



Buprenorphine – A Tool in the Toolbox of a Pain Physician

Tuesday, June 7, 2022 7-8:30 pm ET

Multi-Society Perioperative Buprenorphine Guidelines

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™ IMPACT # OPIOIDS

2018 OPIOID STATISTICS

SOURCE: HHS.GOV.OPIOIDS



PEOPLE DIED EVERY DAY FROM OPIOID-RELATED DRUG OVERDOSES



PRESCRIPTIONS



57,600



PEOPLE HAD AN OPIOID USE DISORDER



808,000 PEOPLE USED HEROIN



81,000

USED HEROIN FOR THE FIRST TIME



PEOPLE MISUSED PRESCRIPTION



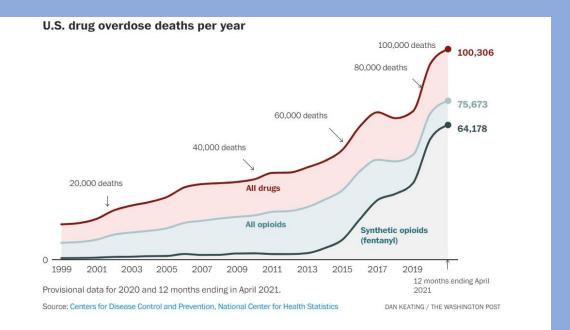
15,349

OVERDOSING ON HEROIN (DURING 12 MONTH PERIOD)



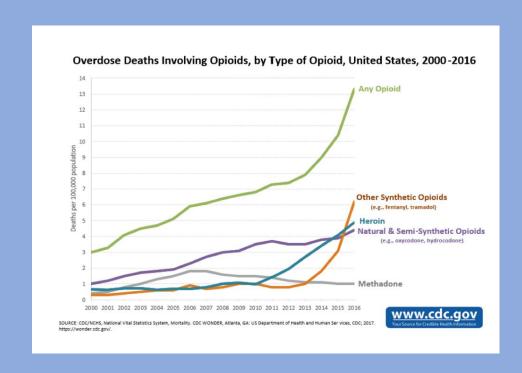
32,656

DEATHS ATTRIBUTED TO OVERDOSING ON SYNTHETIC OPIOIDS OTHER THAN METHADONE (DURING 12 MONTH PERIOD)



Importance of buprenorphine

- Opioid crisis is ongoing
- Impact
 - Overdose and death
 - Acquired infection
 - Comorbidities
 - Economic loss
 - Family destruction
 - Legal issues



COVID-19 and the opioid crisis: When a pandemic and an epidemic collide

DSM V criteria for SUD

Impaired Control

- 1. The substance is often taken in larger amounts or over a longer period than was intended
- 2. There is a persistent desire or unsuccessful efforts to cut down or control substance use
- 3. A great deal of time is spent in activities necessary to obtain, use or recover from the effects of the substance
- 4. Craving or a strong desire or urge to use the substance

Social Impairment:

- 1. Recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home
- 2. Continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance
- 3. Important social, occupational, or recreational activities are given up or reduced because of substance use

Risky use

- 1. Recurrent substance use in situations in which it it physically hazardous
- 2. Continued substance use despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance

Pharmacological criteria

- 1. Exhibit symptoms of tolerance (reducing effect with increasing dose)
- 2. Exhibit symptoms of withdrawal (physiological symptoms due to absence of a substance typically used repeatedly)

American psychiatric association's Diagnostic and Statistical Manual of Mental Disorders. SUD is defined by the presence of at least one pharmacological criteria in addition to at least one other criterion from another category. Meeting 2-3 criteria constitutes mild, 4-5 moderate, equal or more than 6 is severe

