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Transforming patient care.

Rapid Clinical Updates: Inpatient AUD Pearls and Adulterants in the Unregulated Supply

Speakers

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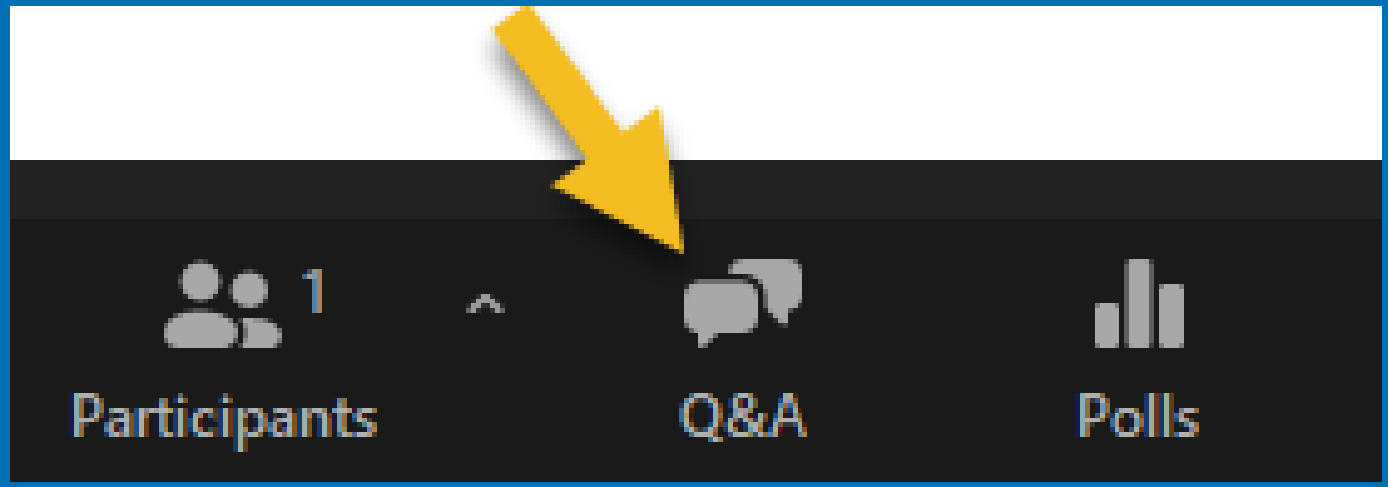
Please submit questions using Q&A feature

We will have Q&A time after



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QUESTIONS

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Question 1

1. **Which of the following validated screening tools can be used to identify patients at high-risk for complicated or severe alcohol withdrawal?**

    A. CIWA-Ar
    B. mMINDS
    C. PAWSS
    D. AUDIT-C

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Question 2

2. **Mr. F is a 58 year-old man with active alcohol use disorder, opioid use disorder (in sustained recovery for ten years), HTN, DM2 and moderate hepatic steatosis. His goals around his alcohol use is to cut back on use and eventually stops. He has difficulty taking medications and would prefer a long-acting injectable medication over pills. Which of the following medications to treat AUD would you recommend for Mr. F after patient-centered decision making?**

   A. Acamprosate
   B. Topiramate
   C. Gabapentin
   D. Disulfiram
   E. Naltrexone

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Question 3

3. **CJ is a 37-year-old man who presents after being found down by a friend. He was given naloxone 4 mg intranasally to which his respirations improved. He remains somnolent, however, and is transferred to the ED. His exam is notable for bilateral necrotic wounds on his upper extremities. His labs show Cr 2.4 (baseline 0.6), AST 112, CPK 12000, and WBC 14. UA +blood with 1-2 RBCs/hpf. UDS is pending. What potential substance(s) is most likely contributing to his current presentation**

   A. Etizolam
   B. Fentanyl
   C. Ketamine
   D. Nitazene
   E. Xylazine

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Question 4

4. **CJ is wondering if he was exposed to xylazine and asks you if there are any tests that can confirm this. Which of the following methods can CJ use to determine if he was exposed to xylazine?**

   A. Urine drug immunoassay screen
   B. Urine GC/MS testing
   C. Xylazine test strips
   D. Appearance of his drugs

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Alcohol Use Disorder Pearls for the Hospitalist

Melissa Bregger, MD FACP

SHM Rapid Clinical Updates | September 19, 2024

I have no relevant financial disclosures.

Some medications discussed are considered “Off-Label”.

Learning Objectives

By the end of this talk, learners will be able to…

1. Differentiate unhealthy alcohol use from alcohol use disorder
2. Apply the use of non-stigmatizing language to documentation in patients with AUD
3. Utilize PAWSS to identify patients at high-risk for complicated or severe alcohol withdrawal syndromes (AWS)
4. Implement alternatives to CIWA-Ar for symptom-monitoring tools
5. Understand the mechanism of phenobarbital and when to use in the treatment of severe alcohol withdrawal
6. Establish a framework for counseling patients and initiating patients on MAUD when nearing discharge
7. Employ safer-use counseling around alcohol use

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Agenda

- Definitions & overview
- Updates in withdrawal management
  - PAWSS
  - Newer symptom monitoring tools (mMINDS)
  - Phenobarbital
- Initiating treatment of AUD prior to discharge
  - Brief Interventions
  - MAUD
  - Thiamine/Supplements on discharge?
- Harm-Reduction in AUD
- 10 things you can implement today in your management of patients admitted who have AUD

Definitions & Overview

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DSM-5 Definitions

Unhealthy Alcohol Use

Men <65 years old:

- **≥14** standard drinks/week
  - OR
- **≥4** drinks on any day

Women + Men ≥ 65 years old

- **≥7** standard drinks/week
  - OR
- **≥3** drinks on any day

Alcohol Use Disorder

A pattern of alcohol use leading to clinically significant impairment or distress, as manifested by multiple psychosocial, behavioral, or psychologic features

American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, 5th Edition. Arlington, VA, American Psychiatric Publishing, 2013

DSM-V Alcohol Use Disorder Diagnosis

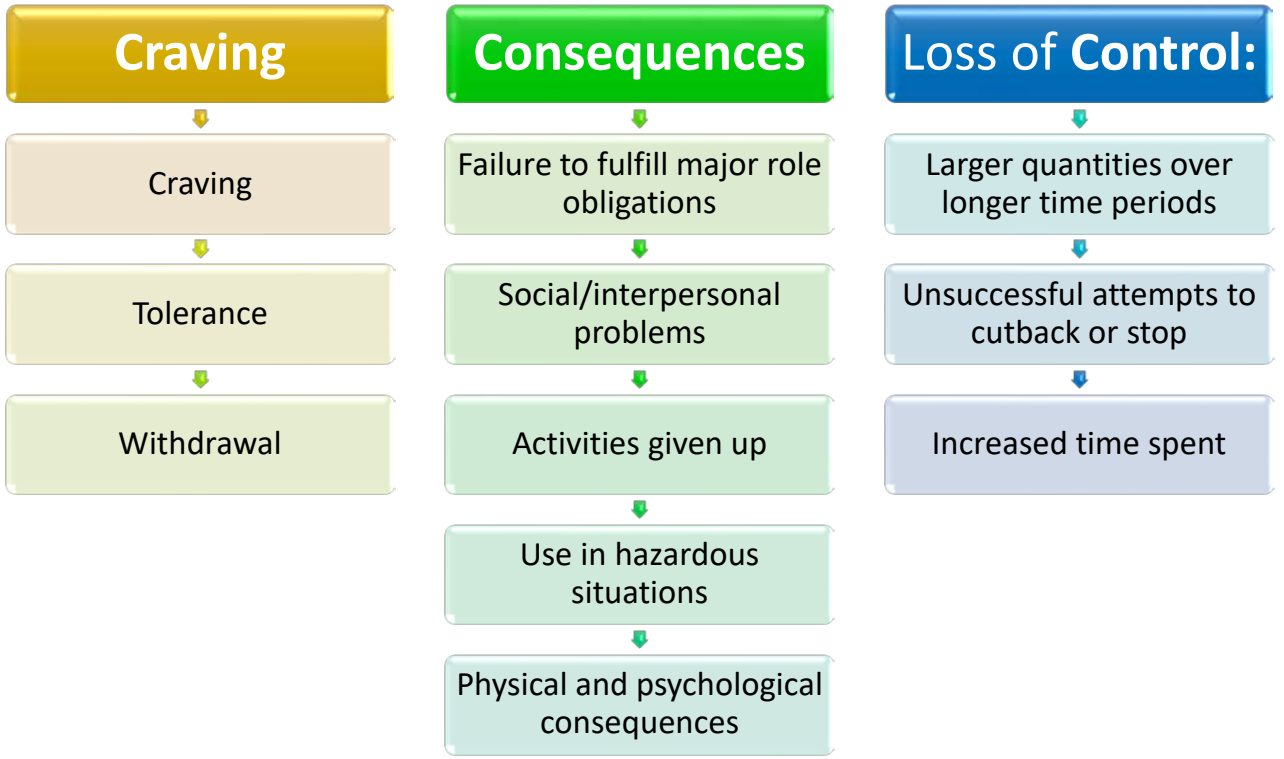
(Need 2 out of 11 Criteria)

