The Interface of Pain and Addiction in CL

Claire Twark, MD
Associate Psychiatrist, Brigham and Women's Hospital
Instructor in Psychiatry, Harvard Medical School
Director, Athlete Mind Program

Some slides adapted from presentations originally by:
Joji Suzuki, MD and Claudia Rodriguez, MD

Financial disclosures:

- Sermo: gift cards for brief surveys on general psychiatric topics

“Pain is an unpleasant sensory and emotional experience, associated with actual or threatened tissue damage, or described in terms as such.”

International Association for the Study of Pain
Task Force on Taxonomy, 1994

Objectives

- Determine how to evaluate a patient with pain
- Manage medications for opioid use disorder (MOUD) in combination with other medications for acute pain
- Discuss treatment challenges in the absence of an existing OUD diagnosis

Objectives

- Determine how to evaluate a patient with pain
- Manage medications for opioid use disorder (MOUD) in combination with other medications for acute pain
- Discuss treatment challenges in the absence of an existing OUD diagnosis

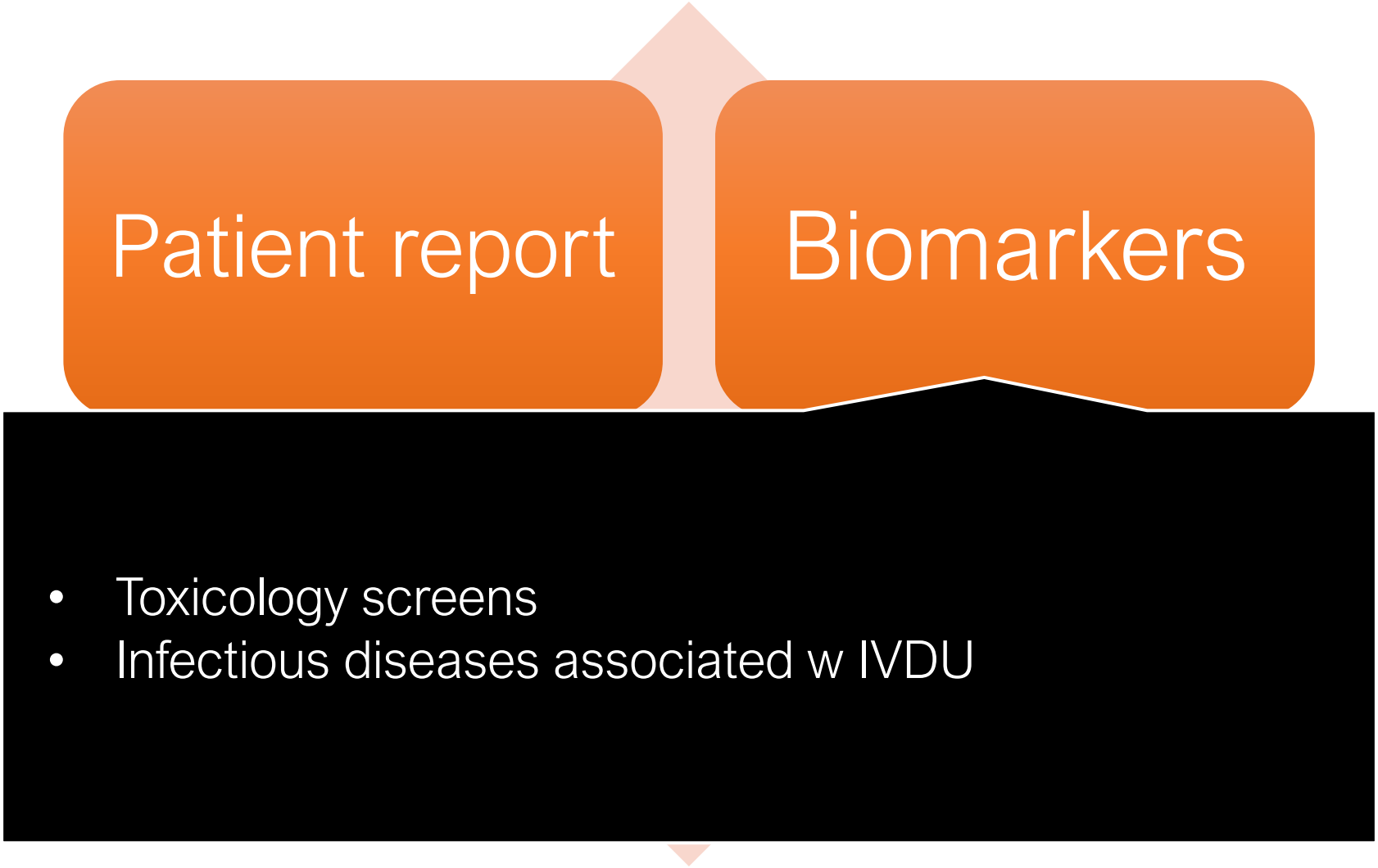
Assessment framework

Patient report

- Can be a helpful way to build rapport
- Ask how pain has been managed during past admissions

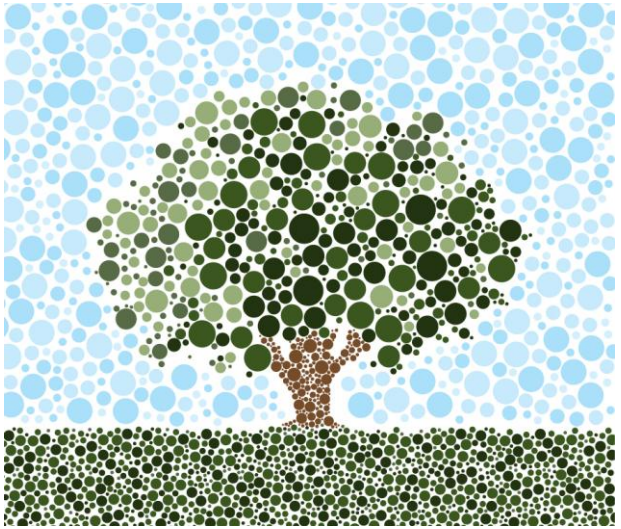
- Type (sharp, dull, burning)
- Intensity (0-10) before & after medication doses
- Location
- Duration
- Aggravating/alleviating factors