Substance Use Disorder

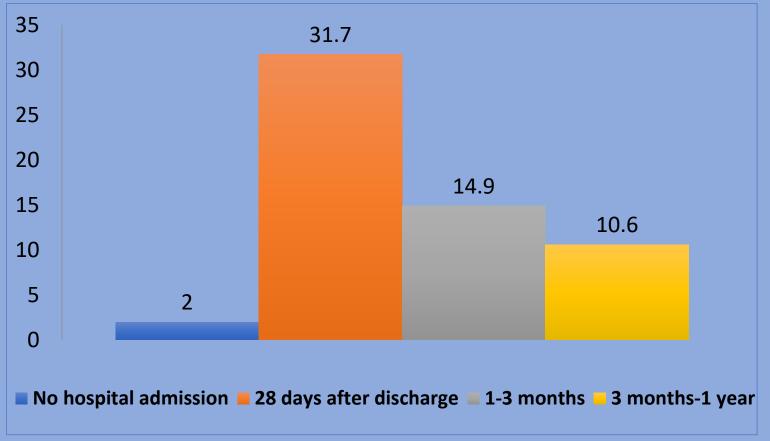
- Approximately 10-30% of hospitalized pt's have a non-alcohol SUD disorder
- Almost 40% are not detected by care team
- Not receiving care anywhere else for the SUD
- Almost 1/3 leave AMA
- Complicates hospital course
 - Poorer adherence to treatment plan
 - Withdrawal
 - Prolonged LOS
- Poor outcomes

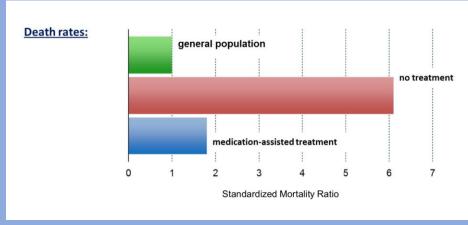


Buprenorphine

- Reduces opioid withdrawal and craving
- High binding affinity for the MOR
 - Will displace other opioid ligands
 - May precipitate withdrawal
 - Once in place prevents additional opioid binding
 - Some receptors may remain unbound and available
- Does not require daily trips to clinic (like methadone)
- Usually ok for use in elderly, and those with hepatic and renal insufficiency (except severe)

Drug Related Death Rate per 1000 Post Discharge







Dupouy et al., 2017 Evans et al., 2015 Sordo et al., 2017

Buprenorphine is Lifesaving

- The number needed to treat to prevent one death from OUD with buprenorphine is less three.
- Buprenorphine treatment was associated with a 37% reduction in all-cause mortality during the year after a nonfatal overdose.
- It's rare in medicine to actually be able to save a life.

Buprenorphine Formulations

Formulation	Indication	Strengths	Frequency	Nalox
Sublingual tablet (generic)	Opioid dependence	2 mg; 8 mg	Once daily	N
Sublingual tablet, film (generic, Suboxone)	Opioid dependence	2 mg/0.5 mg; 4 mg/1 mg; 8 mg/2 mg; 12 mg/3 mg	Once daily	Υ
Sublingual tablet (Zubsolv)	Opioid dependence	0.7 mg/0.18 mg; 1.4 mg/0.36mg 2.9 mg/0.71 mg; 5.7 mg/1.4 mg; 8.6 mg/2.1 mg; 11.4 mg/2.9 mg	Once daily	Υ
Buccal film (Bunavail)	Opioid dependence	2.1 mg/0.3 mg; 4.2 mg/0.7 mg; 6.3 mg/1 mg	Once daily	Υ
Buccal film (Belbuca)	Chronic pain	75 mcg; 150 mcg; 300 mcg; 450 mcg; 600 mcg; 750 mcg; 900 mcg	Every 12 hours	N
Intravenous (Buprenex)	Acute pain	0.3 mg/mL	Every 6 hours as needed	N
Subcutaneous extended release injection (Sublocade)	Moderate-to-severe opioid use disorder	100 mg/0.5 mL; 300 mg/1.5 mL	Monthly	N
Transdermal patch (Butrans)	Chronic pain	5 mcg/hr; 7.5 mcg/hr; 10 mcg/hr; 15 mcg/hr; 20 mcg/hr	Every 7 days	N

Warner NS, Warner MA, Cunningham JL, et al. A Practical Approach for the Management of the Mixed Opioid Agonist-Antagonist Buprenorphine During Acute Pain and Surgery. Mayo Clin Proc. 2020;95(6):1253-1267.

Multi-Society Working Group on SUD

- Initiative
 - Dr. Eugene Visucsi (ASRA President)
 - Dr. Beverly Philip (ASA President)
 - Dr. Jerome Adams (Surgeon General)



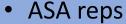








- SUD Ad Hoc Committee
 - Chair Lynn Kohan M.D.
 - ASRA reps
 - Sudheer Potru M.D.
 - Olabisi Lane M.D.