Mild: 2-3 symptoms

Moderate: 4-5 symptoms

Severe: 6+ symptoms

The Three C's



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Words Matter: Ways to Improve Language & Documentation Around Substance Use

Non-Stigmatizing Language	Stigmatizing Language to Avoid
Unhealthy Alcohol Use, Alcohol Use Disorder	Alcohol "Dependence" or **Alcohol "Abuse"**
Person with a Substance Use Disorder	Drug abuser, alcoholic, addict, junkie, drunk, user
Person in Recovery, Abstinent, Not Drinking	Clean
Treatment or Medication for Addiction, Medication for AUD (MAUD)	Substitution/Replacement Therapy, Medication-Assisted Treatment (MAT)
Positive or Negative Toxicology Screen	**Dirty or Clean Toxicology Screen**
Return to Use, Recurrence of symptoms or disorder	Relapse
Declined	Refused
Intoxicated	**Drunk, High**

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Grayken Center for Addiction. Reducing Stigma: Why Words About Addiction Matter. https://www.bmc.org/addiction/reducing-stigma

Alcohol Withdrawal Syndromes (AWS)

AWS	Time to Onset	Incidence	Manifestations
Uncomplicated Withdrawal ("The Shakes")	12 hrs Peak 24-36 hrs	80%	•Tremors, Irritability, n/v, Nervousness, diaphoresis, Insomnia, Tachycardia •Autonomic Hyperactivity, but not unstable
Complicated Withdrawal			
Seizures	12 hrs Peak 12-48 hrs	5-15%	• Amount of consumption correlates • 1/3rd have one seizure, 2/3rd have multiple closely spaced • Only 3% develop status
Hallucinosis	8 hrs Peak 24-96 hrs	Up to 20%	• Related to length, amount of alcohol • Visual misperceptions, tactile hallucinations • Sensorium clear, VS stable
Delirium Tremens	Usually 1-3 days Peak 4-5d	5%	• Profound confusional state • Perceptual disturbances (AVH), agitation, insomnia, terror, tactile disturbances • Autonomic Hyperactivity, fever

Updates in Alcohol Withdrawal Management

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General Principles in AWS Treatment

- **Don’t forget to look for other complications of alcohol use (pancreatitis, hepatitis, concurrent psychiatric issues, DM, HIV, concurrent substance use disorders, etc)**
- **Don’t forget to check Mg, LFTs, Urine Drug Screen**
- **Long-Acting Benzos > Short-Acting**
- **Symptom-Triggered Meds > Scheduled Meds**
  - CIWA-Ar vs Newer Symptom Monitoring Tools (mMINDS?)
- **Front-Loading in Severe, High-Risk, or Complicated Withdrawal > PRN**
- **Severe withdrawal: Benzos gold standard; Phenobarb okay in experienced providers as rescue, benzo-refractory, or patients with contraindications to benzos**
  - Other meds (Clonidine/guanfacine, gabapentin, carbamazepine, VPA, etc) only recommended for mild-moderate withdrawal, not as monotherapy in severe withdrawal
- **IV Thiamine > PO thiamine; only need 3-5 days**

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Don’t Forget to Look For Other Complications of Alcohol Use

Pancreatitis – Acute & Chronic	Alcohol Ketoacidosis	Alcohol-Associated Hepatitis	Alcohol-Associated Steatohepatitis	Cirrhosis	Gastritis, Esophagitis, GERD, PUD
Wernicke’s Encephalopathy	Korsakoff Syndrome	Neurocognitive Disorder	Peripheral Neuropathy	**Concurrent Psychiatric Disorders**	**Concurrent Substance Use Disorders**
Housing Instability	PTSD	Malnutrition	Hyponatremia	Folic Acid Deficiency	B12 Deficiency
	TBI	Hypomagnesemia	Cardiovascular – A Fib, Cardiomyopathy	Increased Cancers, HTN, CVA, DM, HIV	

How many of my patients with alcohol use disorder will actually withdraw?

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Not as many as you might think…

50% of Patients with AUD develop AWS

80% uncomplicated ("The Shakes")

- **Do not *need* treatment, no risk of death**

5-20% severe or complicated (Seizures, Hallucinosis, Delirium Tremens, CIWA-Ar>15)

- **Warrant monitoring & treatment → risk of death if untreated**

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How should we decide which patients to monitor?

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Screening & Triaging

~~CAGE~~

~~AUDIT-C~~

PAWSS

Use this one **inpatient**!

Answers: "**Is this patient at high-risk for complicated alcohol withdrawal?**"

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Maldonado et al. Prospective Validation Study of the Prediction of Alcohol Withdrawal Severity Scale (PAWSS) in Medically Ill Inpatients: A New Scale for the Prediction of Complicated Alcohol Withdrawal Syndrome, *Alcohol and Alcoholism*, 50 (5): 509-518.

Prediction of Alcohol Withdrawal Severity Scale (PAWSS)

- Identifies medical inpatients at high-risk of complicated or severe alcohol withdrawal
  - Specificity: 99.5%
  - Sensitivity 93.1%
    - Approaches 100% if combine with chart review
- Only needs to be done **once**
  - If PAWSS ≥ 4 → High-risk; can place on CIWA-Ar or other symptom-monitoring protocol
- Easy to use
- Excellent Interrater Reliability
- Validated in medically-ill inpatients

Prediction of Alcohol Withdrawal Severity Scale (PAWSS)

Maldonado et al, 2015

Part A: Threshold Criteria: ("Y" or "N", no point)

Have you consumed any amount of alcohol (i.e., been drinking) within the last 30 days? OR did the patient have a "+" BAL on admission? _____

IF the answer to either is YES, proceed with test:

Part B: Based on patient interview: (1 point each)

