Treating Pain in People who use Substances

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- November 1, 2024

Nathan B

Age 19- gang related gun shot to spine; paraplegic from waist down

Early 20s began using heroin to help with pain in leg

Mid-20s developed decubitus ulcers from wheelchair; sniffed heroin daily to help with pain

Learning objectives

Describe	Describe a framework for acute pain management in the context of substance use disorder, especially opioid use disorder
Utilize	Utilize treatment approaches, including multimodal treatments, to manage chronic pain in patients with co-occurring chronic pain and SUD
Employ	Employ non-opioid medications that can be effective at helping manage chronic pain in patients with substance use disorder
Apply	Apply the safeguards needed for prescription opioid analgesia in patients with SUD

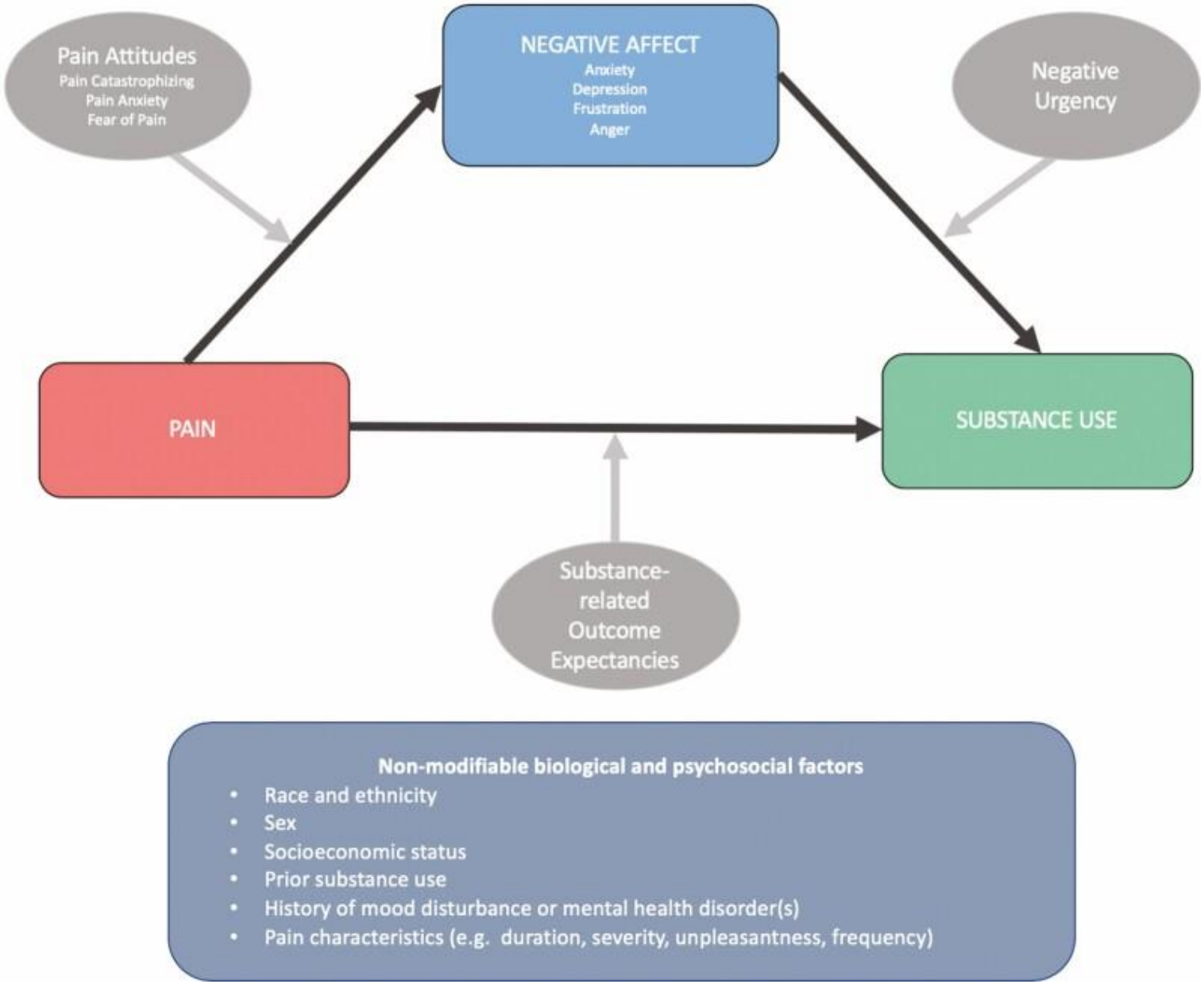
Increased vulnerabilities impact experience of pain

Liebschutz,2014, Current Treatment Options in Psychiatry

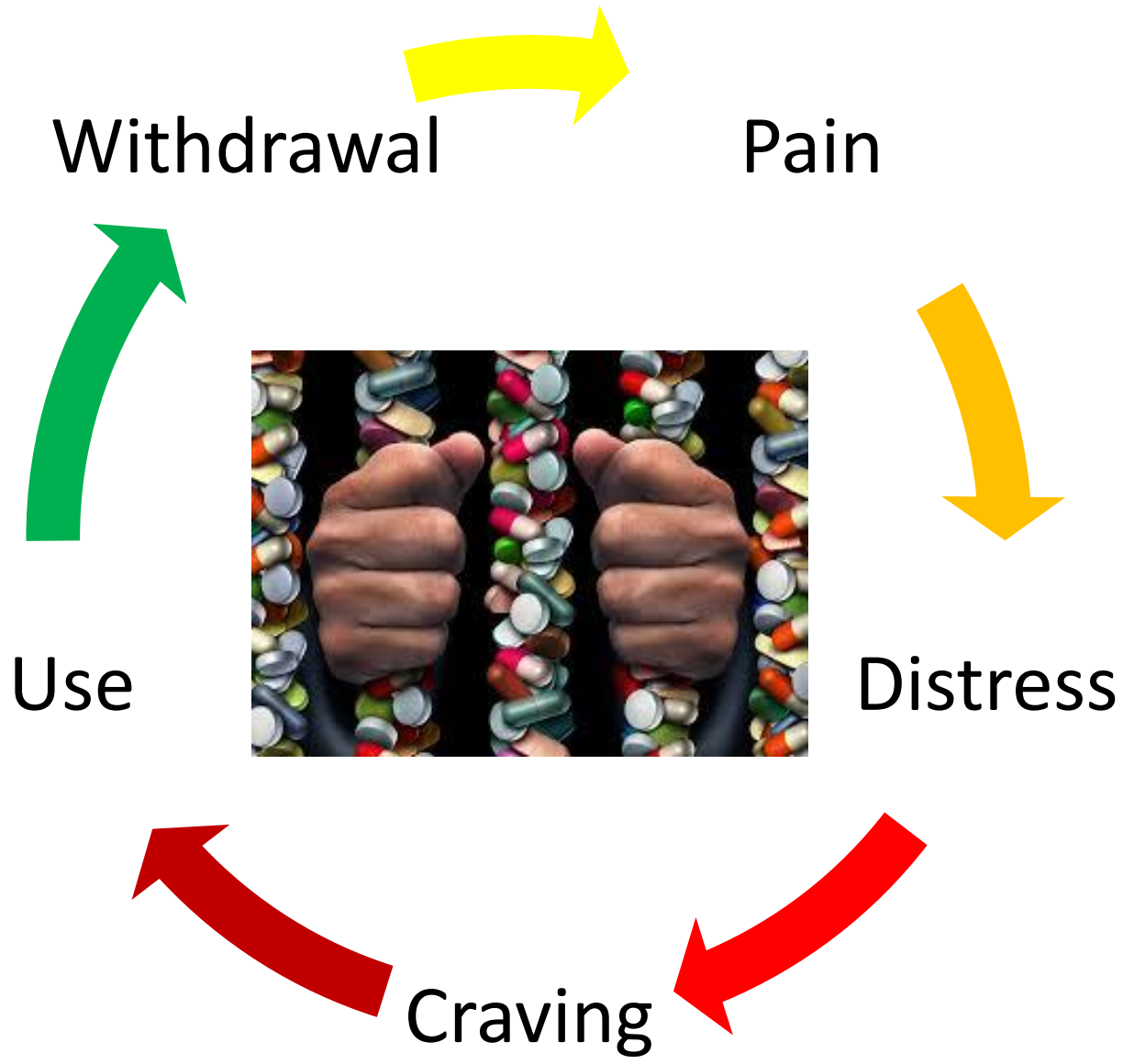
Other Factors Complicating Treatment

- Withdrawal/ongoing drug use
- Liver disease
- Co-occurring other substance use
- Few evidence-based treatments in patients with OUD

Catastrophizing, Anxiety, Negative Urgency, and Expectancy (CANUE)



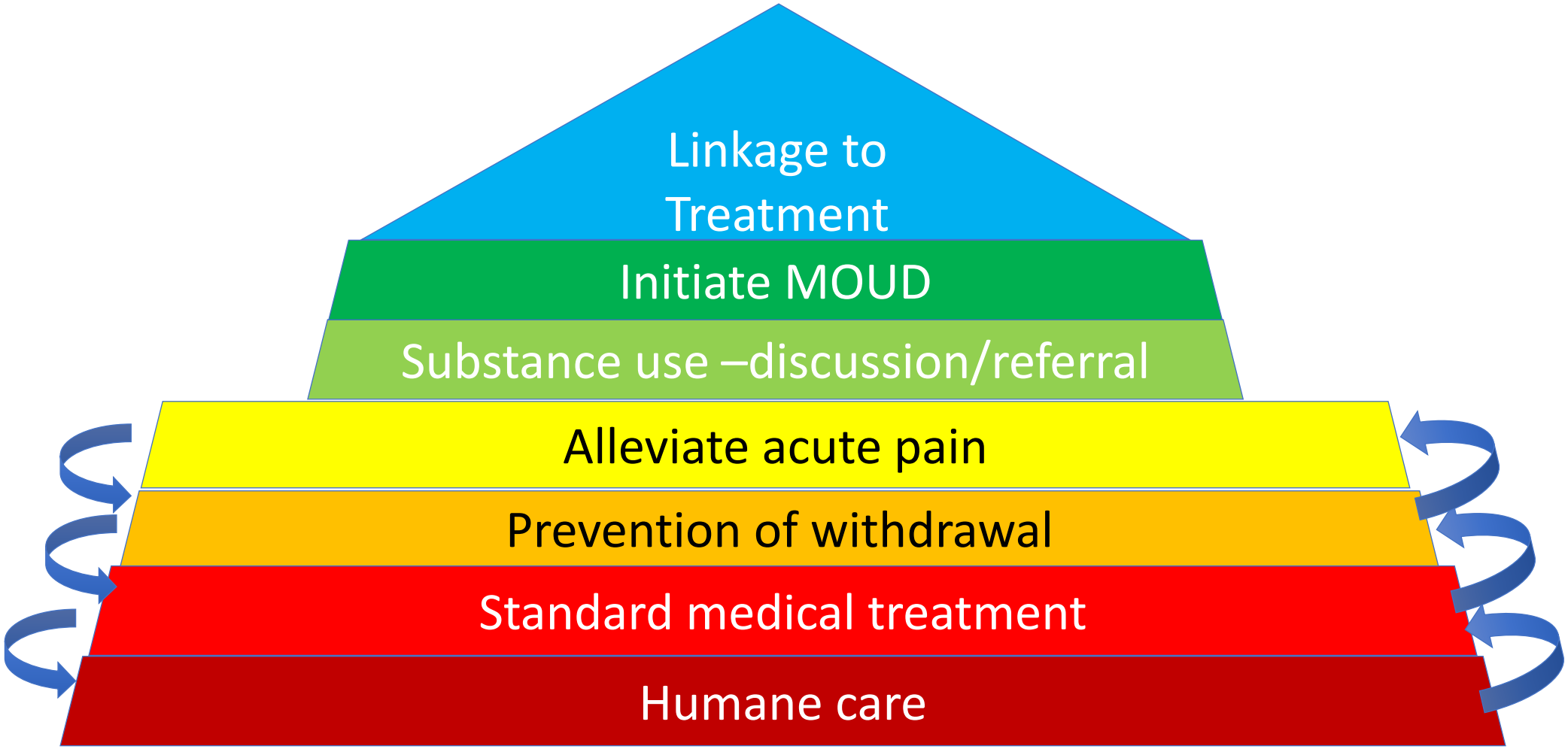
Ferguson 2021 Ann Behav Med



Pain impacts recovery from SUD

Dennis 2015 Substance Abuse: Research and Treatment
Ferguson 2021 Ann Behav Med
Edlund 2013 Clinical J of Pain