- Anuj Aryal M.D.
- Antje Barreveld M.D.
- AAPM rep
 - Trent Emerick M.D.
- ASAM reps
 - Trent Emerick M.D.
 - Michael Sprintz D.O.
- ASHSP reps
 - Anna Dopp Pharm. D.
 - Sophia Chhay Pharm. D.

















Buprenorphine Maintenance Therapy: Continue or Stop?

 Discontinuation of buprenorphine exposes the patient to the substance of addiction and may lead to relapse

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Review > J Subst Abuse Treat. 2015 May;52:48-57. doi: 10.1016/j.jsat.2014.12.011. Epub 2014 Dec 30.

Discontinuation of buprenorphine maintenance therapy: perspectives and outcomes

Brandon S Bentzley 1, Kelly S Barth 2, Sudie E Back 3, Sarah W Book 4

Affiliations + expand

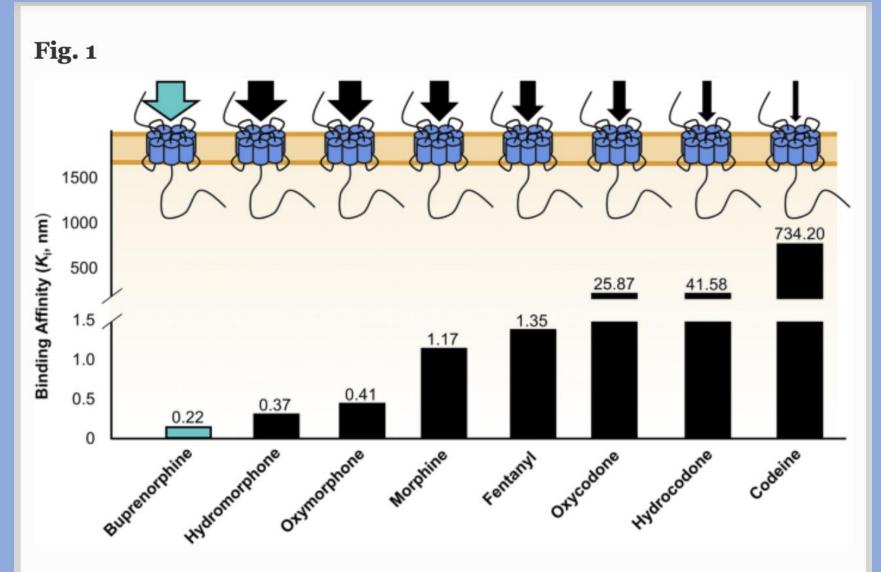
PMID: 25601365 PMCID: PMC4382404 DOI: 10.1016/j.jsat.2014.12.011

Free PMC article
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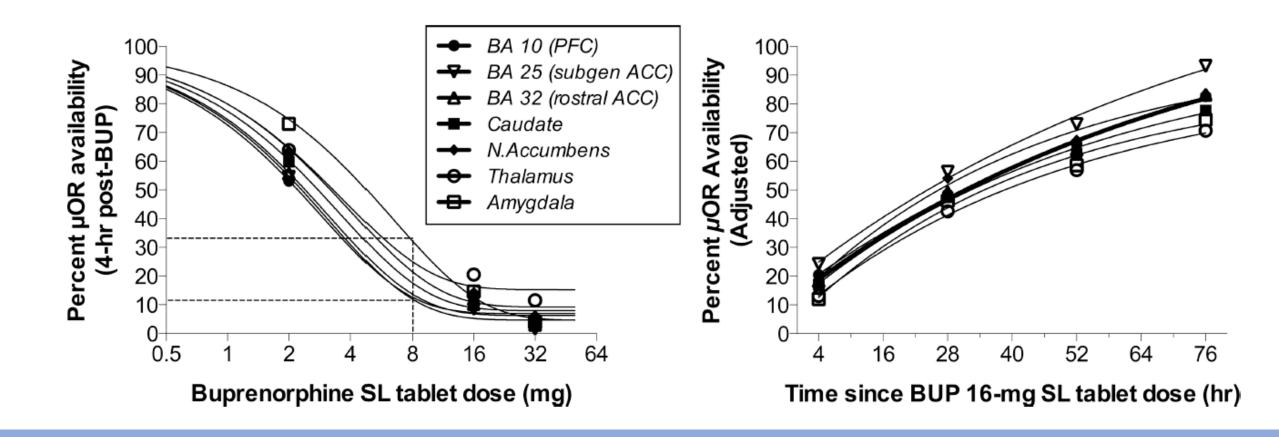
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Perioperative Pain and Addiction Interdisciplinary
Network (PAIN) clinical practice advisory for
perioperative management of buprenorphine: results
of a modified Delphi process