Assessment framework



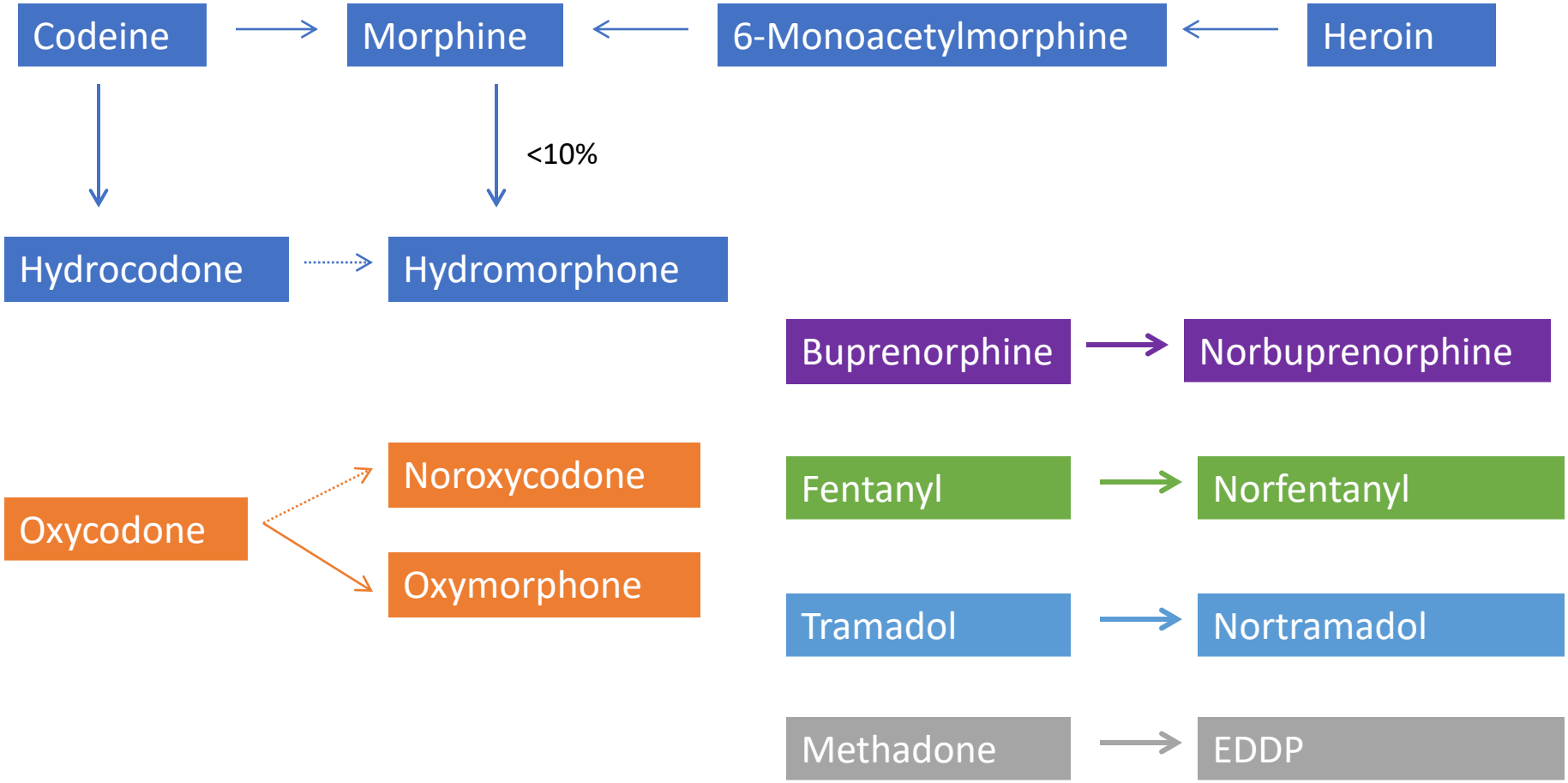
2 main types of toxicology tests

- Immunoassay aka “screening test”
  - Lab based or at “point of care”
  - Identify drug as present or absent based on cut off
  - Based on competitive binding
  - False positives and negatives
  - Fast



- Laboratory based drug identification aka “confirmatory test”
  - Gas chromatography/mass spectrometry
  - Liquid chromatography/mass spectrometry
  - Slow

Opioid metabolism



Assessment framework

- Prescription Monitoring Program
- Outpatient providers
- Other inpatient providers/past records
- Family/supports

Collateral sources

Objective Behavior

- Appearing intoxicated (pinpoint pupils, nodding off)
- NO change in pain rating after dosing
- Incongruence between pain score and behavior
- Preoccupation with pain medications
- Leaving floor without permission or at odd hours
- Appearing intoxicated after returning, or after visitors leave
- Requesting specific route or medication
- Visitors who are intoxicated
- Family or prescriber voicing concern