Goals of care



Humane care

Stigma

Erodes confidence that addiction is a valid and treatable health condition

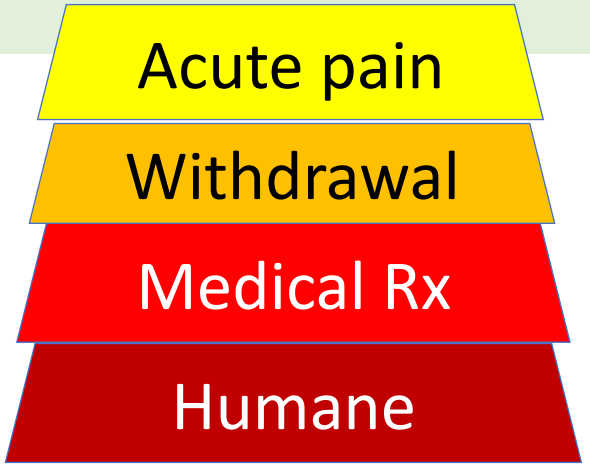
Impacts clinical care and treatment decisions

Van Boekel 2013 DAD

Non-stigmatizing language

Person who uses drugs PWUD
Person who injects drugs PWID

Case: Nathan at admission for wounds, pain



Doesn't think he has an opioid use disorder-

If the pain could go away, he doesn't think he would use opioids.

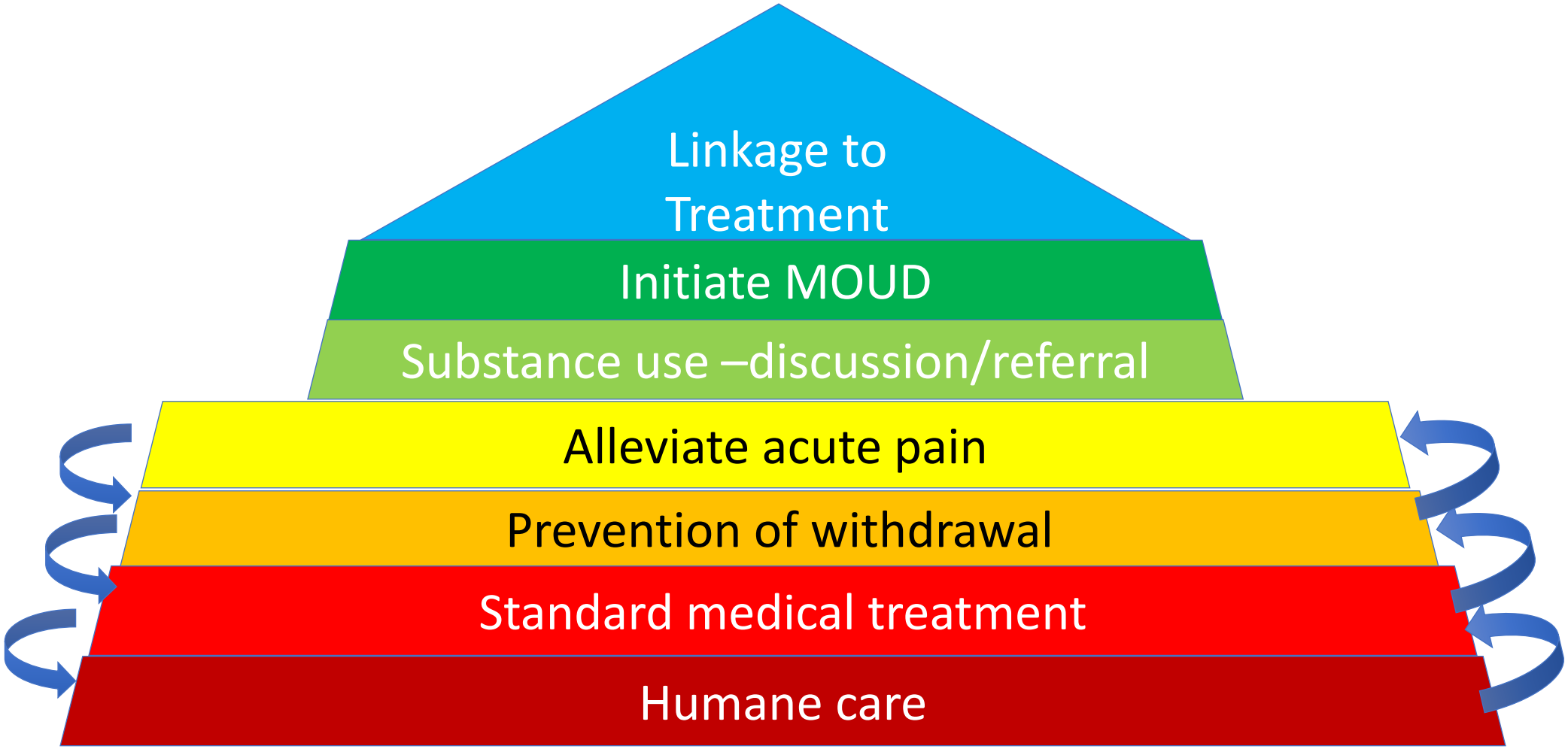
“Doc, it is too hard to get off methadone or suboxone. I don’t want them”

Clinical question: What is an optimal pain medication regimen in the hospital?

Options- what do you think?

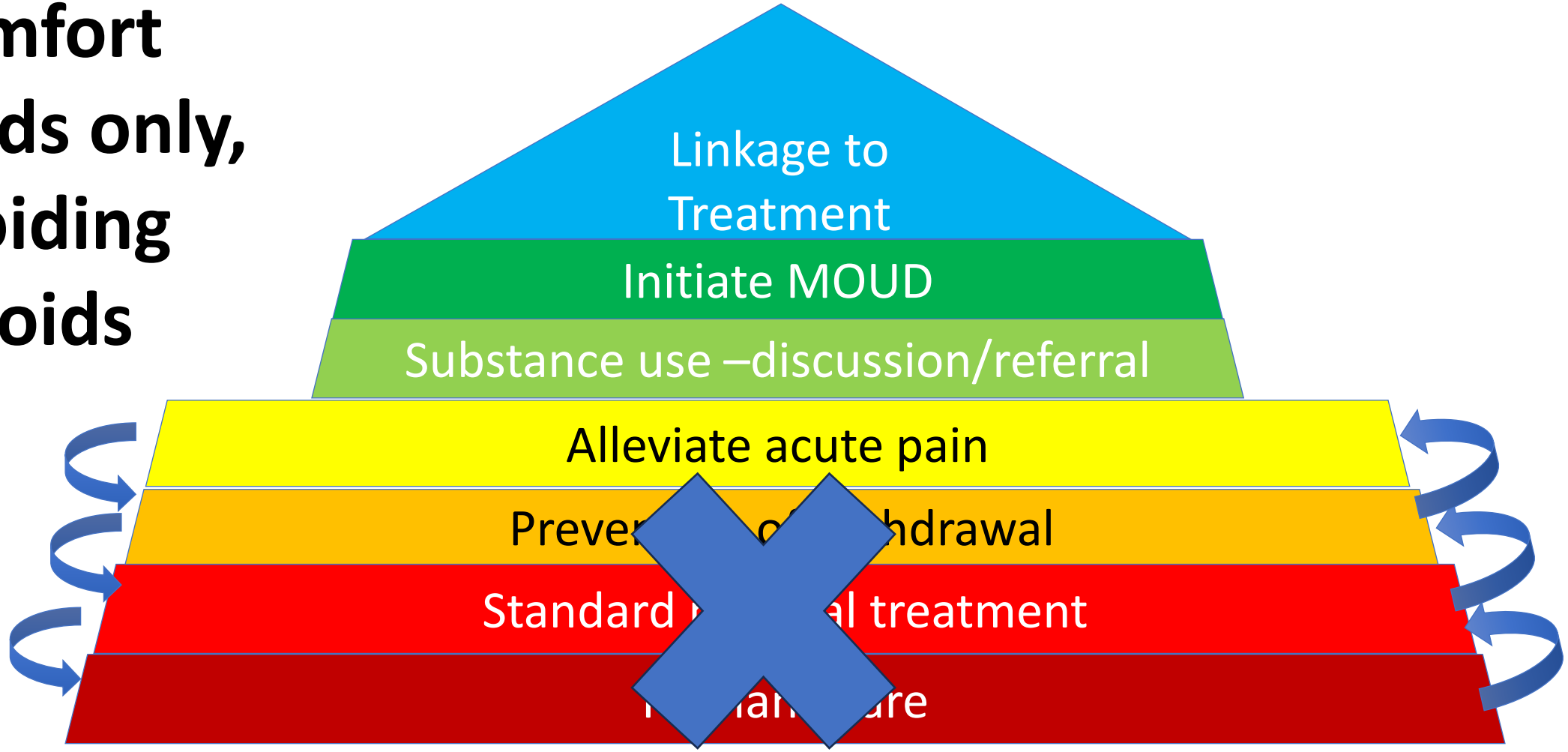
- Methadone
- Buprenorphine
- Full agonist opioids (such as oxycodone, hydromorphone, morphine)
- Comfort Meds only- avoid all opioids

Remember- What is the Goal of Care?