Akash Goel 1, Saam Azargive 2, Joel S Weissman 3, Harsha Shanthanna 4, John G Hanlon 5,
Bana Samman 5, Mary Dominicis 5, Karim S Ladha 5, Wiplove Lamba 6, Scott Duggan 7,
Tania Di Renna 5, Philip Peng 5, Clinton Wong 8, Avinash Sinha 9, Naveen Eipe 10,
David Martell 11, Howard Intrater 12, Peter MacDougall 10, Kwesi Kwofie 13, Mireille St-Jean 14,
Saifee Rashig 15, Kari Van Camp 16, David Flamer 5, Michael Satok-Wolman 16, Hance Clarke 17
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- Continuing buprenorphine occupies the receptors making them unavailable for other opioids
 - Does this provide poorer analgesia?



Buprenorphine exhibits a higher binding affinity at the μ -opioid receptor than full μ opioid receptor agonists. A low K_i value corresponds to greater binding affinity but does
not necessarily translate to greater receptor activity [18]



Multi-Society Working Group Recommendations





Preoperative Pain



Grade B Moderate Level of Certainty



Buprenorphine should not be routinely discontinued



Discontinuing buprenorphine in patients with OUD increases risk of relapse or harm



Home dose of buprenorphine should not be routinely tapered prior to surgery

Recommendations for Postoperative Management

Clinical Pearl: Buprenorphine home dose should not be routinely discontinued or tapered perioperatively

All surgery types (elective, urgent, emergent)

Buprenorphine Management

Mild/Moderate Pain:

 Home bupre-norphine dose can be split into two times per day/three times per day dosing to provide an analgesic effect.

Severe Pain:

- Home buprenorphine dose can be split into three times per day dosing to provide improved analgesic effect.
- Consider increasing dose of buprenorphine to 24-32 mg given in divided doses or using buprenorphine intravenous 0.3 mg every 6 hours prn
- Consider close monitoring if increasing or adding opiate for pain

Acute Pain with Other Opioids

- Maximize nonopioid strategies
- Treat acute pain with high affinity additional opioids as indicated in patients with OUD, avoid the opioid of past misuse
- Fentanyl derivatives and hydromorphone likely to be most effective due to high receptor affinity
- Consider close monitoring if increasing or adding opiate for pain

Nonopioid Pharmacological Management

- Regional anesthesia (Epidural catheter, Transversus Abdominus Plane block, peripheral nerve blocks with or without catheters including but not limited to erector spinae plane blocks, paravertebral block, femoral/adductor canal block, etc)
- · Local infiltration by surgical team
- Intraoperative or postoperative ketamine/ lidocaine/magnesium infusions
- Consider Dexmedetomidine if Intravenous sedation used postoperatively
- Topical agents (e.g. ice, lidocaine ointment or patches)
- NSAIDs when indicated (e.g. ketorolac, ibuprofen, etc)
- Intravenous vs. oral acetaminophen when indicated
- Antineuropathic agents when indicated or if comorbid anxiety (e.g. gabapentinoids, antidepressants such as TCAs, SNRIs, etc)
- Muscle relaxants as indicated (e.g. baclofen, tizanidine, cyclobenzaprine; avoid benzodiazepines or carisoprodol)

Non-Pharmacological Management

- Ice to surgical site
- Position change
- Relaxation strategies and mindfulness techniques for pain (e.g. guided "apps" such as the free app "Calm")
- Peer recovery support
- Distraction aligned with interests (e.g. reading, music, family and social support, etc)

Postoperative Disposition

- · Post anesthesia care unit
- Discharge home if satisfactory pain control, coordinate buprenorphine dosing plan with prescriber
- Inpatient floor admission as applicable
- Consider ICU admission if uncontrolled pain and respiratory concerns

Postoperative Pain



Grade B Moderate Level of Certainty



Utilize multimodal analgesia in patients receiving buprenorphine for MOUD



Consider administration of short-acting full mu agonists with close monitoring for uncontrolled pain if/when multimodal analgesia is inadequate

Postoperative Pain



Grade C Low Level of Certainty



Consider increasing and/or dividing doses of buprenorphine with close monitoring for uncontrolled pain if/when multimodal analgesia is inadequate

Discharge Planning



Grade A Moderate Level of Certainty



Provide post-operative plan to taper off full mu agonists or return to preoperative maintenance dose of buprenorphine



Collaborate and discuss plan with patient's outpatient opioid prescriber

What about the pt not on buprenorphine?