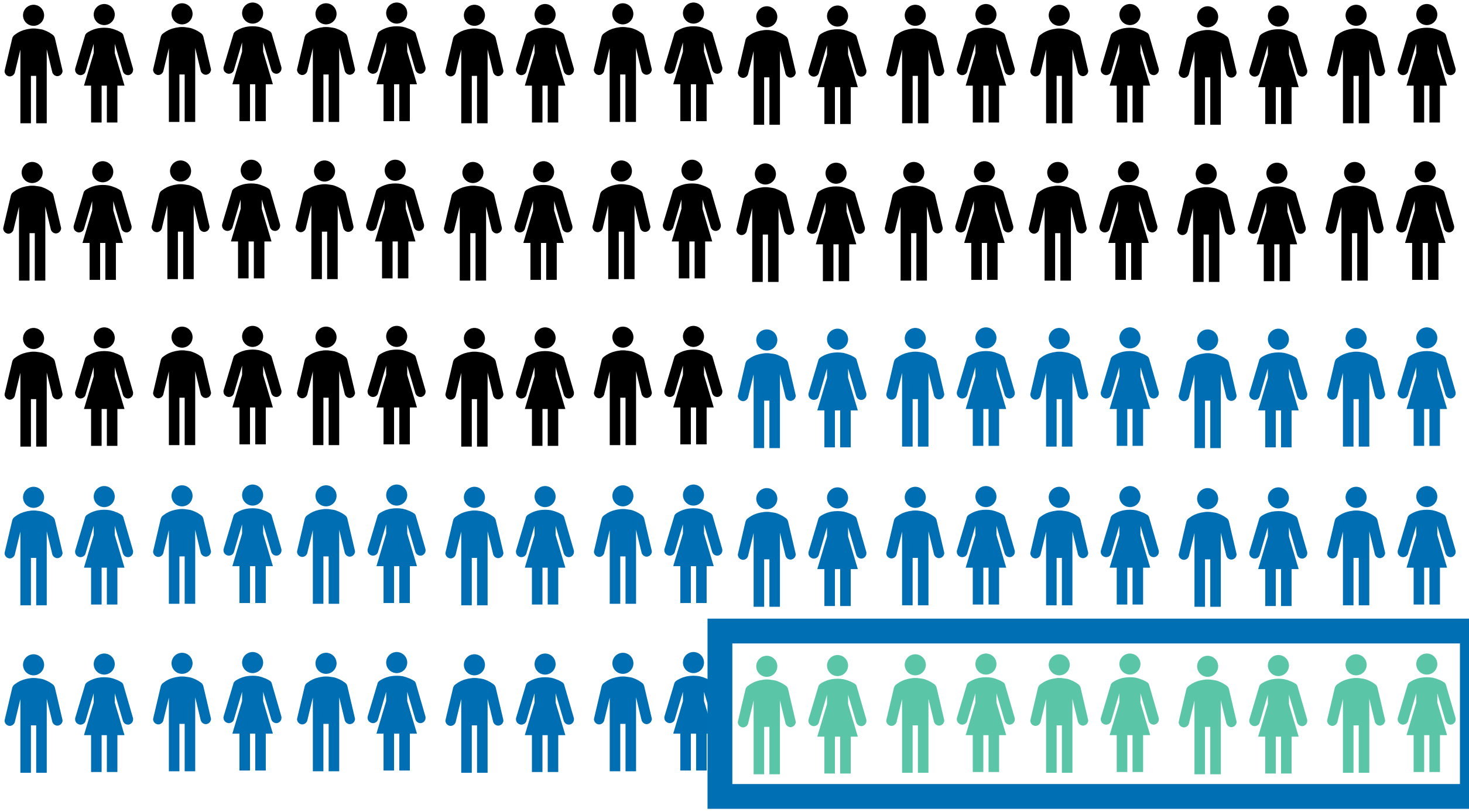
1. Have you been recently intoxicated/drunk, within the last 30 days? _____
2. Have you ever undergone alcohol use disorder rehabilitation treatment or treatment for alcoholism? (i.e., in-patient or out-patient treatment programs or AA attendance) _____
3. Have you ever experienced any previous episodes of alcohol withdrawal, regardless of severity? _____
4. Have you ever experienced blackouts? _____
5. Have you ever experienced alcohol withdrawal seizures? _____
6. Have you ever experienced delirium tremens or DT's? _____
7. Have you combined alcohol with other "downers" like benzodiazepines or barbiturates, during the last 90 days? _____
8. Have you combined alcohol with any other substance of abuse, during the last 90 days? _____

Part C: Based on clinical evidence: (1 point each)

9. Was the patient's blood alcohol level (BAL) on presentation ≥ 200? _____
10. Is there evidence of increased autonomic activity? (e.g., HR > 120 bpm, tremor, sweating, agitation, nausea) _____

Positive if total score ≥ 4

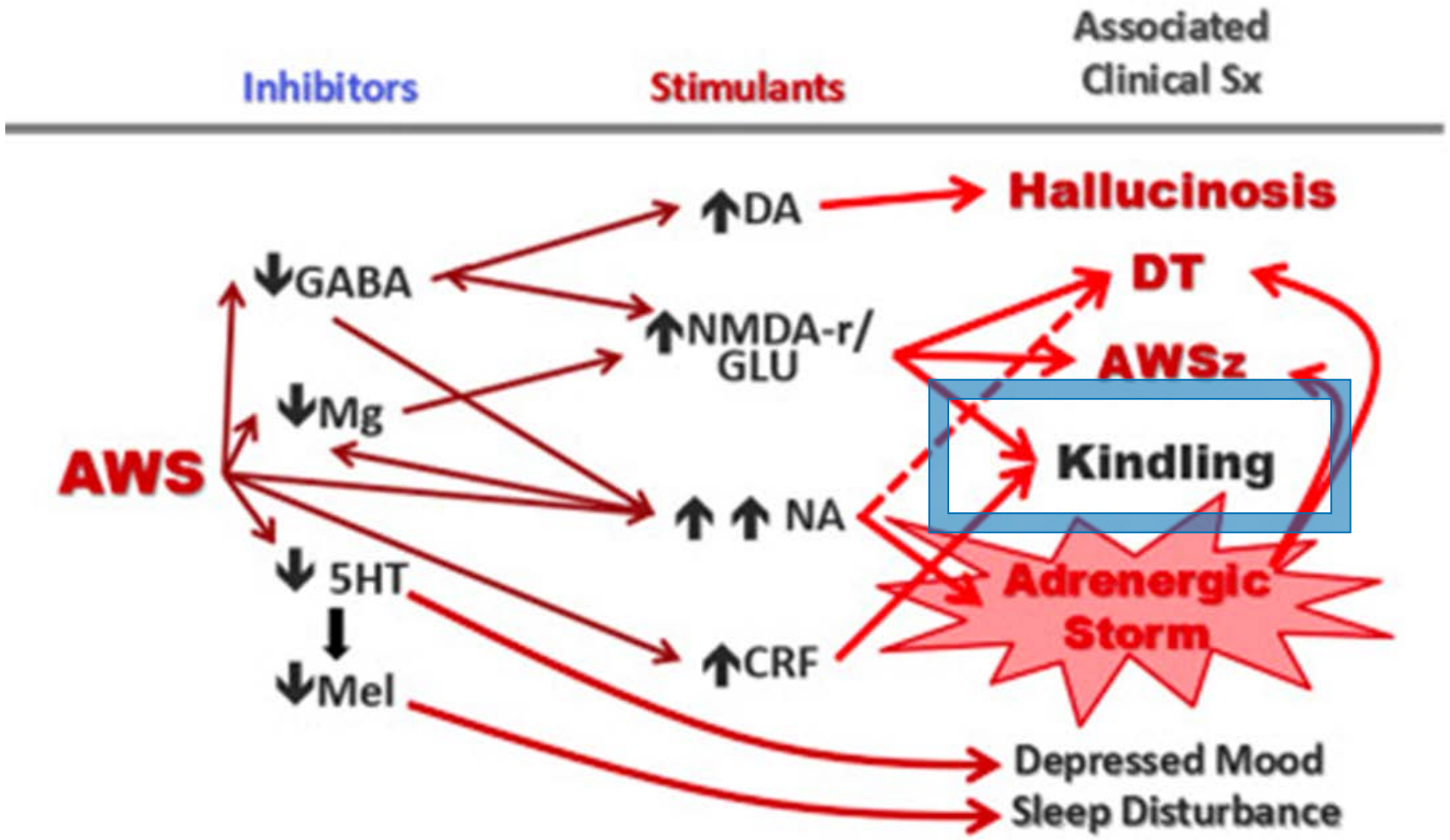
Maldonado JR, et al. Prospective Validation Study of the Prediction of Alcohol Withdrawal Severity Scale (PAWSS) in Medically Ill Inpatients: A New Scale for the Prediction of Complicated Alcohol Withdrawal Syndrome. Alcohol Alcohol. 2015 Sep;50(5):509-18.