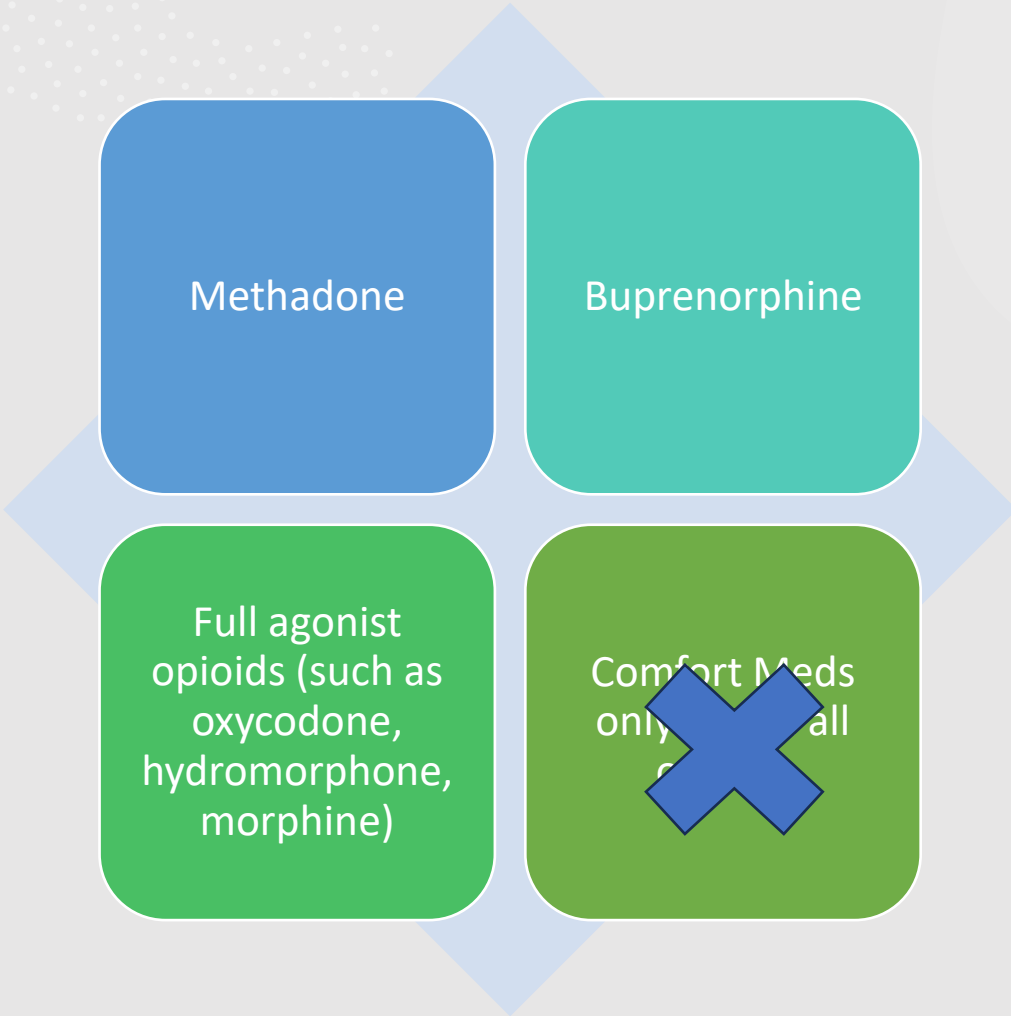


Remember- What is the Goal of Care

Comfort meds only, avoiding opioids



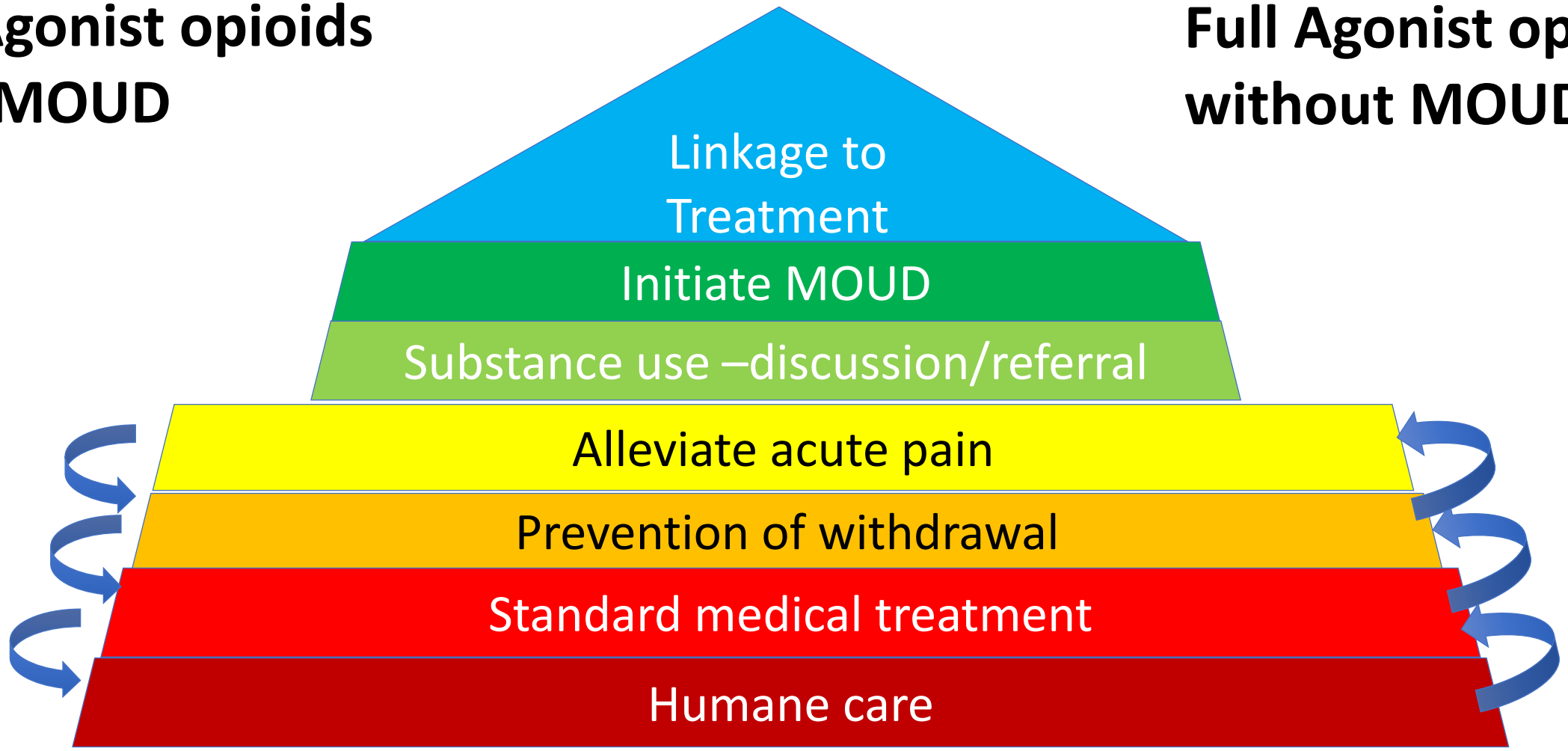
Options- what do you think?