•The patient has pain <u>and</u> an Untreated Opioid Use Disorder (OUD)

•The patient has pain <u>and</u> you suspect the patient has an OUD



Why start buprenorphine in the hospital?



Patients may recognize they have a problem and are ready to change



Forced abstinence may allow time to consider a change



Realization that use disorder is impacting relations with family and friends



Non judgmental care team.

Evidence

- Buprenorphine can safely be initiated in hospitalized pts, promotes engagement in outpt SUD care and increases chances of MOUD
 - Leibschultz et al:
 - Lower rates of illicit opioid use at a 6 month follow up period among hospitalized pts who had been initiated on buprenorphine and linked to buprenorphine treatment upon discharge
 - Hospital Buprenorphine initiation vs detox resulted in greater long term use of MOUD upon discharge





The way many providers handle discussing substance abuse with their patients

Practice Guideline > Ann Emerg Med. 2020 Sep;76(3):e13-e39.

doi: 10.1016/j.annemergmed.2020.06.049.

Clinical Policy: Critical Issues Related to Opioids in Adult Patients Presenting to the Emergency Department

American College of Emergency Physicians Clinical Policies Subcommittee (Writing Committee) on Opioids;

Benjamin W Hatten, Stephen V Cantrill, Jeffrey S Dubin, Eric M Ketcham, Daniel P Runde, Stephen P Wall, Stephen J Wolf

Case Reports > Am J Emerg Med. 2019 Dec;37(12):2259-2262.

doi: 10.1016/j.ajem.2019.05.053. Epub 2019 May 29.

Rapid induction onto sublingual buprenorphine after opioid overdose and successful linkage to treatment for opioid use disorder

Andrew A Herring 1, Cody W Schultz 2, Elaine Yang 2, Mark K Greenwald 3

Affiliations + expand

PMID: 31239086 DOI: 10.1016/j.ajem.2019.05.053

Review > J Neurol Sci. 2020 Apr 15;411:116716. doi: 10.1016/j.jns.2020.116716.

Epub 2020 Feb 6.

Buprenorphine initiation to treat opioid use disorder in emergency rooms

Stephen Jaeger Jr 1, Brian Fuehrlein 2

Affiliations + expand

PMID: 32097813 DOI: 10.1016/j.jns.2020.116716

Randomized Controlled Trial > JAMA. 2015 Apr 28;313(16):1636-44.

doi: 10.1001/jama.2015.3474.

Emergency department-initiated buprenorphine/naloxone treatment for opioid dependence: a randomized clinical trial

Gail D'Onofrio 1, Patrick G O'Connor 2, Michael V Pantalon 1, Marek C Chawarski 3, Susan H Busch 4, Patricia H Owens 1, Steven L Bernstein 1, David A Fiellin 5

Affiliations + expand

PMID: 25919527 PMCID: PMC4527523 DOI: 10.1001/jama.2015.3474

Free PMC article

Randomized Controlled Trial > JAMA Intern Med. 2014 Aug;174(8):1369-76.

doi: 10.1001/jamainternmed.2014.2556.

Buprenorphine treatment for hospitalized, opioiddependent patients: a randomized clinical trial

Jane M Liebschutz ¹, Denise Crooks ², Debra Herman ³, Bradley Anderson ³, Judith Tsui ¹, Lidia Z Meshesha 4, Shernaz Dossabhoy 2, Michael Stein 3

Affiliations + expand

PMID: 25090173 PMCID: PMC4811188 DOI: 10.1001/jamainternmed.2014.2556

Free PMC article

Review > Open Access Emerg Med. 2020 Oct 14;12:261-274. doi: 10.2147/OAEM.S267416. eCollection 2020.