Why does PAWSS work?

It's all about Kindling

"(in neurology) a process by which a seizure or other brain event is both initiated and its recurrence made more likely."



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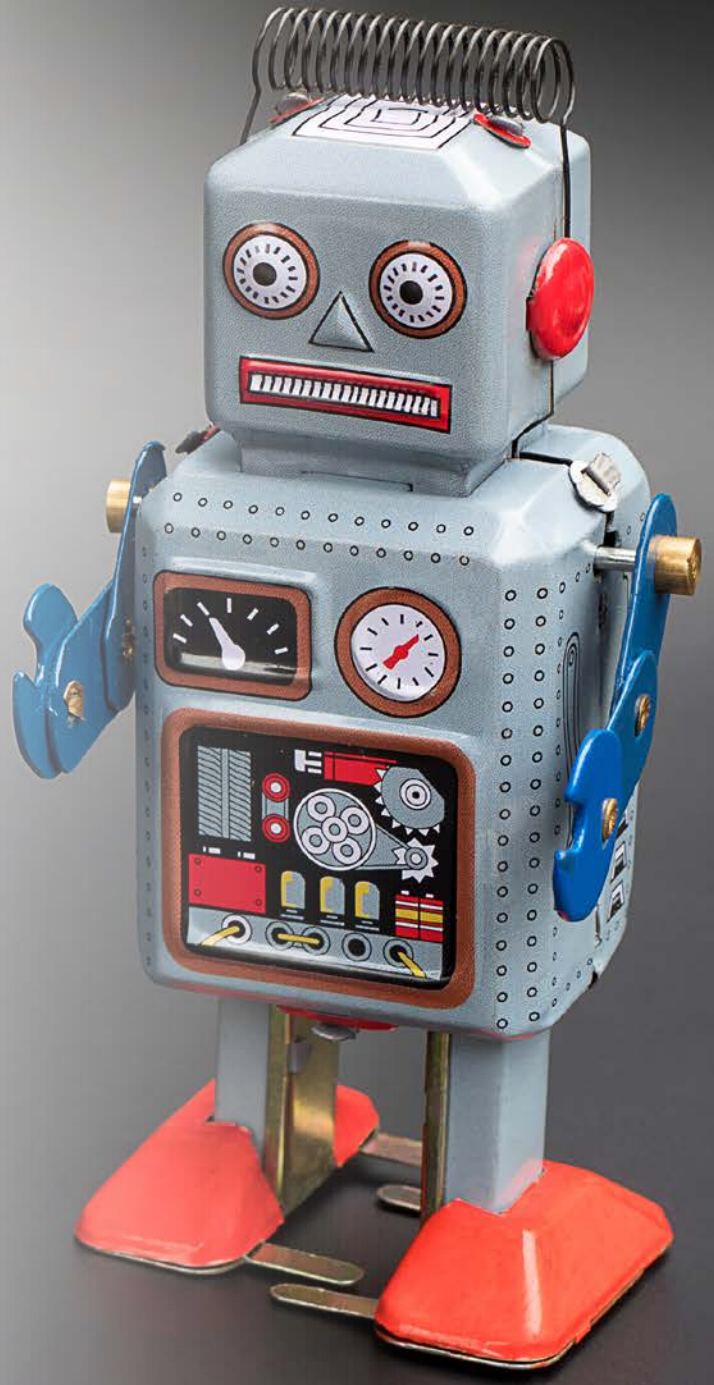
Maldonado JR. Novel algorithms for the prophylaxis and management of alcohol withdrawal syndromes—beyond benzodiazepines. *Crit Care Clin 2017; 33:* 559-599.

How should I monitor withdrawal symptoms?



Symptom Monitoring Tools - OLD

Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised

CIWA-Ar

Labor-Intensive

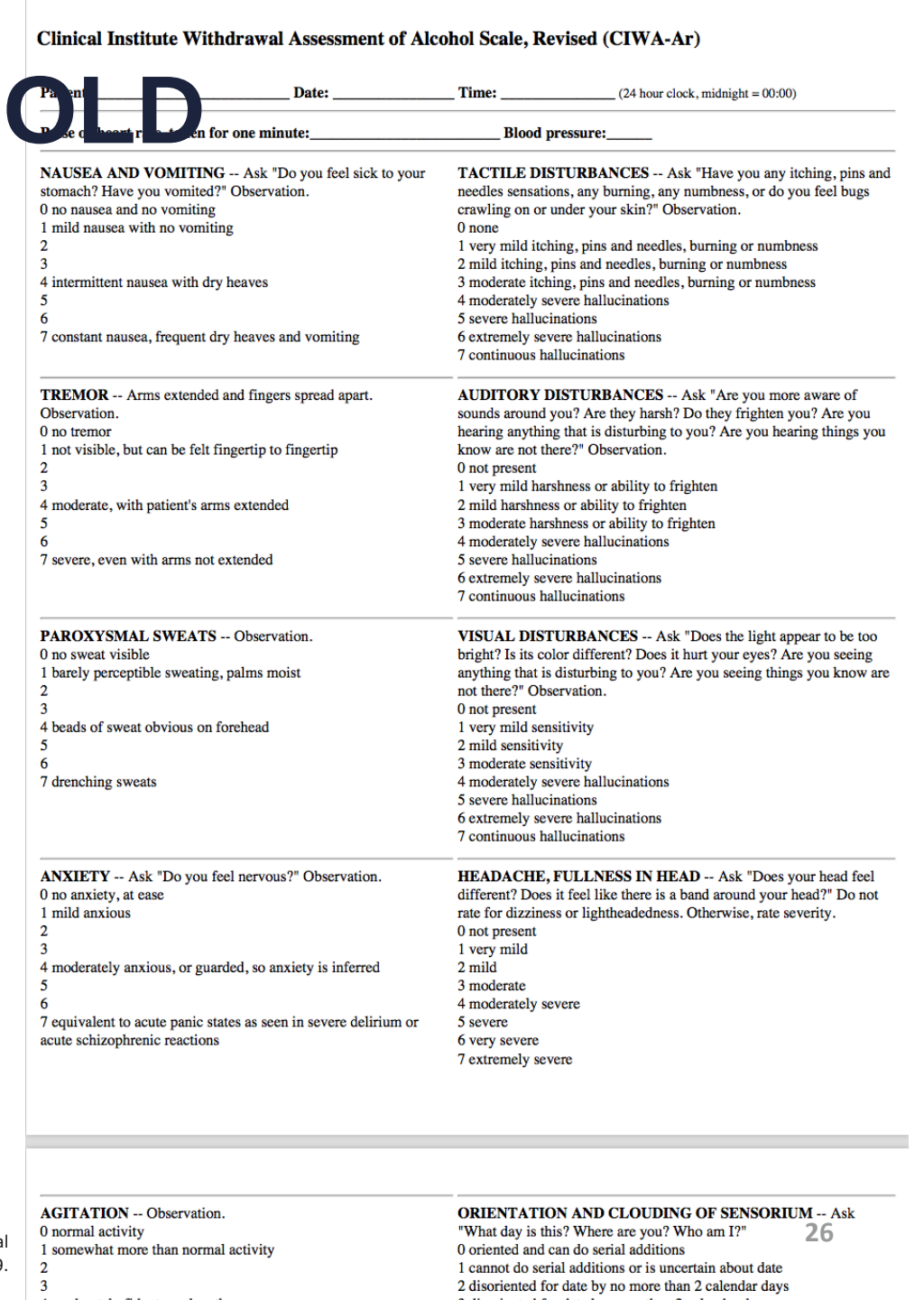
- Often overutilized

Subjective

Poor-Interrater-Reliability

Scores: variable severity grade scores by guidelines

- CIWA < 8: mild AWS (ASAM Says <10)
- CIWA-Ar 8-15: moderate AWS (ASAM says 11-19)
- CIWA-Ar >15: Severe AWS (ASAM >20, others 19+)



Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised (CIWA-Ar)

Pa[illegible] Date: _____ Time: _____ (24 hour clock, midnight = 00:00)

Pulse or heart rate taken for one minute:_____ Blood pressure:_____

NAUSEA AND VOMITING -- Ask "Do you feel sick to your stomach? Have you vomited?" Observation.
0 no nausea and no vomiting
1 mild nausea with no vomiting
2
3
4 intermittent nausea with dry heaves
5
6
7 constant nausea, frequent dry heaves and vomiting

TACTILE DISTURBANCES -- Ask "Have you any itching, pins and needles sensations, any burning, any numbness, or do you feel bugs crawling on or under your skin?" Observation.
0 none
1 very mild itching, pins and needles, burning or numbness
2 mild itching, pins and needles, burning or numbness
3 moderate itching, pins and needles, burning or numbness
4 moderately severe hallucinations
5 severe hallucinations
6 extremely severe hallucinations
7 continuous hallucinations

TREMOR -- Arms extended and fingers spread apart. Observation.
0 no tremor
1 not visible, but can be felt fingertip to fingertip
2
3
4 moderate, with patient's arms extended
5
6
7 severe, even with arms not extended

AUDITORY DISTURBANCES -- Ask "Are you more aware of sounds around you? Are they harsh? Do they frighten you? Are you hearing anything that is disturbing to you? Are you hearing things you know are not there?" Observation.
0 not present
1 very mild harshness or ability to frighten
2 mild harshness or ability to frighten
3 moderate harshness or ability to frighten
4 moderately severe hallucinations
5 severe hallucinations
6 extremely severe hallucinations
7 continuous hallucinations

PAROXYSMAL SWEATS -- Observation.
0 no sweat visible
1 barely perceptible sweating, palms moist
2
3
4 beads of sweat obvious on forehead
5
6
7 drenching sweats

VISUAL DISTURBANCES -- Ask "Does the light appear to be too bright? Is its color different? Does it hurt your eyes? Are you seeing anything that is disturbing to you? Are you seeing things you know are not there?" Observation.
0 not present
1 very mild sensitivity
2 mild sensitivity
3 moderate sensitivity
4 moderately severe hallucinations
5 severe hallucinations
6 extremely severe hallucinations
7 continuous hallucinations

ANXIETY -- Ask "Do you feel nervous?" Observation.
0 no anxiety, at ease
1 mild anxious
2
3
4 moderately anxious, or guarded, so anxiety is inferred
5
6
7 equivalent to acute panic states as seen in severe delirium or acute schizophrenic reactions

HEADACHE, FULLNESS IN HEAD -- Ask "Does your head feel different? Does it feel like there is a band around your head?" Do not rate for dizziness or lightheadedness. Otherwise, rate severity.
0 not present
1 very mild
2 mild
3 moderate
4 moderately severe
5 severe
6 very severe
7 extremely severe

AGITATION -- Observation.
0 normal activity
1 somewhat more than normal activity
2
3

ORIENTATION AND CLOUDING OF SENSORIUM -- Ask "What day is this? Where are you? Who am I?"
0 oriented and can do serial additions
1 cannot do serial additions or is uncertain about date
2 disoriented for date by no more than 2 calendar days

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Sullivan JT, Sykora K, Schneiderman J, Naranjo CA, Sellers EM. Assessment of alcohol withdrawal: The revised Clinical Institute Withdrawal Assessment for Alcohol scale (CIWA-Ar). *British Journal of Addiction, 84*: 1353*1357, 1989.

Symptom Monitoring Tool – NEW

Modified Minnesota Detoxification Scale

mMINDS

Less Labor Intense

- Nurses preferred over other scales

• Bradley M, Kiser TH, Mueller SW, Reynolds PM, MacLaren R. Correlation Between and Nursing Satisfaction With CIWA-Ar, mMINDS, and SEWS Scoring Tools for the Assessment of Severe Alcohol Withdrawal Syndrome in ICU Patients. Ann Pharmacother. 2023 Feb;57(2):175-183. doi: 10.1177/10600280221102562. Epub 2022 Jun 17. PMID: 35713011.

More Objective

Can be used in unconscious/intubated patients

Validated in ED, Med-Surg, ICU

Scores:

- mMINDS 5-14: mild AWS
- mMINDS 15-19: moderate AWS
- mMINDS 20+: Severe AWS

Symptom *(real-time assessment)*	Score
Pulse (beats per minute)	
< 90	0
90 - 110	1
> 110	2
Diastolic blood pressure (mmHg)	
< 90	0
90 – 110	1
> 110	2
Tremor** ***Assess with patient's arms extended and fingers spread	
Absent	0
Slightly visible or can be felt fingertip to fingertip	2
Moderate – Noticeably visible with arms extended	4
Severe – Noticeable even with arms not extended	6
Sweat	
Absent	0
Barely; Moist palms	2
Beads visible	4
Drenching	6
***Hallucinations** *Feeling crawling sensations over skin (tactile)* *Hearing voices when no one has spoken (auditory)* *Seeing patterns, lights, beings, or objects that are not there (visual)*	
Absent	0
Mild – Mostly lucid, sporadic/rare hallucinations	1
Moderate / Intermittent – Hallucinating at times (when first waking up or in between conversations / patient care) with moments of lucidity but able to be reoriented	2
Severe – Continuous while awake	3

Symptom *(real-time assessment)*	Score
***Agitation** *Assess using the Richmond Agitation-Sedation Scale (RASS)*	
Normal activity (RASS of 0 or less)	0
Somewhat more than normal (RASS of +1)	3
Moderately fidgety, restless (RASS of +2)	6
Pacing, thrashing (RASS of +3 or greater)	9
***Orientation**	
Oriented x 3 (person/place time OR at patient's baseline)	0
Oriented x 2	2
Oriented x 1	4
Disoriented	6
***Delusions** *Unfounded ideas that can be related to suspicious or paranoid thoughts, i.e. patient believes their things have been stolen, or they are being persecuted unjustly*	
Absent	0
Present	6
Seizures	
Absent	0
Present	6

**If unable to assess this symptom due to over-sedation or intubation, score = 0

**MINDS adapted from Decarolis D, et al. Symptom-driven lorazepam protocol for treatment of severe alcohol withdrawal delirium in the Intensive Care Unit. *Pharmacotherapy* 2007: 27(4):510-518.

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Smith RM, Benzio B, Hendrickson AL, Telford ED, Franck AJ. Implementation of the Modified Minnesota Detoxification Scale (mMINDS) for Alcohol Withdrawal Syndrome in Critically Ill Patients. Jt Comm J Qual Patient Saf. 2020 Nov;46(11):656-658. doi: 10.1016/j.jcjq.2020.08.006. Epub 2020 Aug 19. PMID: 32917542.

What’s all the fuss about phenobarbital?