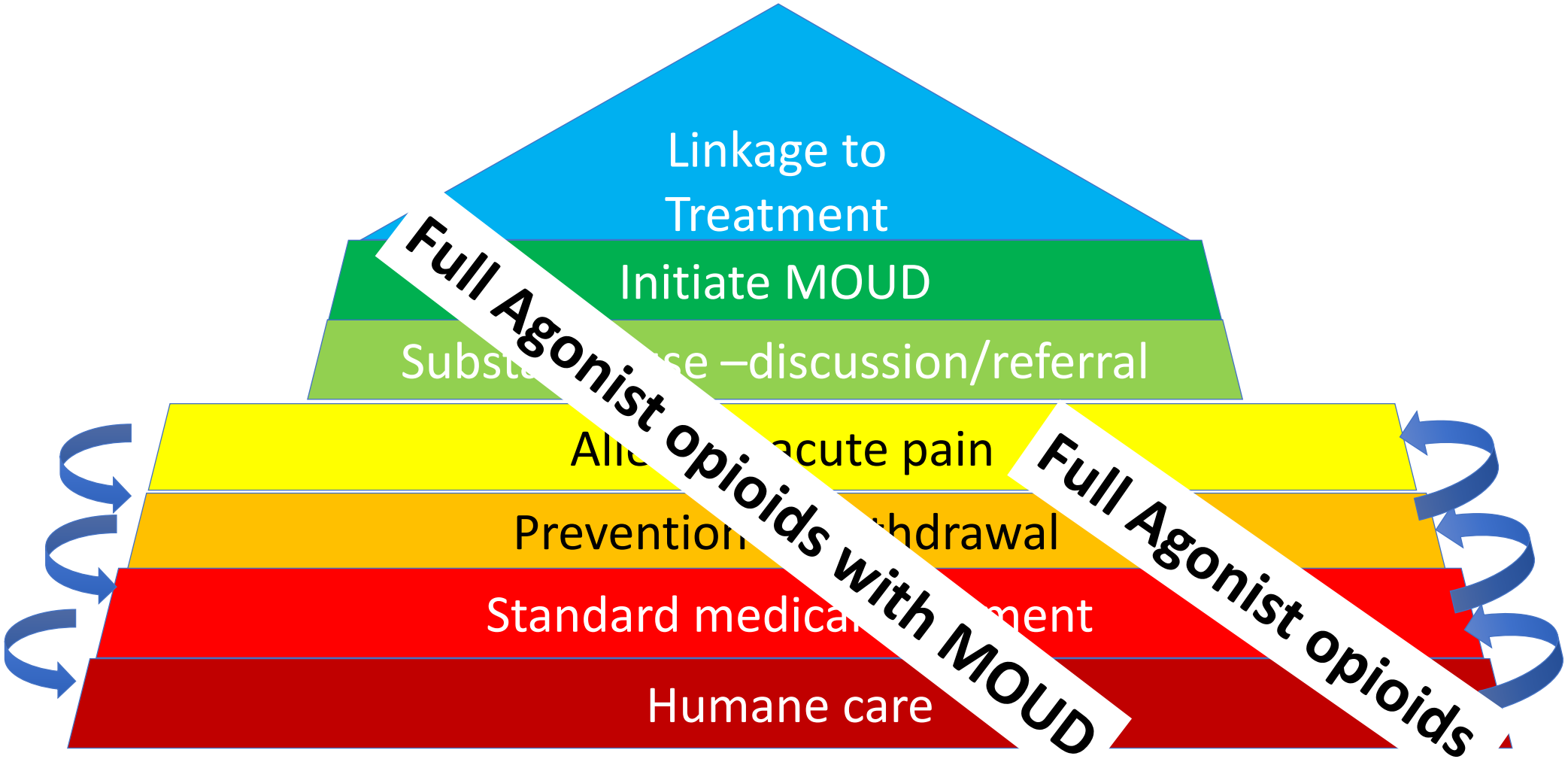
Remember- What is the Goal of Care

Full Agonist opioids with MOUD

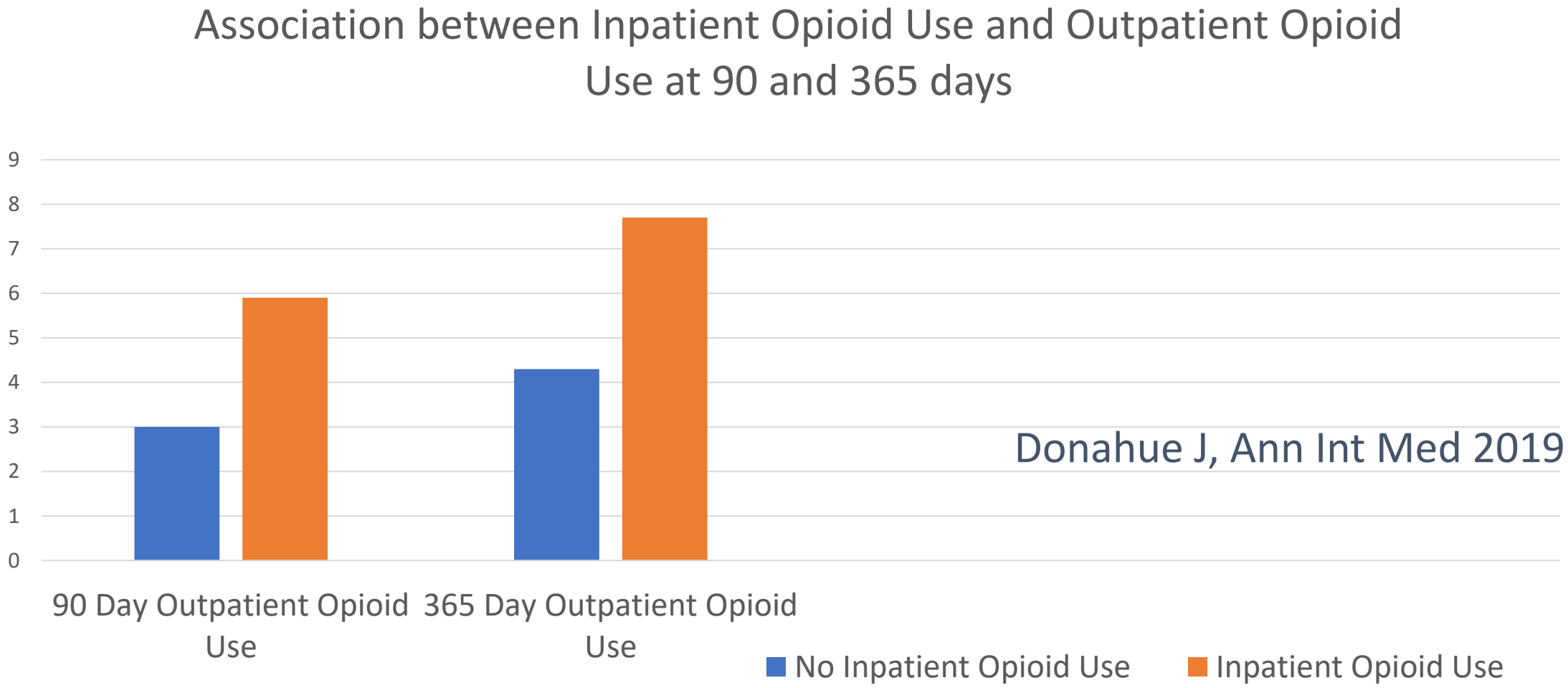
Full Agonist opioids without MOUD



Remember- What is the Goal of Care

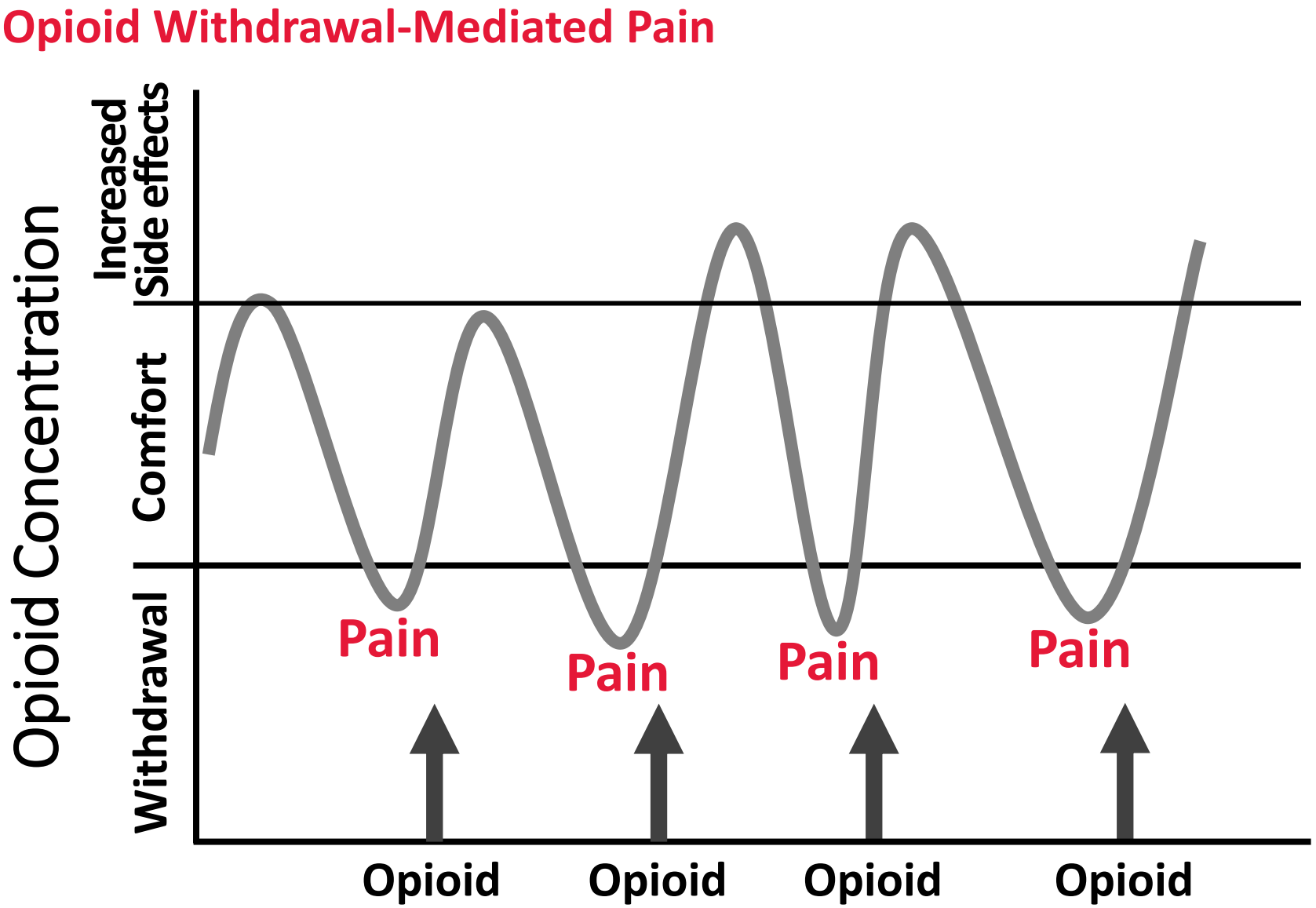


Should we be concerned about using opioids for pain?



Avoiding opioids while inpatient isn't going to impact a problem that developed long ago.

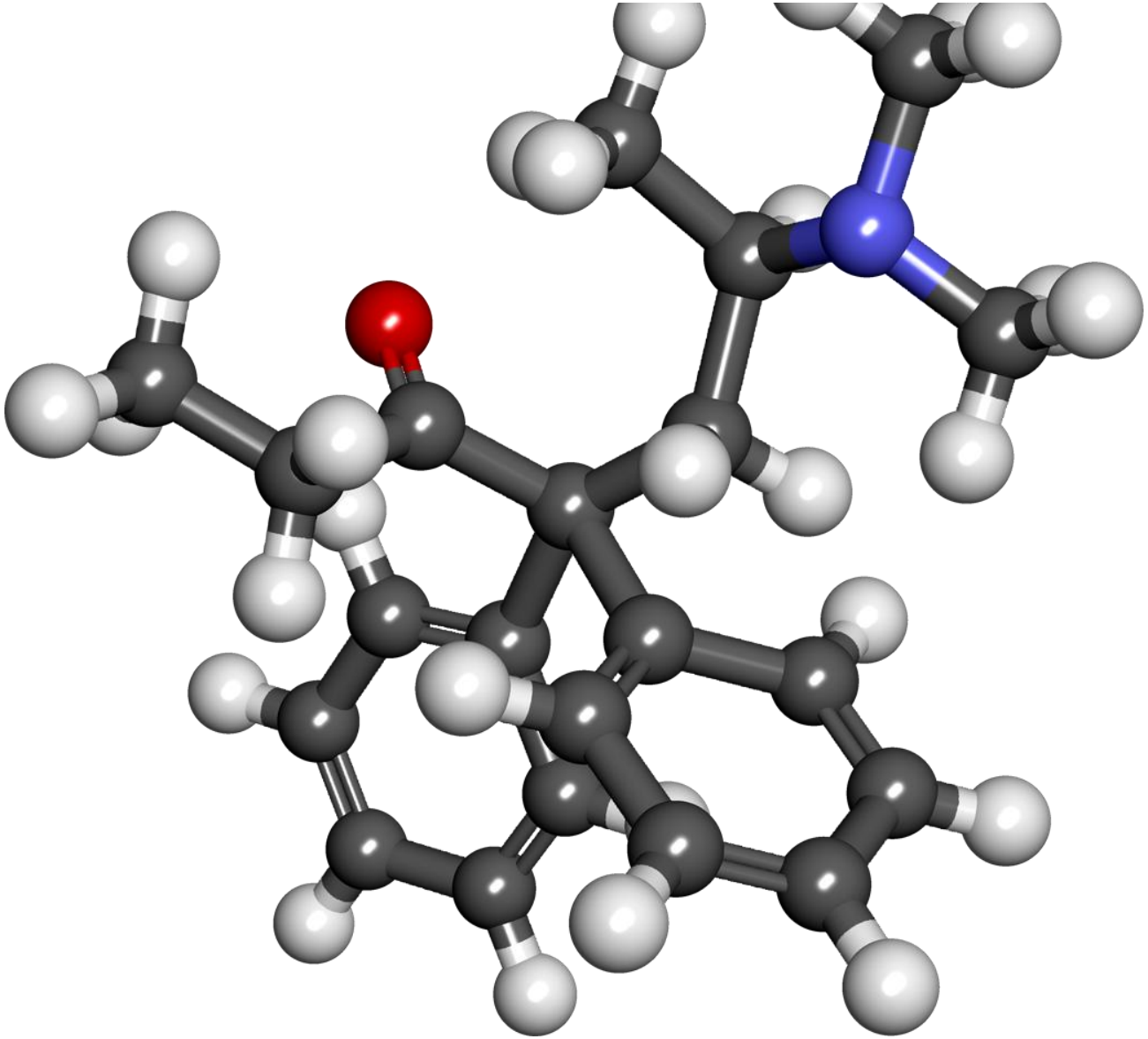
Theoretical Concern with IR/SA Opioids



Methadone

Mechanism of action

- ❑Agonist at the mu receptor.
- ❑Acts in the CNS and smooth muscle
- ❑Forms: Oral, Injectable
- ❑Lipophilic distribution



Pharmacokinetics

Long and variable half-life for sedation, withdrawal

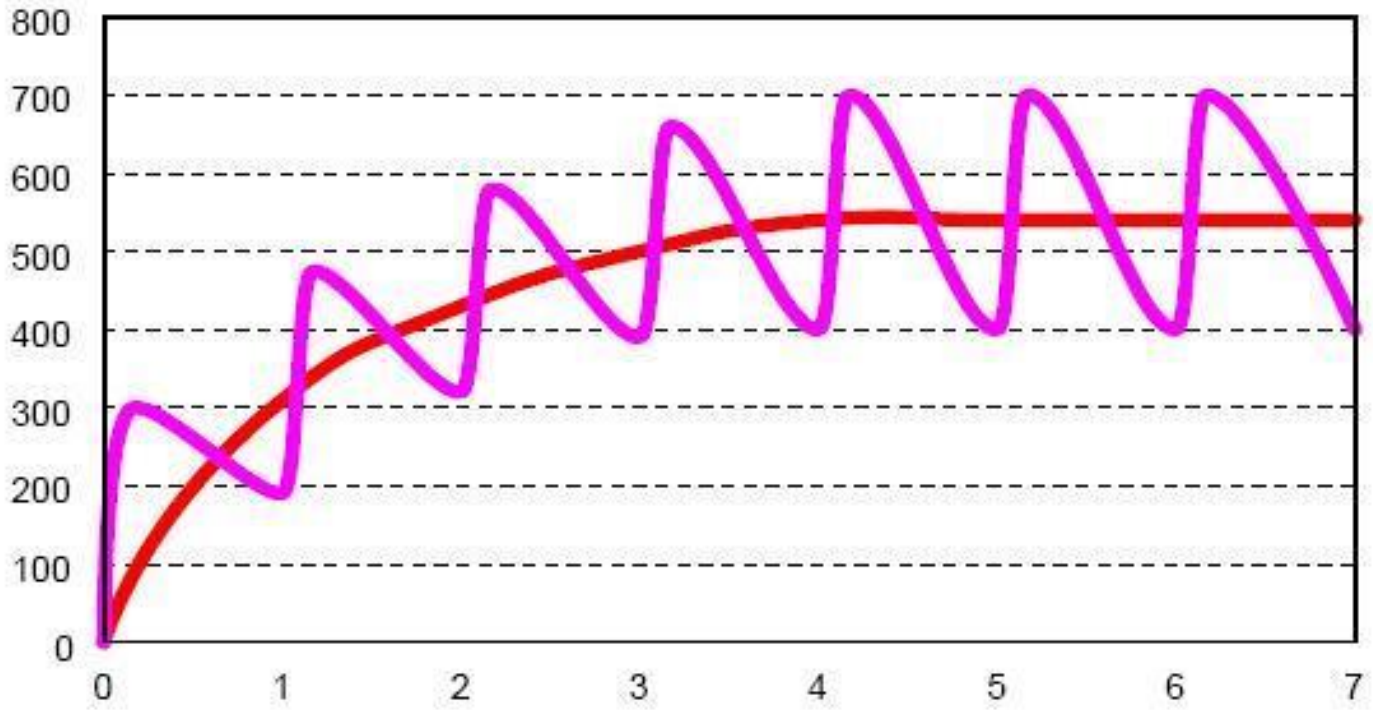
- Opioid-naive half life: 55+ hours
- Opioid-tolerant half-life 24 hours

Methadone analgesia 4-8 hours

Grissinger 2011 P & T

Steady State Simulation - Methadone Maintenance

Steady State attained after 4-5 half-lives -1 dose every half-life



Time in days (24 hrs.= methadone half-life)
Dose remains same - Effect increases

In the graph above the wavy line represents the blood levels of methadone as well as the "effect" it has on the individual patient.