Prescribing Buprenorphine for Opioid Use Disorders in the ED: A Review of Best Practices, Barriers, and **Future Directions**

Scott S Cao 1, Samuel I Dunham 1, Scott A Simpson 1 2

Affiliations + expand

PMID: 33116962 PMCID: PMC7569244 DOI: 10.2147/OAEM.S267416

Eroo DMC article

Randomized Controlled Trial > J Gen Intern Med. 2017 Jun;32(6):660-666.

doi: 10.1007/s11606-017-3993-2. Epub 2017 Feb 13.

Emergency Department-Initiated Buprenorphine for Opioid Dependence with Continuation in Primary Care: Outcomes During and After Intervention

Gail D'Onofrio 1, Marek C Chawarski 2 3, Patrick G O'Connor 4, Michael V Pantalon 2, Susan H Busch ⁵, Patricia H Owens ², Kathryn Hawk ², Steven L Bernstein ², David A Fiellin ⁴ ⁵

PMID: 28194688 PMCID: PMC5442013 DOI: 10.1007/s11606-017-3993-2

Free PMC article

ARTICLE IN PRESS

EMERGENCY MEDICAL SERVICES/CONCEPTS

Legal Authority for Emergency Medical Services to Increase Access to Buprenorphine Treatment for Opioid Use Disorder

Corey S. Davis, JD, MSPH*; Derek H. Carr, JD; Melody J. Glenn, MD; Elizabeth A. Samuels, MD, MPH

Ann Emerg Med. 2021;:1-7.

NATIONAL ACADEMY of MEDICINE

Improving Access to Evidence-Based Medical Treatment for Opioid Use Disorder: Strategies to Address Key Barriers Within the Treatment System

By Bertha K. Madras, N. Jia Ahmad, Jenny Wen, Joshua Sharfstein, and the Prevention, Treatment, and Recovery Working Group of the Action Collaborative on Countering the U.S. Opioid Epidemic

Non-Emergency Response (Community paramedicine)

Patient Screening

Determine eligibility for buprenorphine:

- Moderate to severe OUD by DSM-V
- No long-acting opioids (ie, methadone)
- Patient medically stable
- Other critieria outlined in local protocols

Patient eligible

Patient-Specific Order

Online Medical Direction. Waivered prescriber (med control, medical director, etc) authorize buprenorphine administration on a case-by-case basis.

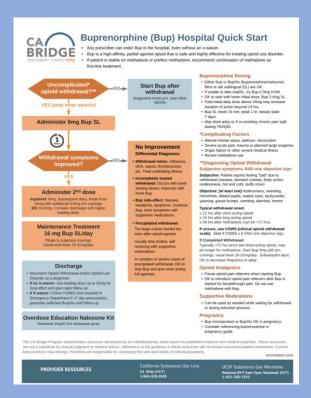
EMS administer buprenorphine

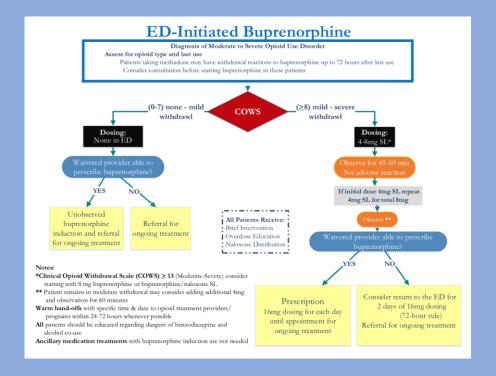
¥ Linkage to treatment

How do I initiate buprenorphine?