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Benzodiazepines

Gold Standard

Act on GABA-A receptors

Compared to placebo: ↓Seizures

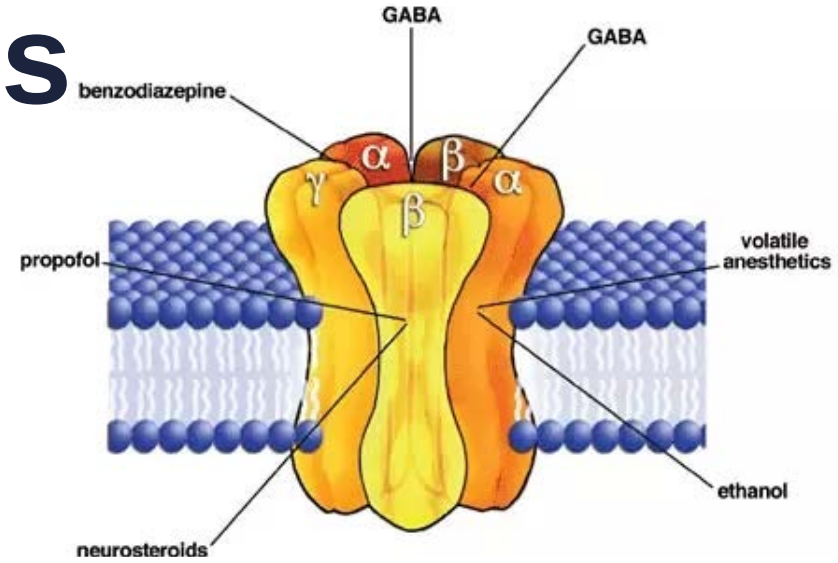
Long-Acting > Short-Acting

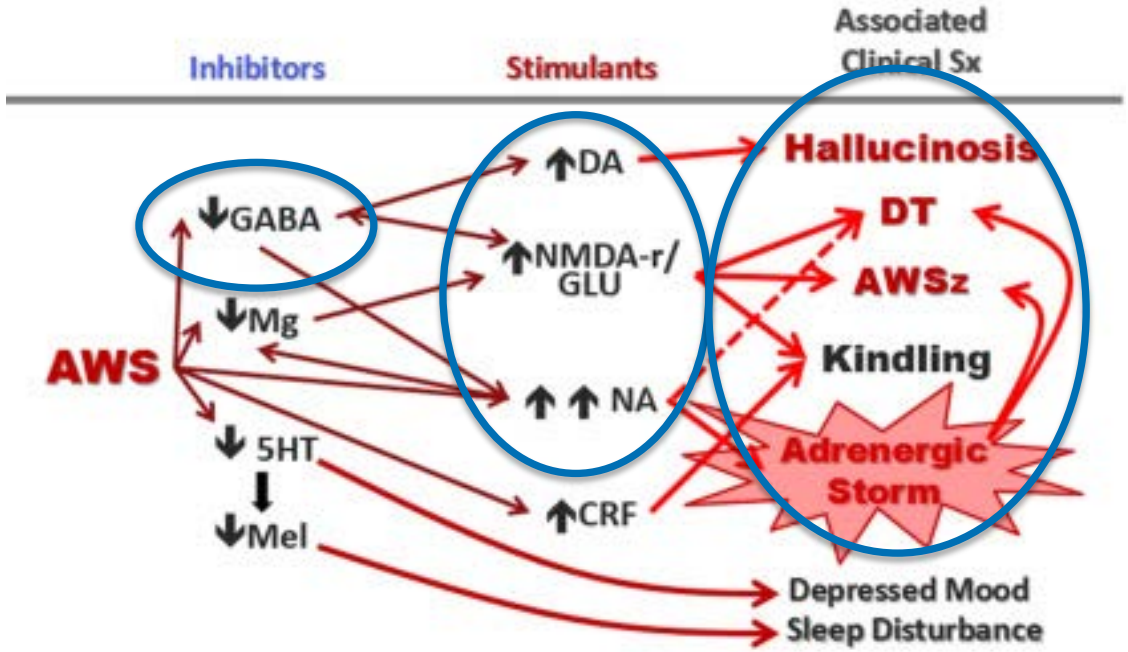
Long-Acting Agents

- Diazepam
- Chlordiazepoxide

Short-Acting Agents

- Lorazepam
- Oxazepam
- Midazolam





Phenobarbital

OFF-Label Use

TWO Mechanisms of Action:

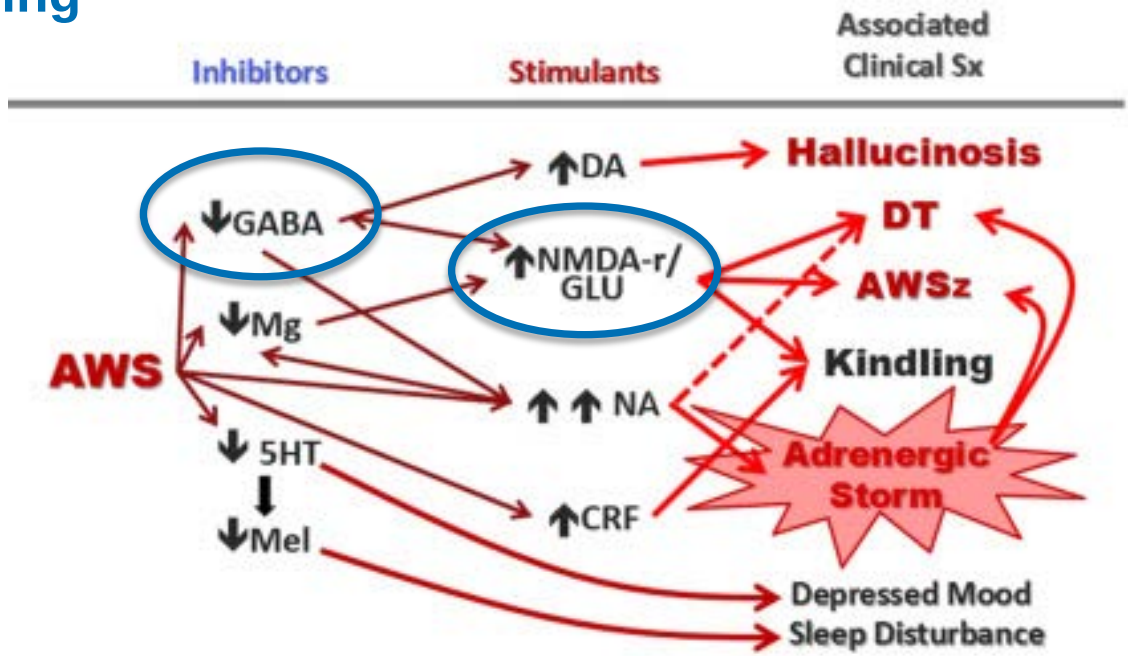
- Binds GABA-A receptor → Mimics chronic alcohol use
- Inhibits NMDA receptor → reduces neuroexcitation

Low Quality of Evidence, but lots of studies ongoing

- Severe AWS
- Poor quality studies, large variation in dosing
- Reduced ICU admission rates
- Combo with **dose-escalation** Benzos:
  - Decreased ICU LOS
  - Decreased time on mechanical ventilation

Dangerous with supratherapeutic dosing

- Elimination half-life is 5-6 days!
- Narrow therapeutic window



Which should I use for Severe/Complicated Withdrawal?

1st Line: long-acting benzo load

- My favorite: IV Diazepam

When to consider phenobarbital instead as 1st line

- Benzodiazepines contraindicated
- h/o prior benzo refractoriness
- IV benzo shortages
- very experienced with use