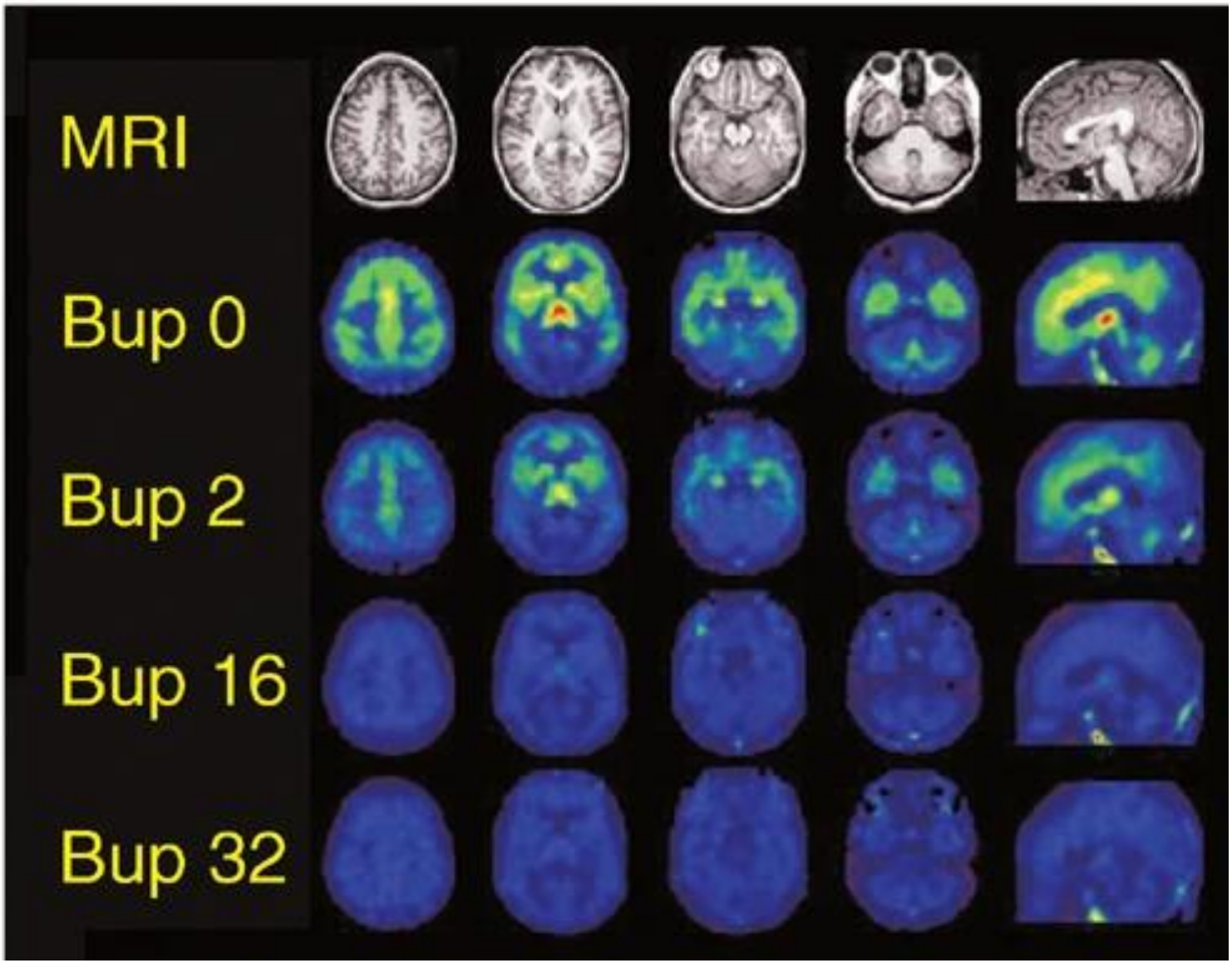
Objective Behavior

- Evidence of tampering with IV lines ("white powder sign")
- Evidence of hoarding or cheeking of pain medications
- Illicit drugs found in room
- Witnessed using drugs
- Overdosing

Objectives

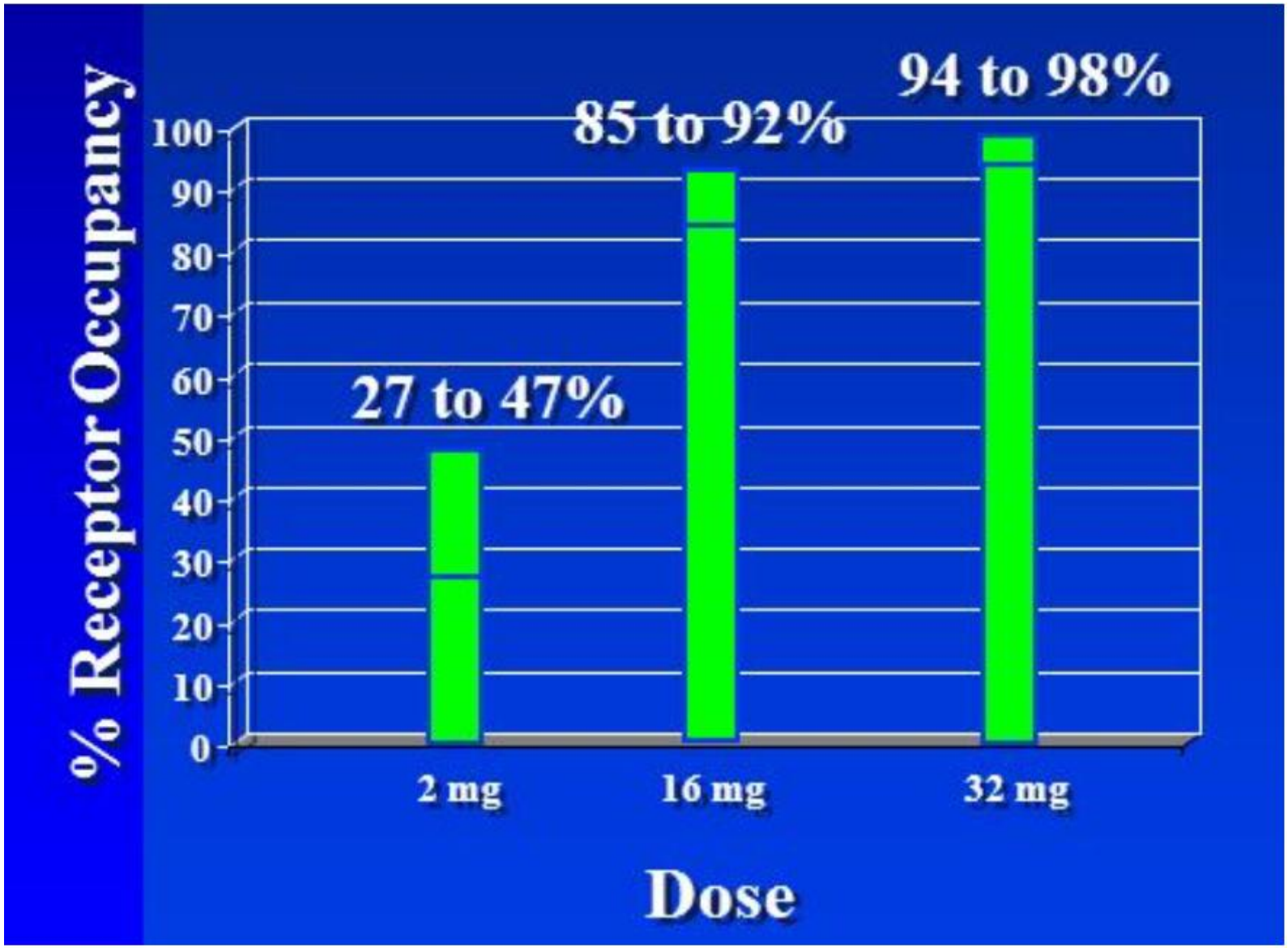
- Determine how to evaluate a patient with pain
- Manage medications for opioid use disorder (MOUD) in combination with other medications for acute pain
- Discuss treatment challenges in the absence of an existing OUD diagnosis