Evidence from ER literature

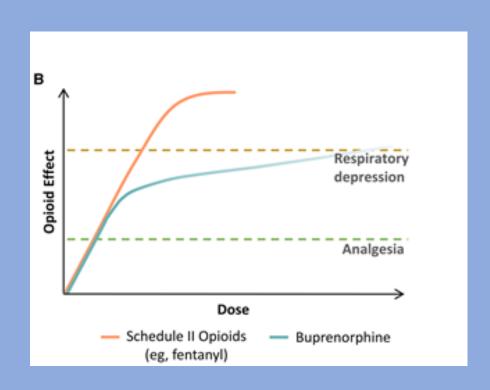
Buprenorphine 4-8 mg safely initiated

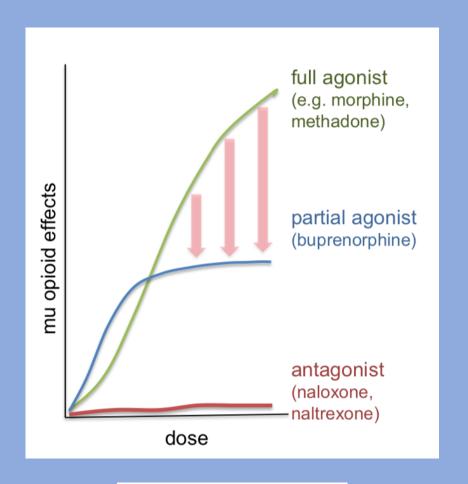




https://www.drugabuse.gov/nidamed-medical-health-professionals/discipline-specific-resources/emergency-physicians-first-responders/initiating-buprenorphine-treatment-in-emergency-department

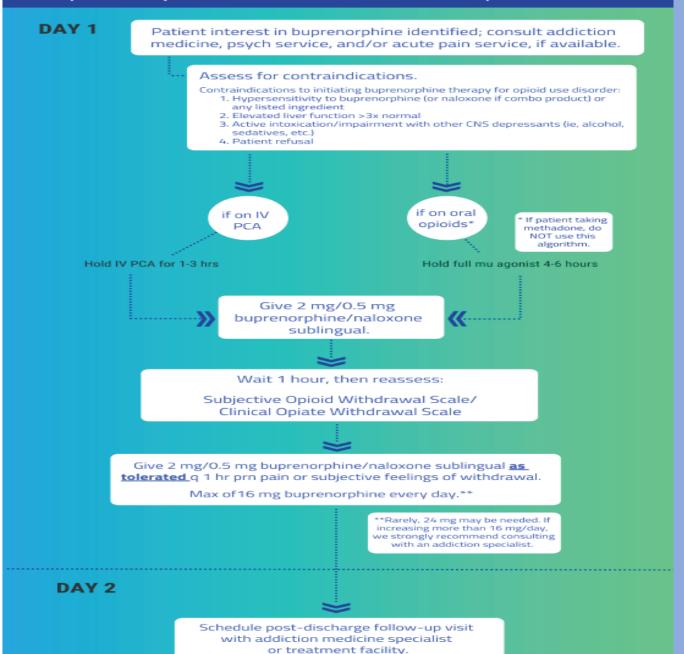
Buprenorphine







How to Initiate <u>Inpatient</u> Buprenorphine for a Patient with Suspected Opioid Use Disorder in the Perioperative Period



COWS Wesson & Ling, J Psychoactive Drugs. 2003 Apr-Jun;35(2):253-9. Clinical Opiate Withdrawal Scale

Resting Pulse	Rate: beats/minute	GI Upset: over las	st 1/2 hour	
Measured after patient is sitting or lying for one minute		0 No GI symptoms		
0 Pulse rate 80 or below		1 Stomach cramps		
i	Pulse rate \$1-100	2	Nausea or loose stool	
2	Pulse rate 101-120	3	Vomiting or diarrhea	
4	Pulse rate greater than 120	5	Multiple episodes of diarrhea or vomiting	
Sweating: ove	r past 1/2 hour not accounted for by room temperature or patient	Tremor observation	on of outstretched hands	
activity.		0 No tremor		
0	No report of chills or flushing	1	Tremor can be felt, but not observed	
1	Subjective report of chills or flushing	2	Slight tremor observable	
2	Flushed or observable moistness on face	4	Gross tremor or muscle twitching	
3	Beads of sweat on brow or face	1000	And the state of t	
4	Sweat streaming off face			
Restlessness Observation during assessment		Yawning Observation during assessment		
0	Able to sit still	0	No yawning	
1	Reports difficulty sifting still, but is able to do so	1	Yawning once or twice during assessment	
3	Frequent shifting or extraneous movements of legs/arms	2	Yawning three or more times during assessment	
5	Unable to sit still for more than a few seconds	4	Yawning several times/minute	
Pupil size		Anxiety or irritabi		
0	Pupils pinned or normal size for room light	0	None	
ì	Pupils possibly larger than normal for room light	1	Patient reports increasing irritability or anxiousness	
2	Pupils moderately dilated	2	Patient obviously irritable anxious	
5	Pupils so dilated that only the rim of the iris is visible	4	Patient so irritable or anxious that participation in the	
	Tupus so diance that only the rain of the his is vision		assessment is difficult	
	aches If patient was having pain previously, only the additional	Gooseflesh skin		
component attributed to opiates withdrawal is scored		0	Skin is smooth	
0	Not present	3	Piloerrection of skin can be felt or hairs standing up or	
1	Mild diffuse discomfort		arms	
2	Patient reports severe diffuse aching of joints/muscles	5	Prominent piloerrection	
4	Patient is rubbing joints or muscles and is unable to sit still because of discomfort			
Runny nose o	t tearing Not accounted for by cold symptoms or allergies			
0	Not present	Total Score The total score is the sum of all 11 items Initials of person completing Assessment:		
1	Nasal stuffiness or unusually moist eyes			
2	Nose running or tearing			
4	Nose constantly running or tears streaming down cheeks			