Call from primary team

“the dose is too high”

Tolerance to high dose opioids

Short acting opioid agonist treatment (sOAT) for hospitalized patients
-scheduled oxycodone or hydromorphone every 4 hours
-IV Hydromorphone prn

23 cases- comparing with prior admissions
-fewer patient directed discharges
-length of stays was longer
-more patients received MOUD
-no falls
-1 reversal with naloxone in patient with unsanctioned opioid use

Thakrar 2023 Addict Sci Clin Pract

Advice to team

If the patient is wide awake and in pain, you are not giving to much

Adjust the dose per level of alertness and level of pain, not by dose

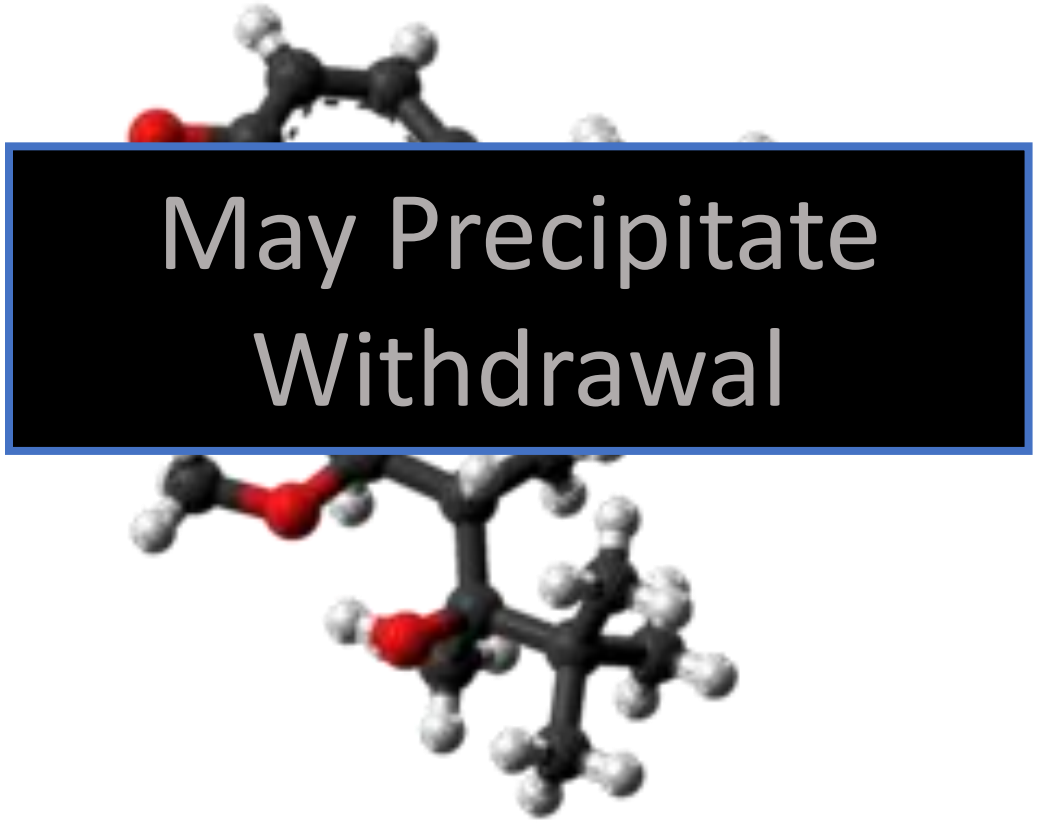
Watch for dose timing of multiple sedating medications

Nathan B

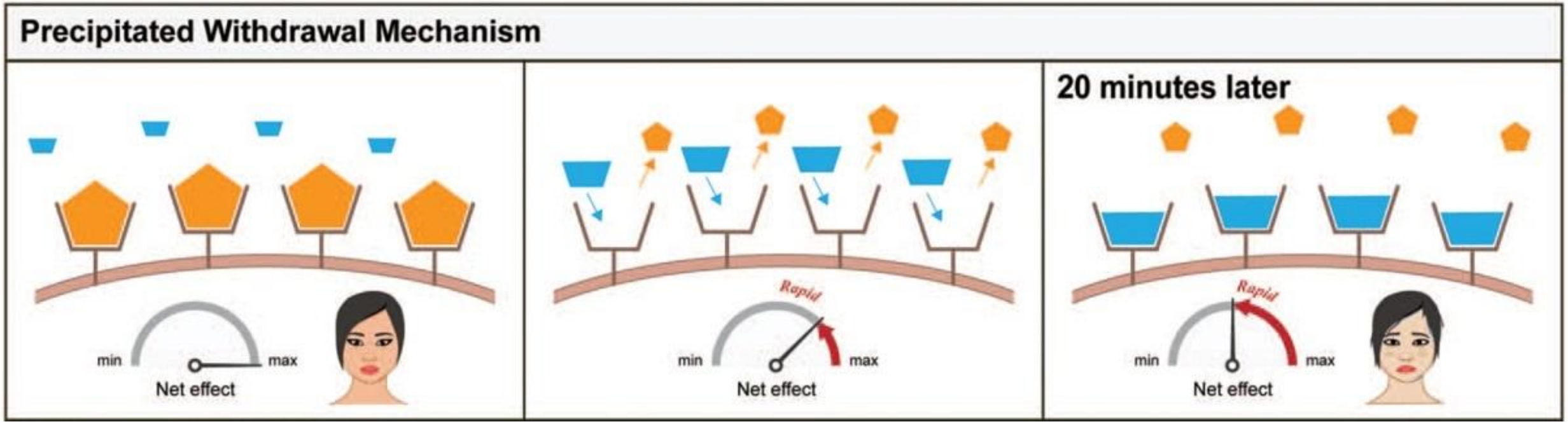
- Not interested in methadone
- Willing to try Buprenorphine/Naloxone

Buprenorphine

- Mechanism of action
  - Partial agonistic effect at the mu-opioid receptors
  - Binds 16x more tightly than morphine
- Half-life 24-42 hours
- Forms
  - Sublingual
  - Injection
  - Transdermal
  - Implant



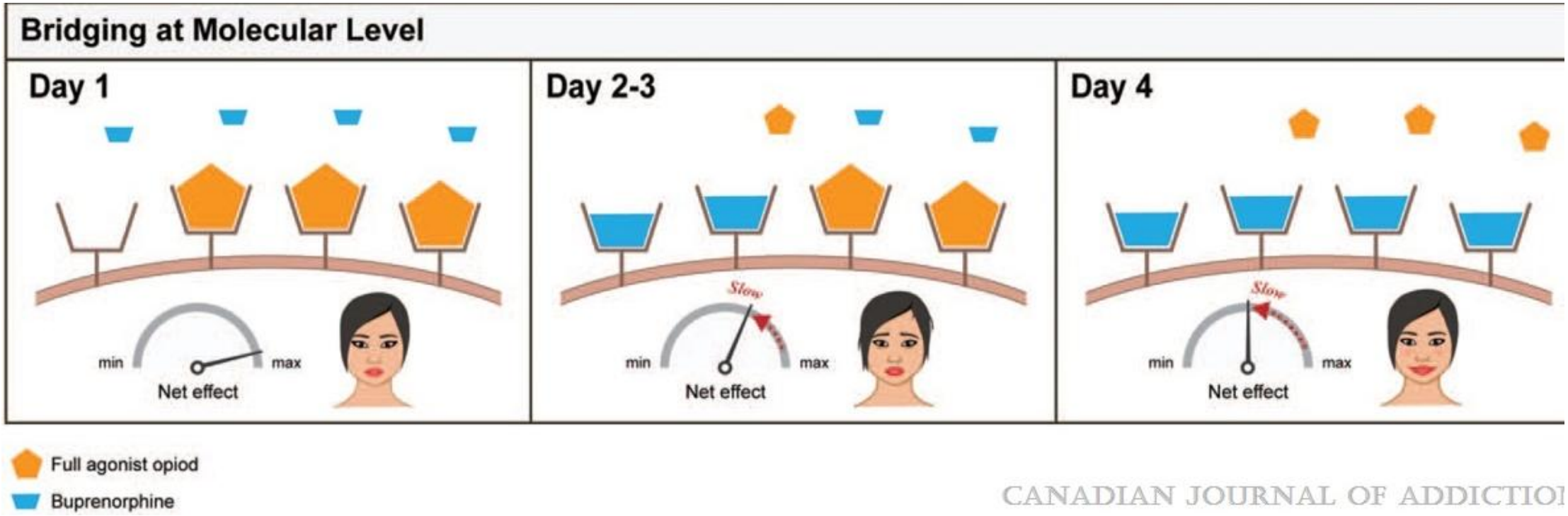
Buprenorphine Precipitated Withdrawal



Buprenorphine competitive displacement of fentanyl is both concentration- and time-dependent

Ghosh. Canadian J Addict. 2019

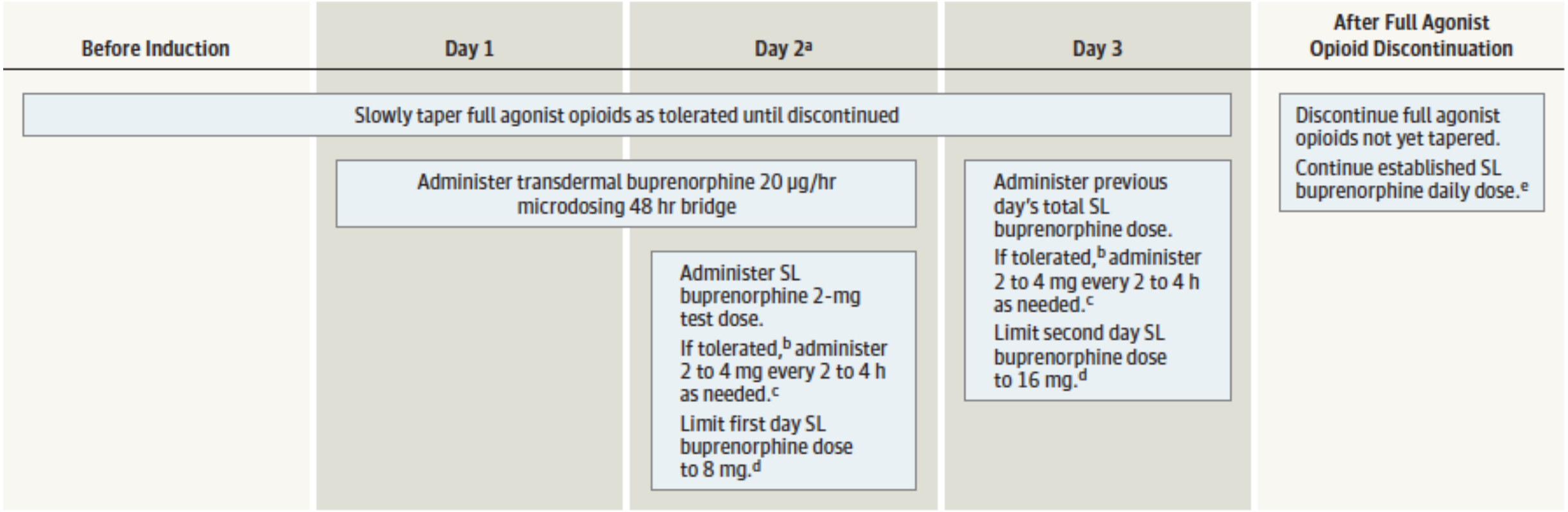
Avoiding Precipitated Withdrawal with Low Dose Buprenorphine