Mu-opioid receptor availability ↓ as buprenorphine dose ↑



Greenwald et al., 2003

Mu-opioid receptor availability ↓ as buprenorphine dose ↑



Greenwald et al., 2003

Max daily dose of buprenorphine?

- In response to advocacy by the AMA, the FDA has clarified that buprenorphine labeling does not require a max dose restriction and dosage decisions should be made on an individualized basis.
- AMA is urging all payers & states to remove policies that include a maximum dose restriction.
- For many buprenorphine products used for OUD, FDA labels downplayed effectiveness of doses >24 mg, but this doesn't reflect illicitly manufactured & highly potent fentanyl

https://www.ama-assn.org/delivering-care/behavioral-health/fda-moves-change-labeling-buprenorphine-dosing

Association of Daily Doses of Buprenorphine With Urgent Health Care Utilization

- **Question** Are buprenorphine doses that are higher than FDA recommendations associated w subsequent acute health care utilization?
- **Findings** Cross-sectional study using health care claims from 35,451 US adults w OUD, those receiving higher max doses of buprenorphine (>16 mg and 24 mg) had significantly lower rates of acute care utilization than peers receiving FDA-recommended doses (8-16 mg).
- **Meaning** Higher doses of buprenorphine are associated w lower acute care utilization & could benefit patients, esp. those using fentanyl.

Axeen et al, 2024

Mass General Brigham

Guideline for Perioperative Management of Opioid Tolerant Patients and Patients Treated with Medications for Opioid Use Disorder (MOUD)

Methadone (through a clinic)

- Continue daily methadone with patient's clinic up until the day of surgery
- On day of surgery, daily methadone given PO or IV by anesthesiologist if unable to receive daily dose from their clinic
- After surgery, continue methadone, preferably with the same once-daily dose & schedule

True or False?

A patient's usual methadone dose is expected to treat acute pain

True or False?

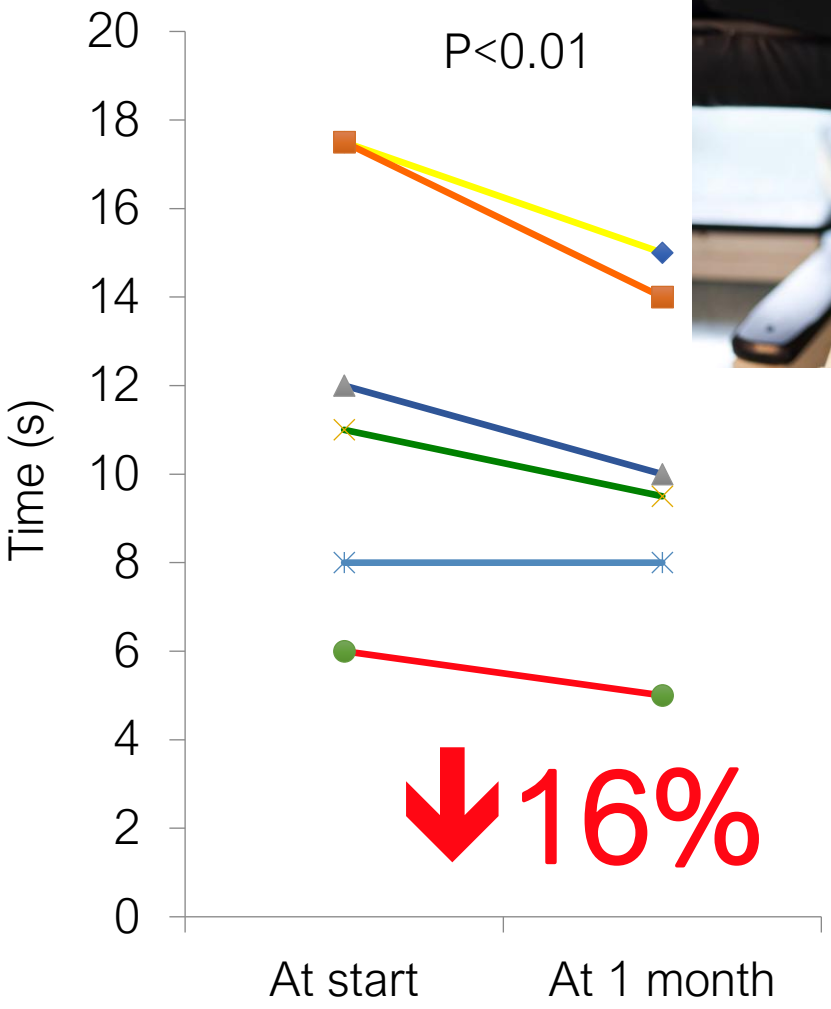
A patient's usual buprenorphine dose is NOT expected to treat acute pain