Initiating Treatment for AUD Prior to Discharge

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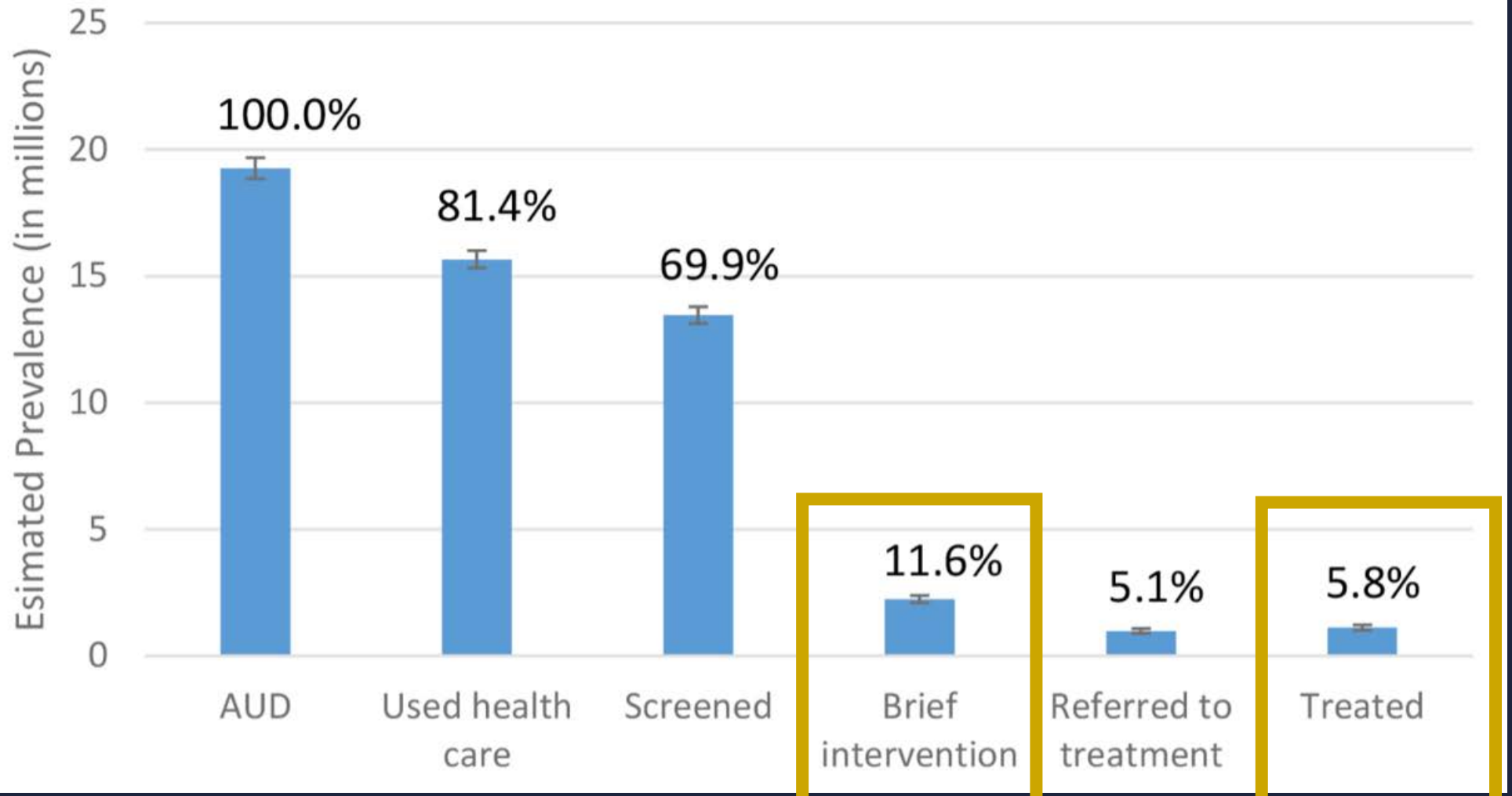
Figure 1a. Alcohol Use Disorder



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Mintz CM, Hartz SM, Fisher SL, Ramsey AT, Geng EH, Grucza RA, Bierut LJ. A cascade of care for alcohol use disorder: Using 2015-2019 National Survey on Drug Use and Health data to identify gaps in past 12-month care. Alcohol Clin Exp Res. 2021 Jun;45(6):1276-1286. doi: 10.1111/acer.14609. Epub 2021 May 16. PMID: 33993541; PMCID: PMC8254783.

“What are your goals around your alcohol use?”

Wait until withdrawal symptoms improved before engaging in long-term goals, MAUD discussions.

Goal does NOT need to be complete abstinence to start MAUD.

MAUD can also help reduce cravings, heavy drinking days, or total drinking days in patients whose goal is to cut back on use.

Medications and counseling both effective alone, combination most efficacious.

Hospitalists Should Start a MAUD Revolution

Medications for AUD are underused

Initiating MAUD during hospitalization in patients hospitalized for alcohol-related disorders improves outcomes

Composite adjusted RR 0.58, 95% CI 0.45-0.76

- Decreased all-cause mortality
- Decreased all-cause emergency department visits
- Decreased all cause readmission