Ghosh. Canadian J Addict. 2019

“Micro” Dosing (low dose induction)

Figure. Buprenorphine Induction With Transdermal Buprenorphine Microdosing



Raheemullah. JAMA 2019

Nathan B

- Continued to use heroin, especially at night
- Eventually decided that it wasn’t offering any benefit and stopped taking it
- Cycled in and out of hospital stays for worsening wound infection
- During hospitalizations, given methadone and then oxycodone for pain management
- At discharge- referred to methadone programs
- Pain not controlled; continued to use heroin/fentanyl
- Tried Split dosing methadone without success

Nathan B- Low point

- Function worsened- no self-care, was going to be evicted for smells coming from apartment
- Family intervention-
- In clinic- he smelled, hair was matted, wounds were much worse
- Agreement to give him oxycodone for pain if he enrolled in methadone. Would see him weekly and continue oxycodone if he achieved behavioral goal.
- Weekly Goals- shower, clean house, get hair cut/braided

Patient: WM 72 year old male (outpatient)

- Multiple medical conditions (DM, HTN, COPD, CAD, Gout, Hep C Cirrhosis)
- Complex pain history (Chronic LBP, Herniated disc, spinal stenosis, knee osteoarthritis, neuropathy
- Substance use history:
  - Cigarette 1 ppd x 55 years
  - Heroin IDU, last use 2004
  - Cocaine/crack, last use 2004
  - Alcohol, heavy, last use 2004
  - Goes to AA/NA 3-5 times per week

Case WM

Pain 10/10

Difficult to function, disabled

PHQ9 14 (moderate depression)

Relationship problems

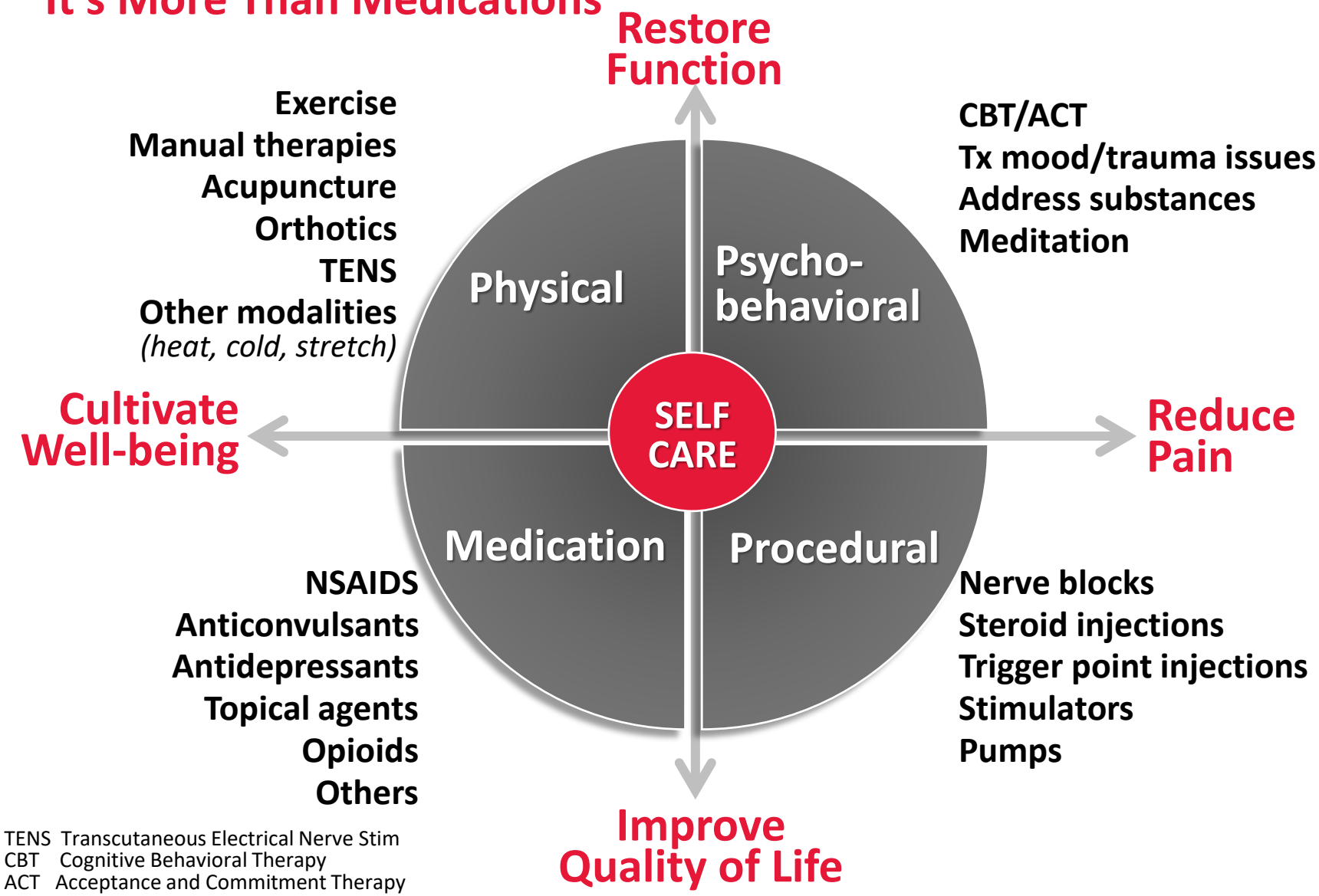
Close friends and family

Case WM- Goals of Care

- Get rid of pain?

Multidimensional Care

It's More Than Medications

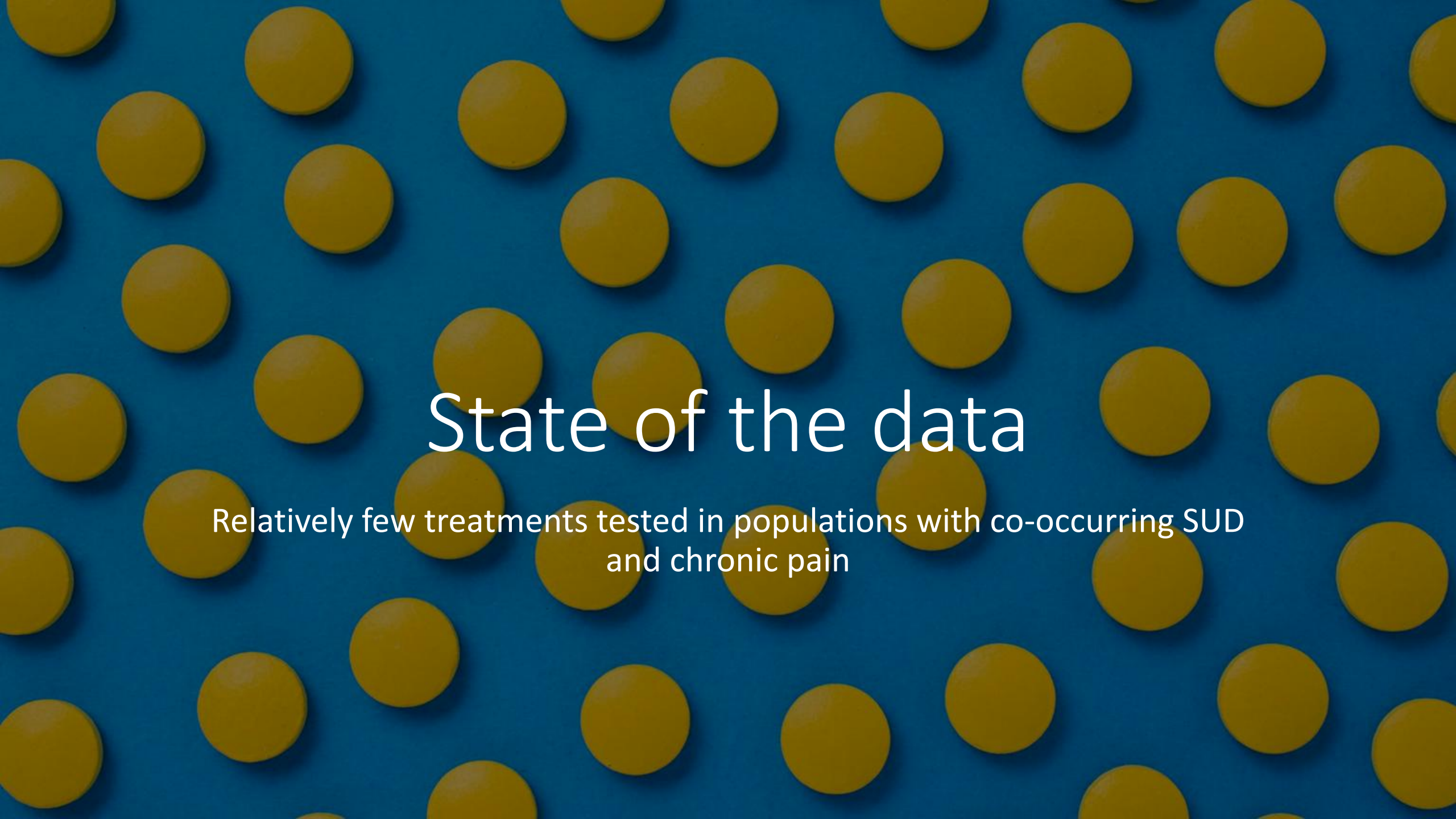


TENS Transcutaneous Electrical Nerve Stim
CBT Cognitive Behavioral Therapy
ACT Acceptance and Commitment Therapy

Case WM- Goals of Care

- Realistic expectations
- Incremental care
- Multimodal treatment

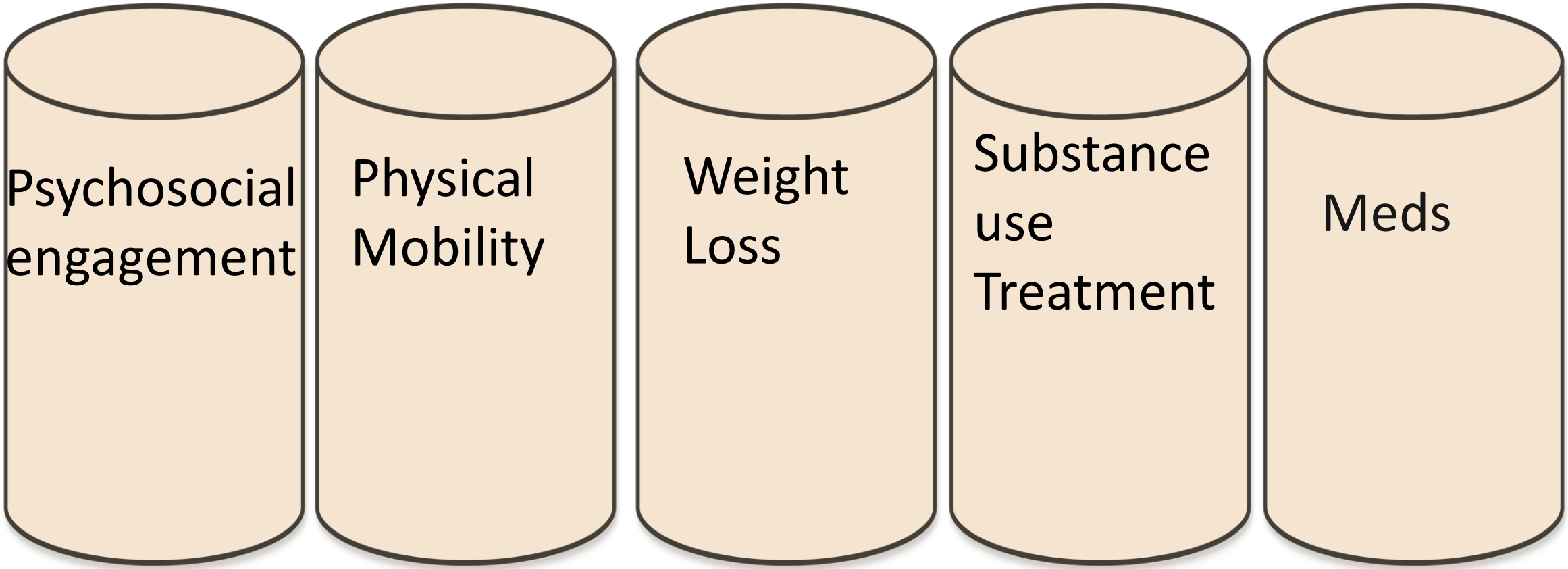
Gawande 2017 *New Yorker* "The Heroism of Incremental Care"