Opioid-induced Hyperalgesia

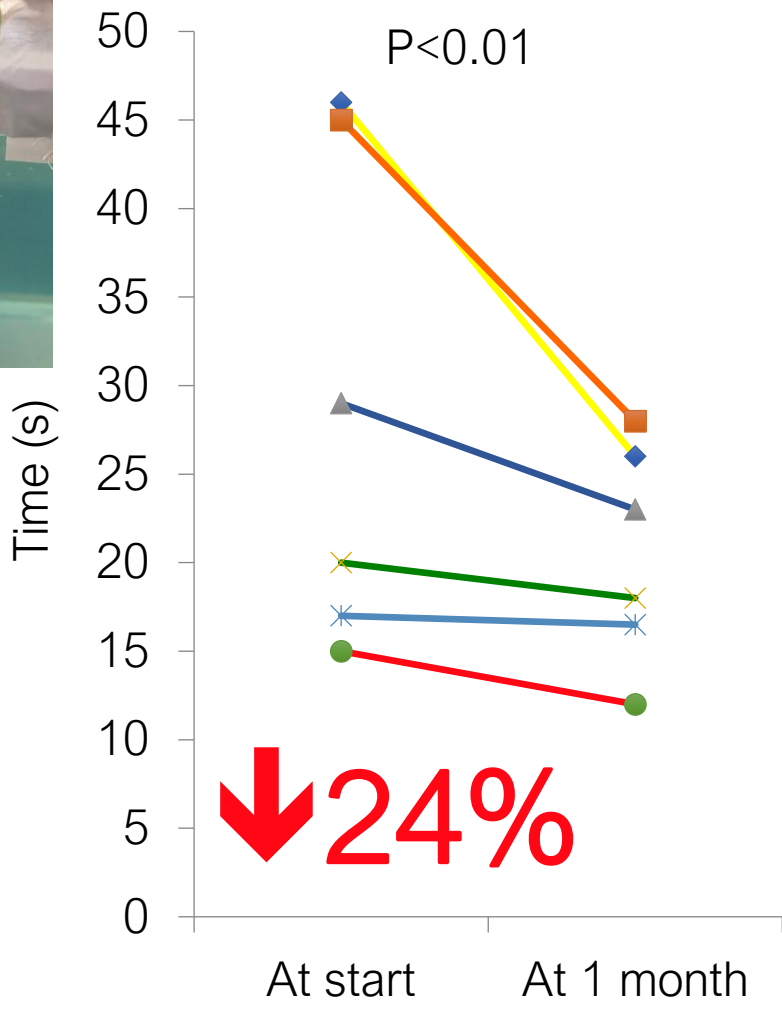
"Somewhat paradoxically, opioid therapy aiming at alleviating pain may render patients more sensitive to pain and potentially may aggravate their preexisting pain."