Score: 5-12 mild; 13-24 moderate; 25-36 moderately severe; more than 36 = severe withdrawal

Multi-Society Working Group Recommendations





Starting Buprenorphine, in the perioperative period, in pt with suspected MOUD

Grade B Moderate Level of Certainty



When possible Anesthesiologists/pain physicians consider starting buprenorphine for post-operative analgesia in patients with suspected OUD

When possible Anesthesiologists/pain physicians should help facilitate linkage to outpatient buprenorphine prescribers

Starting Buprenorphine, in the perioperative period, in pt with suspected MOUD

Grade C Low Level of Certainty

Anesthesiologists can still consider initiating buprenorphine even if follow up with an outpatient buprenorphine provider has not been established

It is the group's consensus to advocate for the elimination of barriers to prescribing buprenorphine for patients with OUD.

We also advocate the physicians obtain education in MOUD and xwaiver certification.

General Summary

- OUD is a public health crisis
- There is a gap between pt's with OUD and those receiving tx
- We are in a prime position to be able to do something
- Buprenorphine can be safely initiated in the perioperative setting by anesthesia led teams
 - Linkage to outpatient buprenorphine prescriber is recommended

Do I need an X-waiver?



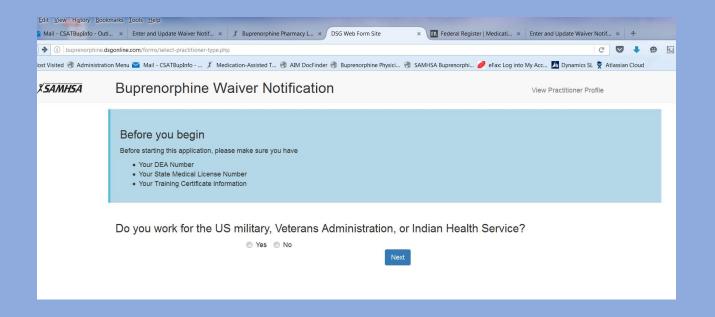
Drug Addiction Treatment Act (DATA) 2000

- Permitted qualified physicians to treat opioid addiction with Schedule III, IV, and V medications (i.e. only bup)
- Requires 8 hours of training for physicians, 24 hours for APPs
- DEA will have an "X" at the beginning when prescribing milligram-dose buprenorphine for OUD
- Apply to SAMHSA (Substance Abuse Mental Health Services Administration) to complete waiver process
- "The practitioner [must have] the capacity to <u>provide</u> directly, by referral, [or in another manner] <u>appropriate counseling and other appropriate ancillary</u> services."

New Requirements

- April 2021
 - HHS removes some x waiver barriers
 - For physicians treating up to 30 pts
 - No longer requires completing 8 hours of training certification
 - No longer requires capacity to provide counseling and ancillary services

Submit a 30 Patient Notification of Intent (NOI) Form





https://buprenorphine.samhsa.gov/forms/select-practitioner-type.php

Should our anesthesia/pain trainees get X-waivers?

Daring discourse

One prescription for the opioid crisis: require buprenorphine waivers for pain medicine fellows

Mark C Bicket , 1,2 Shravani Durbhakula 1

Editorial

One prescription for the opioid crisis: require buprenorphine waivers for pain medicine fellows

Lynn Kohan

Questions