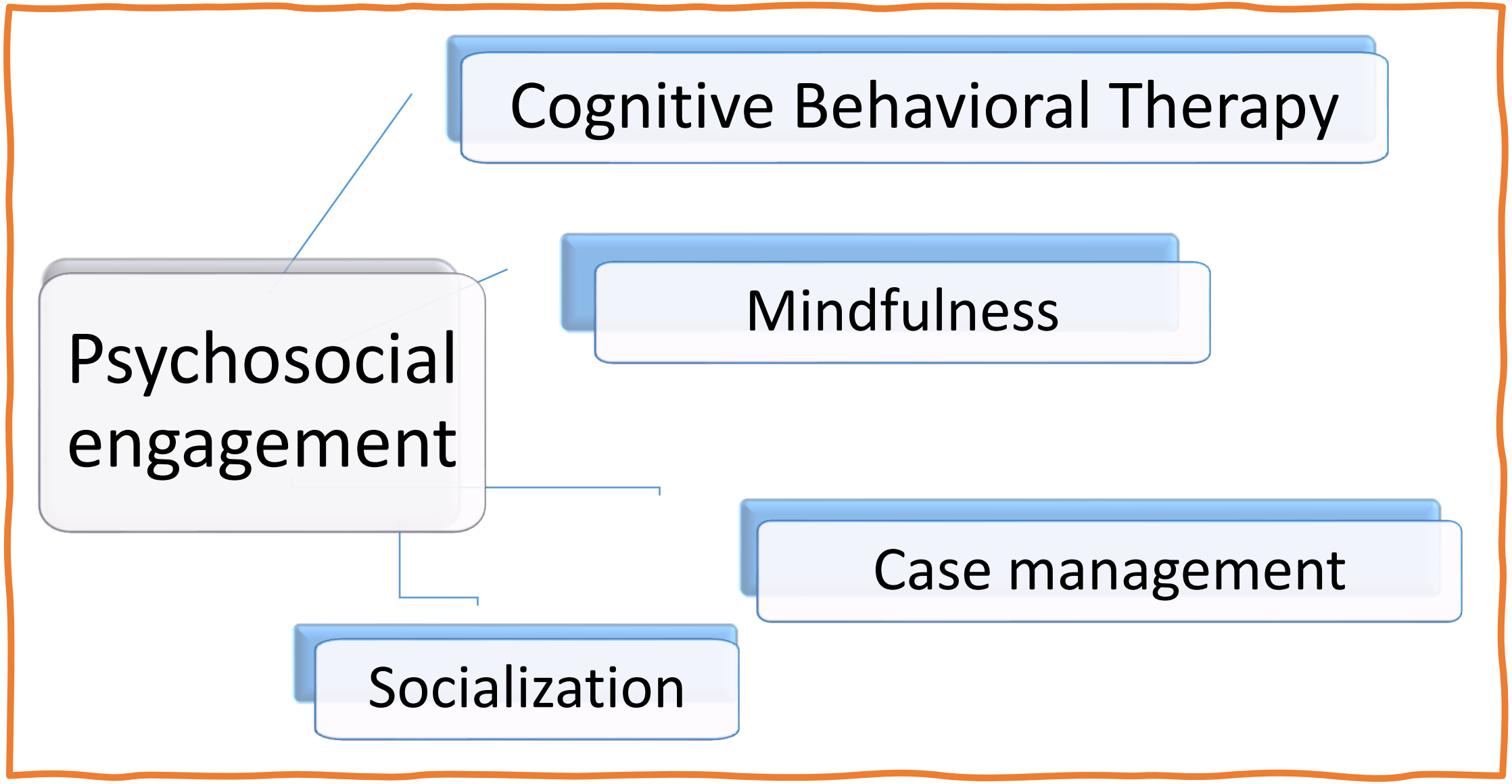


State of the data

Relatively few treatments tested in populations with co-occurring SUD and chronic pain

Five Pillars of Treatment




Psychosocial engagement
Cognitive Behavioral Therapy
Mindfulness
Case management
Socialization

Cognitive Behavioral Therapy

Cognitive behavioral vs treatment as usual

Outcome or subgroup title	No. of studies	No. of participants	Effect size
Pain	16	1148	-0.21 [-0.37, -0.05]
Disability	15	1105	-0.26 [-0.47, -0.04]
Mood	12	899	-0.38 [-0.57, -0.18]
Catastrophizing	5	308	-0.53 [-0.76, -0.31]

Eccleston, 2008

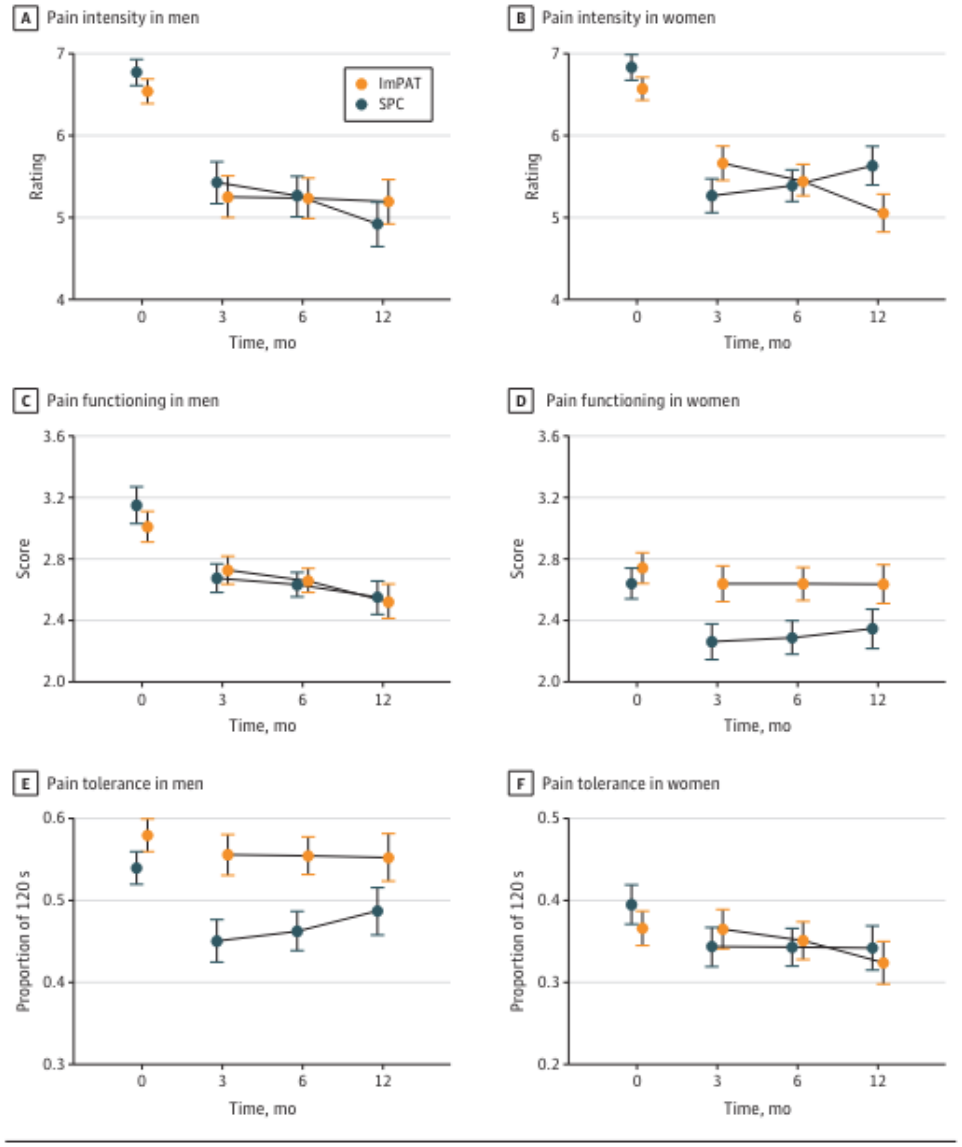
ImPAT Psychosocial intervention

8 one-hour group sessions combining principles of CBT and Acceptance –based approaches to cope with pain and decrease substances

Residential substance use treatment facility

510 participants- half female

Figure 2. Model-Estimated Pain Intensity, Functioning, and Tolerance Over Follow-up Assessments



Pain intensity was measured at baseline and each time point using the Numeric Rating Scale of Pain Intensity item 1; pain functioning, the West Haven-Yale Multidimensional Pain Inventory general activity subsection; and pain tolerance, the ischemic pain task. Baseline observed values are provided for reference. Error bars indicate SEs. ImPAT indicates Improving Pain During Addiction Treatment; SPC, supportive psychoeducational control.

Ilgen 2020
JAMA Psych

JAMA Internal Medicine

RCT: Mindfulness-Oriented Recovery Enhancement for Co-occurring Opioid Misuse and Chronic Pain

POPULATION

91 Men, 159 Women

Adults with chronic pain on long-term opioid therapy who were misusing opioids

Mean age 51.8 y

INTERVENTION

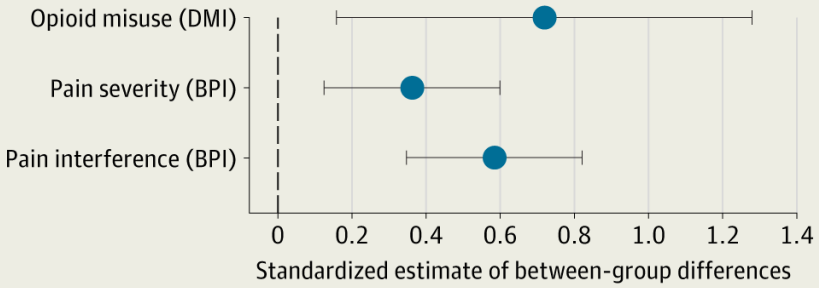
250 Participants randomized

129 Mindfulness-oriented Recovery Enhancement (MORE)
Group training in mindfulness, reappraisal, and savoring skills to target pain and opioid misuse

121 Supportive group psychotherapy (SG)
Group therapy focused on disclosure of thoughts and emotions related to pain and opioid misuse

FINDINGS

The MORE intervention significantly reduced both opioid misuse and chronic pain through 9 mo compared with SG



Odds ratio for lower opioid misuse, MORE vs SG: 2.06 (95% CI, 1.17-3.61); *P* = .01

Mean between-group differences in BPI subscale scores:
BPI-pain severity, 0.49 (95% CI, 0.17-0.81); *P* = .003
BPI-pain interference, 1.07 (95% CI, 0.64-1.50); *P* < .001