Angst & Clark, 2006

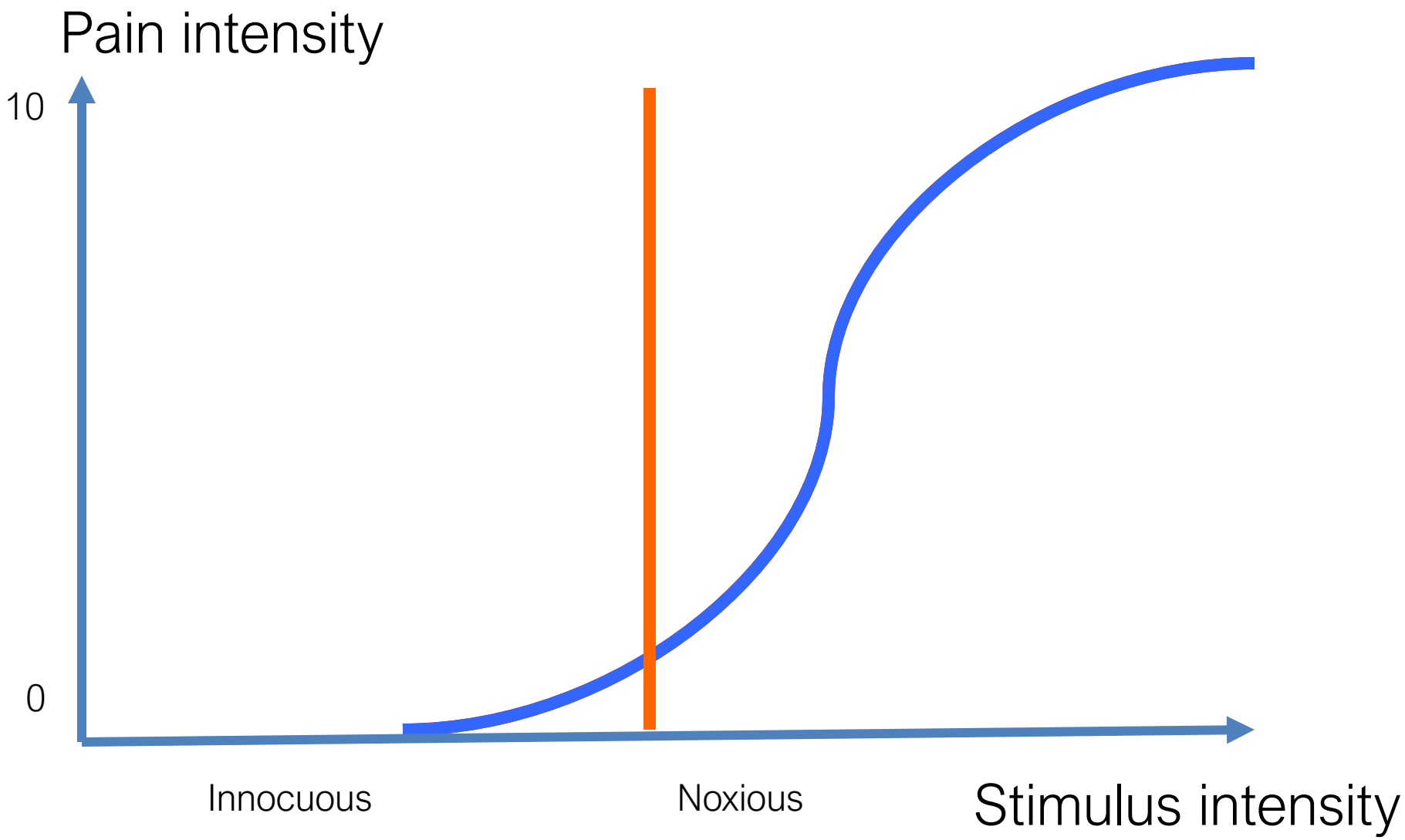
Pain threshold



Pain tolerance



Chu et al, 2006


Pain intensity
10
0
Innocuous
Noxious
Stimulus intensity

For all patients, continue buprenorphine-naloxone throughout the perioperative period, following these steps:

Step 1: Determine total 24-hour **home dose of buprenorphine** (regardless of any naloxone component)

- *If home dose is* **≤ 8 mg per day**: **Continue home dose**[1] throughout perioperative period[5] (do *not* discontinue prior to surgery); no need to proceed further in the algorithm.
- *If home dose is* **> 8 mg per day** (excludes obstetric patients[3]): *Proceed to Step 2.*

LOW OPIOID REQUIREMENTS[4]	**Continue home regimen**[1] (do not discontinue prior to surgery and continue home dose throughout the perioperative period)[5]

Step 2: Determine **anticipated opioid requirements/pain after surgery**[4]

Anticipated post-operative opioid requirements	*Before surgery*	*On day of surgery and throughout hospital stay*	*Preparing for discharge*[5]
MODERATE TO HIGH OPIOID REQUIREMENTS			

IF HOME DOSE ≤ 16 MG

Consider continuing home dose if reliable continuous regional anesthesia techniques are available and based on patient and clinician preference; *Refer to Step 3*

Step 2: Determine **anticipated opioid requirements/pain after surgery**[4]

Anticipated post-operative opioid requirements	*Before surgery*	*On day of surgery and throughout hospital stay*	*Preparing for discharge*[5]
MODERATE TO HIGH OPIOID REQUIREMENTS	***IF HOME DOSE > 16 MG*** • **Consider titrating dose down**[1-2, 5] so that **on the day before surgery**, total buprenorphine dose is 16 mg daily (e.g., on day prior to procedure preferably drop to 8 mg BID vs. 16 mg as a single dose) • **May consider continuing home dose** if reliable continuous regional anesthesia techniques are available or based on patient and clinician preference		
	IF HOME DOSE ≤ 16 MG **Consider continuing home dose** if reliable continuous regional anesthesia techniques are available and based on patient and clinician preference; *Refer to Step 3*		

Step 2: Determine **anticipated opioid requirements/pain after surgery**[4]

Anticipated post-operative opioid requirements	*Before surgery*	*On day of surgery and throughout hospital stay*	*Preparing for discharge*[5]
MODERATE TO HIGH OPIOID REQUIREMENTS	***IF HOME DOSE > 16 MG***		
	• **Consider titrating dose down**[1-2, 5] so that **on the day before surgery**, total buprenorphine dose is 16 mg daily (e.g., on day prior to procedure preferably drop to 8 mg BID vs. 16 mg as a single dose) • **May consider continuing home dose** if reliable continuous regional anesthesia techniques are available or based on patient and clinician preference	• Consider decreasing to **buprenorphine 8 mg per day *on day of surgery*** (preferably 4 mg BID vs. 8 mg daily) • **Anticipate need for higher opioid agonist dose requirement**, similar to opioid tolerant patients maintained on methadone • **Use additional opioid agonists as needed**; *Refer to Step 3*	
	IF HOME DOSE ≤ 16 MG		
	Consider continuing home dose if reliable continuous regional anesthesia techniques are available and based on patient and clinician preference; *Refer to Step 3*		

Step 2: Determine **anticipated opioid requirements/pain after surgery**[4]

Anticipated post-operative opioid requirements	*Before surgery*	*On day of surgery and throughout hospital stay*	*Preparing for discharge*[5]
MODERATE TO HIGH OPIOID REQUIREMENTS	***IF HOME DOSE > 16 MG***		
	• **Consider titrating dose down**[1-2, 5] so that **on the day before surgery**, total buprenorphine dose is 16 mg daily (e.g., on day prior to procedure preferably drop to 8 mg BID vs. 16 mg as a single dose) • **May consider continuing home dose** if reliable continuous regional anesthesia techniques are available or based on patient and clinician preference	• Consider decreasing to **buprenorphine 8 mg per day *on day of surgery*** (preferably 4 mg BID vs. 8 mg daily) • **Anticipate need for higher opioid agonist dose requirement**, similar to opioid tolerant patients maintained on methadone • **Use additional opioid agonists as needed**; *Refer to Step 3*	• Provide a **post-discharge taper plan** for full agonist opioids • Ideally, **increase back to buprenorphine home dose** at time of discharge • Transition care back to **patient's outpatient buprenorphine prescriber** for ongoing care with plan to increase back to original home buprenorphine dose[5]
	IF HOME DOSE ≤ 16 MG		
	Consider continuing home dose if reliable continuous regional anesthesia techniques are available and based on patient and clinician preference; *Refer to Step 3*		

For all patients, continue buprenorphine-naloxone throughout the perioperative period, following these steps:

Step 1: Determine total 24-hour **home dose of buprenorphine** (regardless of any naloxone component)

