treatments, diagnoses of substance use without an accompanying medical complication or condition (e.g., soft tissue infection) are categorically not covered in the inpatient setting for Texas Medicaid beneficiaries.[129]
- MOUD, like any medically necessary medication, are covered during an inpatient admission, and are also covered during an ED visit or if prescribed by a physician to a beneficiary under an observation stay.[132,133] Additionally, buprenorphine film and tablets are both covered for Medicaid beneficiaries at certified opioid treatment providers and in physicians' offices.[133]

Appendices

Appendix 1. Buprenorphine Formulations, FDA Approval Status, and DEA DATA 2000 X-Waiver Requirements

Table 2. Buprenorphine Formulations, FDA Approval Status, and DEA DATA 2000 "X" Waiver Requirements

Formulation	Doses Available	Indication	DEA DATA 2000 "X" Waiver Required?
Parenteral (Buprenex)	0.3 mg IV/IM every 30 minutes, duration 6-8 hours Analgesic equivalent = 10 mg IV morphine for opioid naïve	Pain	No
Transdermal patch (Butrans)	Buprenorphine: 5, 7.5, 10, 15, and 20 mcg/hour, every 7 days	Pain	No
Low-dose buccal film (Belbuca)	Buprenorphine: 75, 150, 300, 450, 600, 750, 900 mcg, twice daily	Pain	No
High-dose buccal film (Bunavail)	Buprenorphine/naloxone, daily: 2.1 mg/0.3 mg, 4.2 mg/0.7 mg, and 6.3 mg/1 mg	Addiction Off-label for pain	Yes for addiction No for pain or 3-day rule
Sublingual tablets (Subutex, Suboxone, Zubsolv)	Dosed daily for addiction; divided doses for pain Buprenorphine: 2 mg, 8 mg Buprenorphine/naloxone: 2 mg/0.5 mg, 8 mg/2 mg; 1.4 mg/0.36 mg, 2.9 mg/0.71 mg, 5.7 mg/1.4 mg, 8.6 mg/2.1 mg, 11.4 mg/2.9 mg	Addiction Off-label for pain	Yes for addiction No for pain or 3-day rule
Sublingual film (Suboxone)	Buprenorphine/naloxone: 2 mg/0.5 mg, 4 mg/1 mg, 8 mg/2 mg, 12 mg/3 mg	Addiction Off-label for pain	Yes for addiction No for pain or 3-day rule
Implant (Probuphine)	80 mg (equivalent to <8 mg sublingual daily)	Addiction Off-label for pain	Yes
Compounded	Many options	Pain	No

NOTE: Sublocade is an additional formulation not listed above. It is an extended-release injectable for patients with moderate to severe OUD whose withdrawal symptoms are controlled by oral buprenorphine for at least seven days. For more information visit the Sublocade website.

Source: Andrew Herring, California Health Care Foundation

Appendix 2. Buprenorphine-Naloxone Nursing Quick Reference Sheet

Buprenorphine/Naloxone (Suboxone) Nursing Quick Reference Sheet

B-TEAM
SHOUT TEXAS

The Buprenorphine Team (B-Team) offers patients with Opioid Use Disorder (OUD) the opportunity to be started on buprenorphine while in the hospital. Buprenorphine has been FDA approved to treat OUD since 2000 and is proven to decrease a patient's physical dependency on opioids while increasing self-efficacy and overall quality of life during and after treatment. Primary teams are encouraged to notify the B-Team about any patient who may have a diagnosis of OUD. The B-Team partners with outpatient clinics for continuity of care after the patient is discharged.