SETTINGS / LOCATIONS

6 Primary care clinics in Utah

PRIMARY OUTCOME

Presence of opioid misuse as measured by the Drug Misuse Index (DMI) composite measure through 9 mo and chronic pain as measured by the Brief Pain Inventory (BPI) pain severity and interference subscale scores through 9 mo

Garland EL, Hanley AW, Nakamura Y, et al. Mindfulness-Oriented Recovery Enhancement vs supportive group therapy for co-occurring opioid misuse and chronic pain in primary care: a randomized clinical trial. *JAMA Intern Med*. Published online February 28, 2022. doi:10.1001/jamainternmed.2022.0033

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Physical Mobility & Function

Physical Therapy

Yoga

Acupuncture

Psychologically Informed PT

Standard PT

Core Philosophy

- Address physical impairments according to biomedicine

Primary Goal

- Reduce symptoms

Psychologically Informed PT Practice

Core Philosophy

- Integrate patient beliefs, attitudes and emotional responses into biophysical patient management

Primary Goal

- Secondary Prevention of disability

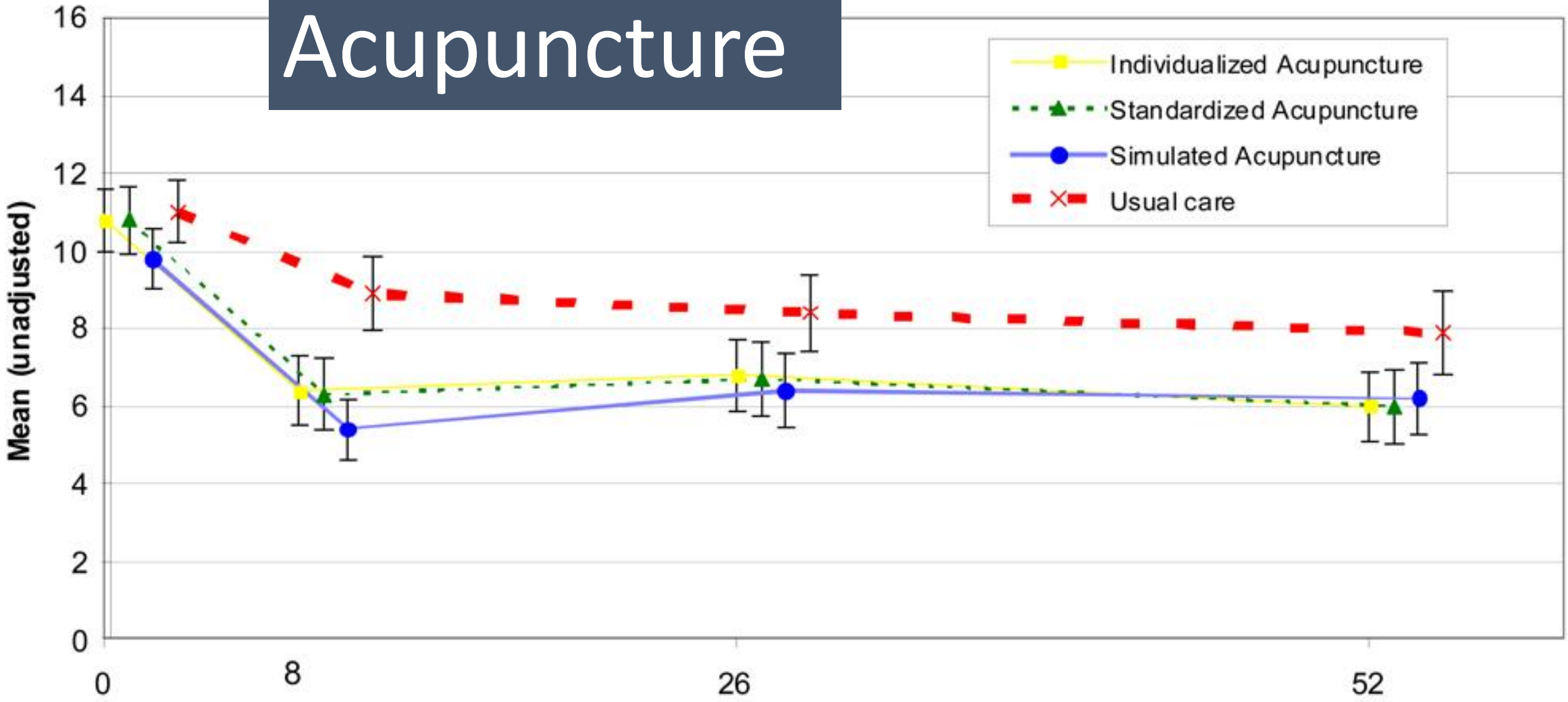
Keefe, 2018, Physical Therapy

Yoga for SUD and Pain

- Low quality studies- in India and US
- Small size, few outcomes
- Suggestive that Yoga improves pain and quality of life
- Pilot studies show feasibility for Yoga with MOUD

Walia 2021 J of Am Board of Fam Med
Uebelacker 2019 JSAT

Acupuncture



Mean Roland disability scores and 95% confidence intervals by treatment group and time since randomization

Cherkin 2009 Arch Int Med

Weight Loss

- Systematic inflammation accompanies obesity and perpetuates chronic pain
- Weight loss alone can improve pain symptoms and function for persons with obesity

Senna 2012 Clin Rhem
Robson 2020 J of Ortho and Sports PT

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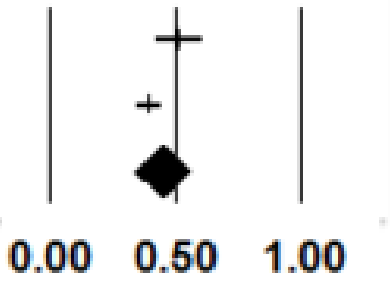
MEDICATIONS!

Opioid Efficacy for Chronic Pain

- Proportion of patients with at least 50% pain relief
- N = 442
- Follow-up 7.5 months (mean) to 13 months (1^2 77.3%)

Study Name	Event Rate	Lower Limit	Upper Limit	Total	Proportion
Zenz 1992	0.510	0.413	0.606	51 / 100	
Allan 2005	0.392	0.341	0.445	134 / 342	
	0.443	0.333	0.559		



44.3% of participants had at least 50% pain relief

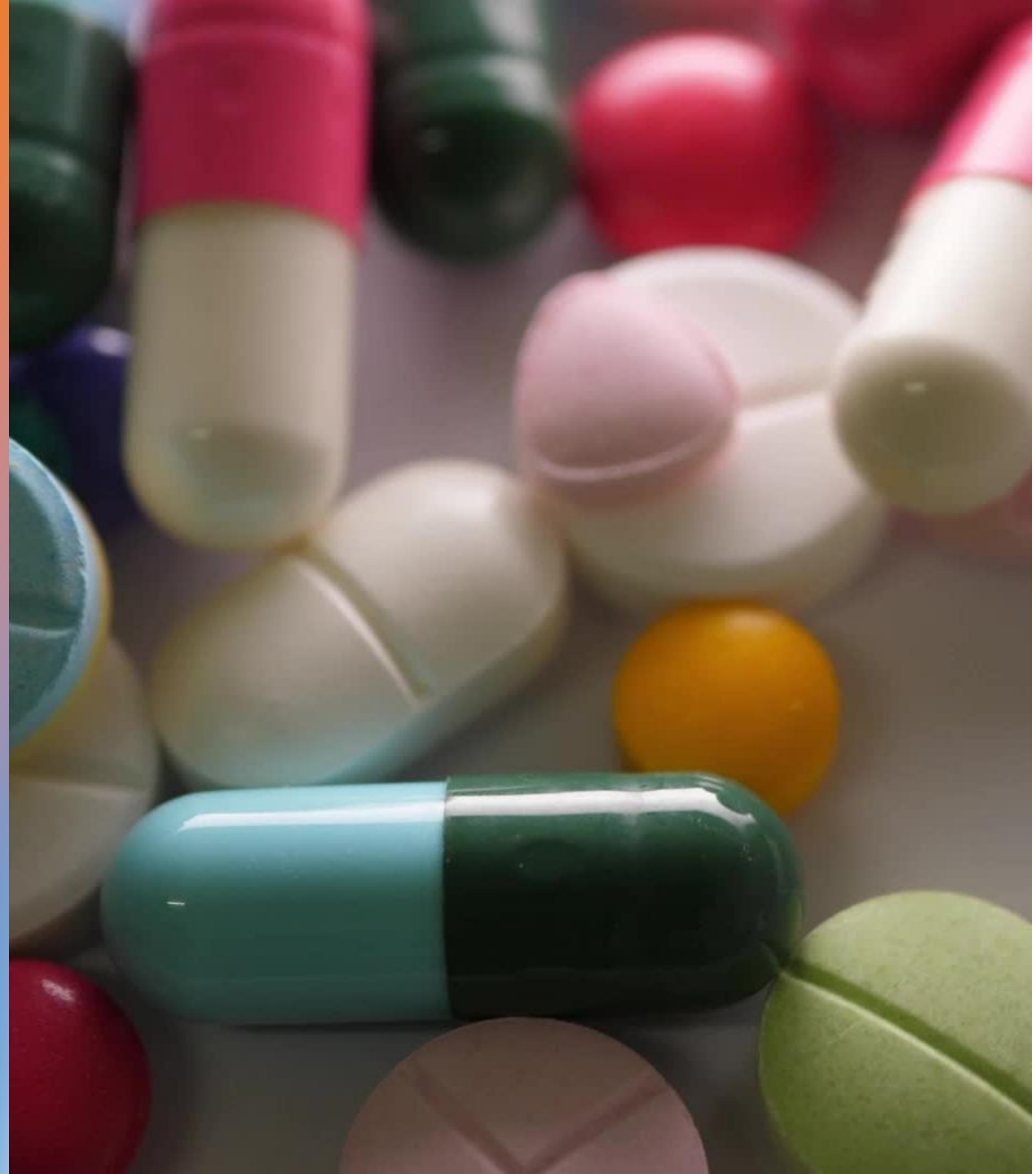
Noble M et al. *Cochrane Systematic Reviews* 2010.

Case WM

Treatment Options

- Acupuncture
- CBT
- Physical Therapy
- AA/NA meetings

“But Doc, I need some medicine”



Risks of Opioids

- Addiction- loss of control even after two decades in recovery
- Liver disease- risk of encephalopathy
  - Avoid sustained release opioids

Principles of Safe Opioid Prescribing

Start Low, Go Slow

Short acting, not long acting

Prescription drug monitoring program

Controlled substance agreement “policy”

Close monitoring

When prescribing opioids for pain in a patient with a history of substance use disorder and cirrhosis, which dose of opioids has been shown to be safe?

- No dose has been shown to be safe
- <50 Morphine Milligram Equivalent (MME)
- <100 MME
- <200 MME

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Randall 2016 Liver Transplantation

Monitoring

Prescription Drug Monitoring Program

- No solid evidence that it prevents opioid misuse or OD deaths
- Does identify “doctor shoppers”

Controlled substance agreements

- Explanation of policy to patient
- Not a “contract”

Urine Drug Screen and Pill Counts

UDS

- Tests for presence of prescribed medications and illicit or non-prescribed meds
- 24-72 hour time frame

Pill counts

- Determines how patient takes meds

Precautions for patients with OUD

Buprenorphine or split dose methadone from OTP

- Analgesic half life

Short prescriptions- even weekly

UDS and pill count every visit

Substance Use Treatment/Support

Continue to address addiction issues

Pain associated with relapse and increased use

Discussion

Learning objectives

Describe	Describe a framework for acute pain management in the context of substance use disorder, especially opioid use disorder
Utilize	Utilize treatment approaches, including multimodal treatments, to manage chronic pain in patients with co-occurring chronic pain and SUD
Employ	Employ non-opioid medications that can be effective at helping manage chronic pain in patients with substance use disorder
Apply	Apply the safeguards needed for prescription opioid analgesia in patients with SUD

Thank you!

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