- *If home dose is* **≤ 8 mg per day**: **Continue home dose**[1] throughout perioperative period[5] (do *not* discontinue prior to surgery); no need to proceed further in the algorithm.
- *If home dose is* **> 8 mg per day** (excludes obstetric patients[3]): *Proceed to Step 2.*

Step 2: Determine **anticipated opioid requirements/pain after surgery**[4]

Anticipated post-operative opioid requirements	*Before surgery*	*On day of surgery and throughout hospital stay*	*Preparing for discharge*[5]
MODERATE TO HIGH OPIOID REQUIREMENTS	***IF HOME DOSE > 16 MG*** • **Consider titrating dose down**[1-2, 5] so that **on the day before surgery**, total buprenorphine dose is 16 mg daily (e.g., on day prior to procedure preferably drop to 8 mg BID vs. 16 mg as a single dose) • **May consider continuing home dose** if reliable continuous regional anesthesia techniques are available or based on patient and clinician preference	• Consider decreasing to **buprenorphine 8 mg per day *on day of surgery*** (preferably 4 mg BID vs. 8 mg daily) • **Anticipate need for higher opioid agonist dose requirement**, similar to opioid tolerant patients maintained on methadone • **Use additional opioid agonists as needed**; *Refer to Step 3*	• Provide a **post-discharge taper plan** for full agonist opioids • Ideally, **increase back to buprenorphine home dose** at time of discharge • Transition care back to **patient's outpatient buprenorphine prescriber** for ongoing care with plan to increase back to original home buprenorphine dose[5]
	IF HOME DOSE ≤ 16 MG **Consider continuing home dose** if reliable continuous regional anesthesia techniques are available and based on patient and clinician preference; *Refer to Step 3*		
LOW OPIOID REQUIREMENTS[4]	**Continue home regimen**[1] (do not discontinue prior to surgery and continue home dose throughout the perioperative period)[5]		

*Included in reference section

Patients' experiences with continuation or discontinuation of buprenorphine before painful procedures: A brief report

- Compared with patients whose home dose of buprenorphine was continued (*n* = 15), patients whose buprenorphine was discontinued preoperatively (*n* = 17) reported less satisfaction with pain management & were more likely to be prescribed full agonist opioids upon discharge.

Hathaway et al., 2023

Objectives

- Determine how to evaluate a patient with pain
- Manage medications for opioid use disorder (MOUD) in combination with other medications for acute pain
- Discuss treatment challenges in the absence of an existing OUD diagnosis

Identify OUD based on DSM-5

Questions about your use of [name of opioid(s)] in the past 12 months:

- Have you often found that when you started using XX, you ended up **taking more than you intended** to?
- Have you **wanted to stop or cut down** using or control your use of XX?
- Have you spent **a lot of time** getting XX or using XX?
- Have you had a **strong desire or urge** to use XX?

Identify OUD based on DSM-5

- Have you **missed work or school** or often arrived late because you were intoxicated, high or recovering from the night before?
- Has your use of XX **caused problems with other people** such as with family members, friends or people at work?
- Have you had to **give up or spend less time** working, enjoying hobbies, or being with others because of your drug use?
- Have you ever gotten **high before doing something that requires coordination or concentration** like driving, boating, climbing a ladder, or operating heavy machinery?

Identify OUD based on DSM-5

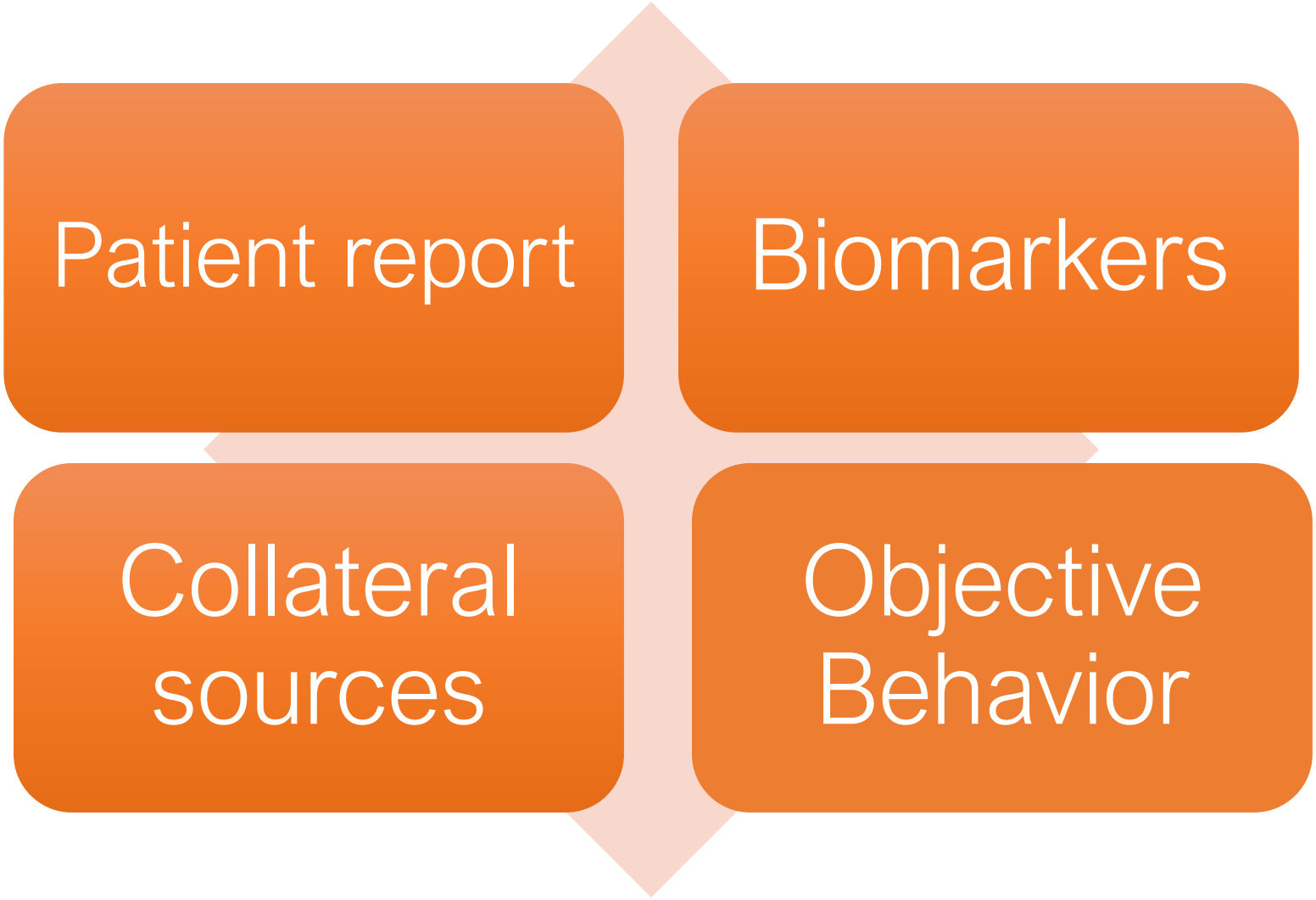
- Have you continued to use even though you knew that the drug caused you problems like making you **depressed, anxious, agitated or irritable**?
- Have you found you needed to **use much more** drug to get the same effect that you did when you first started taking it?
- When you reduced or stopped using, did you have **withdrawal** symptoms or feel sick (aches, shaking, fever, weakness, diarrhea, nausea, sweating, heart pounding, difficulty sleeping, or feel agitated, anxious, irritable, or depressed)?