Indication	• Moderate to severe OUD and opioid withdrawal (can also be used off-label for pain).
Mechanism	• Buprenorphine – high affinity, partial opioid agonist, binds to opioid receptors and reduces cravings. • Naloxone – opioid antagonist, displaces opioids at receptor sites and prevents IV abuse.
Dose	• Per algorithm. • Starting dose is based on presence of withdrawal symptoms and timing of last use of opioids. • Subsequent dosing is based on assessment of withdrawal symptoms using Clinical Opiate Withdrawal Scale (COWS). • Dosing for tablet versus film are not interchangeable.
Dose Adjustments	• Renal: None. • Hepatic (moderate impairment): Use caution. • Hepatic (severe impairment): Avoid use.
Adverse Effects	• Mild risk for oversedation. • Potential to induce withdrawal. • Hepatic injury (rare).
Drug Interactions	• CYP 3A4 substrate – caution with inducers and inhibitors; additive effects with co-administration of other CNS/respiratory depressing agents. • Recent use of opioid agonists, including heroin, increases the risk of withdrawal upon initiation of buprenorphine.
Ordering Prescribers	• Inpatient: the B-Team provider will typically order, though any provider can order under current regulations. • Outpatient: prescriptions must be prescribed by prescribers who have received an X-waiver certification from the DEA.
Administration	• Buprenorphine-naloxone is administered sublingually and is poorly absorbed by the oral route. • Place one film or tablet under the tongue, close to the base on the left or right side. • If an additional dose is needed (based on COWS score), place film or tablet on the opposite side from the first dose. • Place the film or tablet in a manner to minimize overlapping as much as possible. • Film and tablets should not be chewed, cut, or swallowed. • Films and tablets must be kept under the tongue until completely dissolved. • Moistening the mouth with water prior to administration can help with absorption. • Patients should not eat or drink immediately after administration (~10 minutes).
Monitoring	• COWS is assessed with each dose of buprenorphine-naloxone and reassessed based on level of withdrawal by previous COWS score. • Monitor sedation using validated scales per hospital policy. • LFTs (performed prior to start of induction), urine drug screens (frequency/need determined by MD).
Floor PharmD Action	• Patient counseling. • Just-In-Time education as needed for members of the primary care team. • Ensure patient has adequate medication supply between discharge and follow-up outpatient appointment.
Additional Tips	• If the patient has an acute need for pain medication and is receiving buprenorphine-naloxone, alternative analgesics (ibuprofen, acetaminophen, gabapentin, etc) should be used whenever possible. • Ideally, the patient should not receive any opioids while on buprenorphine-naloxone unless absolutely necessary. • Buprenorphine-naloxone will not compete with benzodiazepine receptors. Although, the combination may cause increased sedation. • If there is any concern for illicit drug use while taking buprenorphine-naloxone, please contact the primary medical team or the B-Team.

The B-Team is an interdisciplinary group that includes physicians, advanced practice providers, nurses, social workers, case managers, and pharmacists. For questions about the B-Team or for guidance on starting buprenorphine-naloxone **TigerText The Buprenorphine Team.**

Ascension Seton

The University of Texas at Austin Dell Medical School

This project is funded by Texas Health & Human Services Texas Targeted Opioid Response.

Appendix 3. Buprenorphine-Naloxone Pharmacy Quick Reference Sheet

Buprenorphine-Naloxone (Suboxone) Pharmacy Quick Reference Sheet

B-TEAM
SHOUT TEXAS

The Buprenorphine Team (B-Team) offers patients with Opioid Use Disorder (OUD) the opportunity to be started on buprenorphine while in the hospital. Buprenorphine has been FDA approved to treat OUD since 2000 and is proven to decrease a patient's physical dependency on opioids while increasing self-efficacy and overall quality of life during and after treatment. Primary teams are encouraged to notify the B-Team about any patient who may have a diagnosis of OUD. The B-Team partners with outpatient clinics for continuity of care after the patient is discharged.

Indication

- Moderate to severe OUD and opioid withdrawal (can also be used off-label for pain).

Mechanism

- Buprenorphine - partial opioid agonist, binds to opioid receptors and reduces cravings.
- Naloxone - opioid antagonist, displaces opioids at receptor sites and prevents IV abuse.

Adverse Effects

- Mild risk for over sedation.
- Potential to induce withdrawal.
- Hepatic injury (rare).

Documentation

- When required, the COWS score (similar to CIWA) or opioid cravings should be documented in the MAR comment and on a paper form each time a dose is administered.
- NOT all patients will have a COWS or opioid cravings documentation required. This determination is made by the B-Team provider and will be discussed with the primary nurse to determine if this assessment is needed or if the patient can be started on scheduled dosing.

Administration

- Buprenorphine-naloxone is administered sublingually and is poorly absorbed by the oral route.
- Place one film or tablet under the tongue, close to the base on the left or right side.
- If an additional dose is needed (based on COWS score), place film or tablet on the opposite side from the first dose.
- Place the film or tablet in a manner to minimize overlapping as much as possible.
- Film and tablets should not be chewed, cut, or swallowed.
- Films and tablets must be kept under the tongue until completely dissolved.
- Moistening the mouth with water prior to administration can help with absorption.
- Patients should not eat or drink immediately after administration (~10 minutes).

Monitoring

- COWS is assessed with each dose of buprenorphine-naloxone and reassessed based on level of withdrawal by previous COWS score.
- Monitor sedation using validated scales per hospital policy.
- LFTs (performed prior to start of induction), urine drug screens (frequency/need determined by MD)).

Additional Tips

- If the patient has an acute need for pain medication and is receiving buprenorphine-naloxone, alternative analgesics (ibuprofen, acetaminophen, gabapentin, etc) should be used whenever possible
- Ideally, the patient should not receive any opioids while on buprenorphine-naloxone unless absolutely necessary.
- Buprenorphine-naloxone will not compete with benzodiazepine receptors. Although, the combination may cause increased sedation
- If there is any concern of illicit drug use while taking buprenorphine-naloxone, please contact the primary medical team or the B-Team.

The B-Team is an interdisciplinary group that includes physicians, advanced practice providers, nurses, social workers, case managers, and pharmacists. For questions about the B-Team or for guidance on starting buprenorphine-naloxone **TigerText The Buprenorphine Team.**

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