Current Severity

Do NOT diagnose a mild OUD based on the expected tolerance & withdrawal from an Rx'd opioid if only those 2 criteria are met.

- Mild: Presence of 2-3 symptoms.
- Moderate: Presence of 4-5 symptoms.
- Severe: Presence of 6+ symptoms.

Assessment framework



Thank you!

Step 3 of MGB perioperative pain management for reference

Step 3: Identify **strategies for managing unanticipated acute pain and NPO**

- When moderate to severe post-operative pain is expected, optimize multimodal approach, regional blocks or neuraxial anesthesia if indicated and a high affinity **IV opioid**. **Higher doses** may be necessary to compete with buprenorphine for occupation of receptors.
- **Close post-operative monitoring will be required** as daily doses of opioids must be reassessed frequently.
- The half-life of buprenorphine varies depending on the dose and route it was last given. As levels decrease, a lower dose of opioid may be required.
- Continuing sublingual buprenorphine may be appropriate for some patients who are NPO. If they can hold the sublingual buprenorphine under their tongue without swallowing, the dose will be absorbed.
- Different dosage forms of buprenorphine or buprenorphine/naloxone are NOT bioequivalent (see Tables 1-3).

Footnotes / additional recommendations

1. The plan for dose reduction should be a **shared decision** made between the patient, anesthesiologist, and primary buprenorphine prescriber.[5]

2. A **patient-specific plan** that is different from the above recommendations may be considered per patient and buprenorphine prescriber preference:

» Patient is encouraged to have a consultation and discussion with a **pain management physician**

» This may include the continuation of the buprenorphine at the admitting dose throughout the perioperative period.

3. For **obstetric patients**, do *not* interrupt buprenorphine dosing in the perioperative period, regardless of dose.

4. Low opioid requirements: i.e., low / mild post-operative pain or procedures where historically less than five-day courses of low-dose oxycodone or hydrocodone are prescribed.

5. Prior to titrating the buprenorphine dose down, **addiction/pain services** should be consulted – if available – and team discussion should occur with all members of the care team. Upon discharge, care team will **contact patient's buprenorphine prescriber** and provide a handoff of management course and post discharge plan

References

1. Angst MS, Clark JD. Opioid-induced Hyperalgesia: A Qualitative Systematic Review. Anesthesiology. 2006 Mar 1;104(3):570–87.

2. Axeen S, Pacula RL, Merlin JS, Gordon AJ, Stein BD. Association of Daily Doses of Buprenorphine With Urgent Health Care Utilization. JAMA Netw Open. 2024;7(9):e2435478. doi:10.1001/jamanetworkopen.2024.35478

3. Brahm NC, Yeager LL, Fox MD, Farmer KC, Palmer TA. Commonly prescribed medications and potential false-positive urine drug screens. American Journal of Health-System Pharmacy. 2010 Aug 15;67(16):1344–50.

4. Chu LF, Clark DJ, Angst MS. Opioid Tolerance and Hyperalgesia in Chronic Pain Patients After One Month of Oral Morphine Therapy: A Preliminary Prospective Study. The Journal of Pain. 2006 Jan 1;7(1):43–8.

5. Grande LA, Cundiff D, Greenwald MK, Murray M, Wright TE, Martin SA. Evidence on Buprenorphine Dose Limits: A Review. J Addict Med. 2023 Sep-Oct 01;17(5):509-516. doi: 10.1097/ADM.0000000000001189. Epub 2023 Jun 16. PMID: 37788601; PMCID: PMC10547105.

6. Greenwald MK, Johanson CE, Moody DE, Woods JH, Kilbourn MR, Koeppe RA, et al. Effects of Buprenorphine Maintenance Dose on μ-Opioid Receptor Availability, Plasma Concentrations, and Antagonist Blockade in Heroin-Dependent Volunteers. Neuropsychopharmacol. 2003 Nov;28(11):2000–9.

7. Hathaway DB, Bhat JA, Twark C, Rodriguez C, Suzuki J. Patients' experiences with continuation or discontinuation of buprenorphine before painful procedures: A brief report. The American Journal on Addictions. 2023;32(4):410–4.

8. Saitman A, Park HD, Fitzgerald RL. False-Positive Interferences of Common Urine Drug Screen Immunoassays: A Review. Journal of Analytical Toxicology. 2014 Sep 1;38(7):387–96.