Decreased 30-d alcohol-related ED visits or hospitalization

- RR 0.49, 95% CI 0.34-0.71

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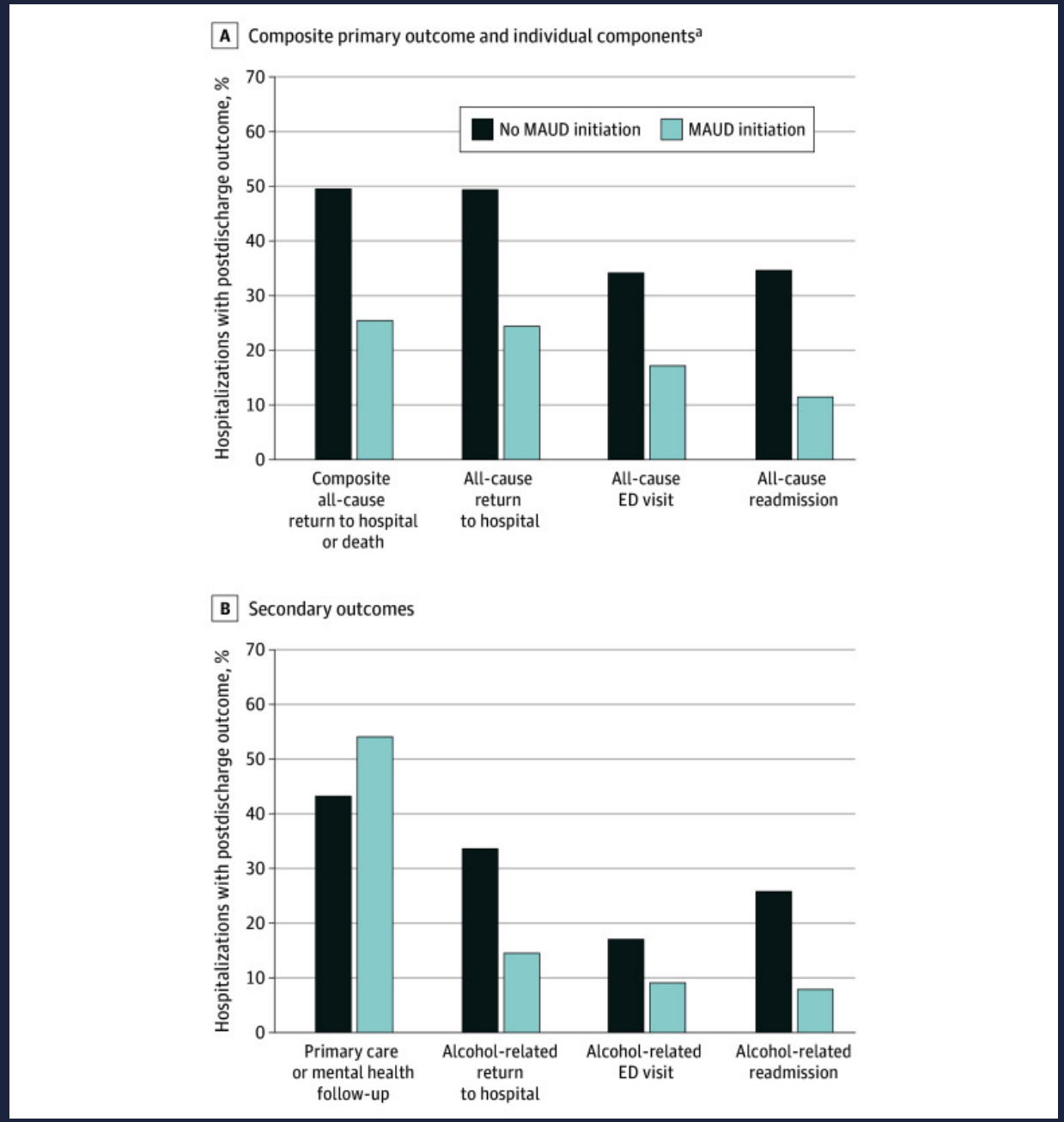
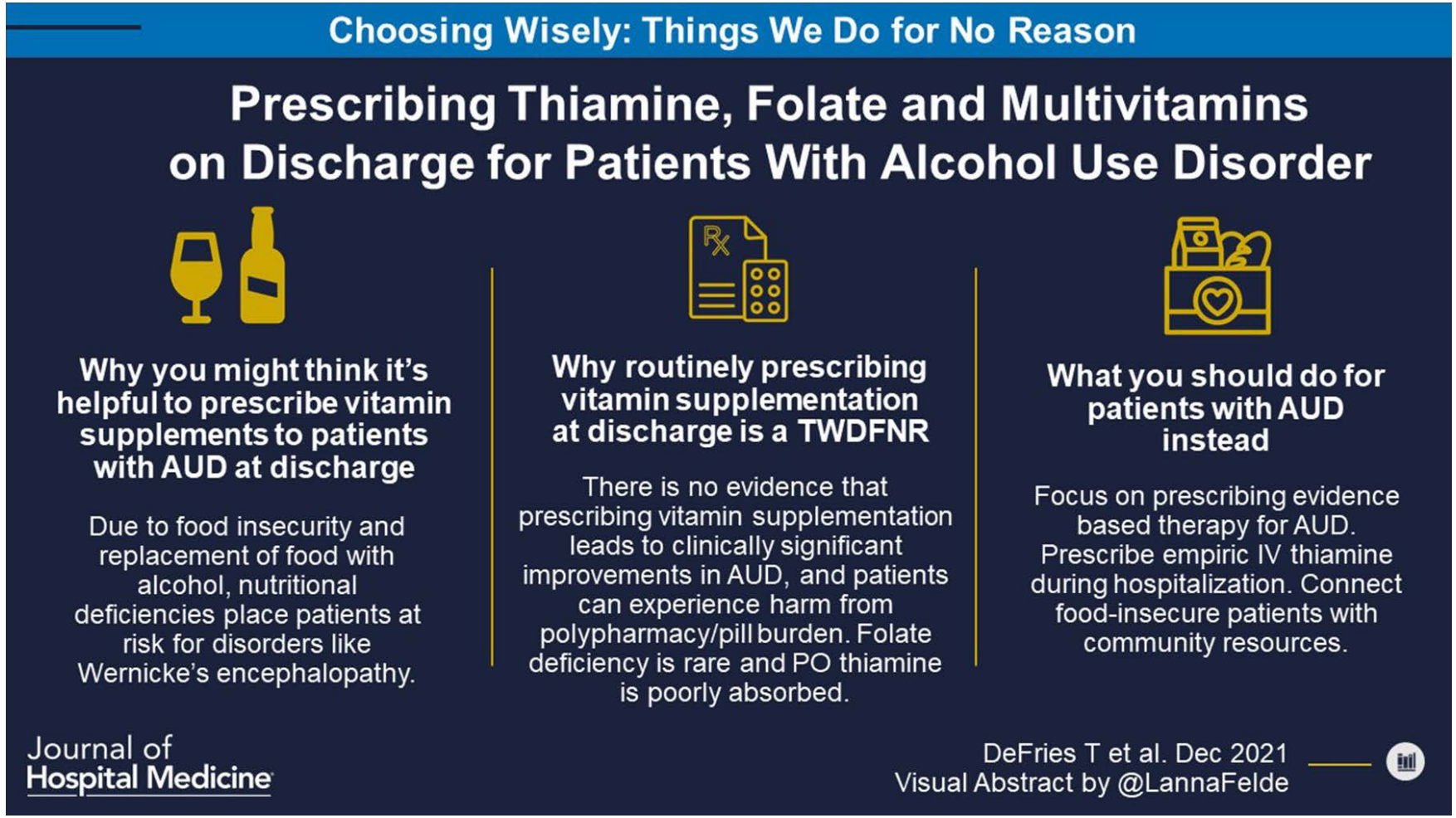


Bernstein EY, Baggett TP, Trivedi S, Herzig SJ, Anderson TS. Outcomes After Initiation of Medications for Alcohol Use Disorder at Hospital Discharge. JAMA Netw Open. 2024 Mar 4;7(3):e243387. doi: 10.1001/jamanetworkopen.2024.3387. PMID: 38551564; PMCID: PMC10980961.

MAUD	Naltrexone	Acamprosate	Disulfiram	Gabapentin	Topiramate IR
FDA-Approved	YES	YES	YES	NO (Off Label) 2nd line agent	No (Off Label)
Dose & Route	50mg PO Daily (max 100mg) 380mg IM Monthly	666mg PO TID -needs renal adjustment to 333mg PO TID if CrCl 30-50 -start 333mg PO TID if wt<60kg)	250mg PO Daily	300-600mg PO TID	100mg PO BID -start 25mg daily; increase 25mg weekly x4 weeks, then 50mg weekly; gradually uptitrate) - Needs 50% dose reduction & slower titration if CrCl<70
Side Effects	GI (nausea), Headache, Dysphoria ?Hepatotoxicity?	Diarrhea, fatigue	Neuropathy, hepatitis, "Disulfiram reaction"	Somnolence, Dizziness, Ataxia	GI upset, taste perversion, paresthesia, cognitive disturbance, weight loss
Cost	PO: $33/month LAI: $1350/month (Free inpatient program!)	$70/month	$34/month	$30/month	$14/month
Reduces heavy drinking	Yes	Yes	No	Yes	Yes
Manages Cravings	Yes	Yes	No	Yes	No
Supports Abstinence?	Yes	Yes	Yes	Yes	Yes
Can I start in patients with liver disease?	Safe in Child-Pugh Class A/B	Safe in Child-Pugh Class A/B	No – AVOID! (associated with fulminant hepatitis) (Can consider in Child Pugh Class A if patient's preference)	Yes, but not any great evidence to support in this specific population. Consider avoiding if h/o HE or prone to AKI	Safe in Child Pugh Class A/B; caution if HE
Contraindications	Current opioid use (can cause precipitated withdrawal) Hepatic Failure or liver enzymes >4-5x ULN	CrCl<30	Severe CAD, Ongoing alcohol use, Psychosis, SI, Seizure Disorder (relative), No capacity to understand implications of consuming alcohol while on disulfiram, Child-Pugh C		Cognitive dysfunction
Consider if these co-morbidities	Opioid Use Disorder (LAI Naltrexone) Stimulant Use Disorder (PO naltrexone)	Child-Pugh Class C Cirrhosis (decompensated)		Neuropathy Anxiety, +AWS sx	Seizure Disorder, Stimulant Use disorder Anxiety, Migraine Headaches
Additional Considerations	No opioids for 7-10 days prior to starting (can cause precipitated withdrawal). If PO, counsel on GI side effects (dose reduce to 25mg for few days) NNT 18 for return to any drinking, NNT 11 for return to heavy drinking. May reduce readmission given prior to discharge. If LAI, counsel on injection site reactions, perioperative planning, medical alert bracelets.	Needs renal adjustment. Contraindicated in CKD4+. Okay if goal is to decrease drinking only. NNT 11 for return to any drinking. Decreased RTU. Great abstinence than naltrexone. Less effective than naltrexone for reduced craving or return to heavy use.	Do NOT use in Liver Disease or severe CAD. Goal must be abstinence. Consider direct observed intake by family/support. Poor understanding of disulfiram reaction is relative contraindication. Start after 48 hours of total abstinence.	Consider w concurrent neuropathy. Efficacy for reducing heavy drinking more pronounce in patients experiencing withdrawal sx.	Consider with seizure history Caution with CKD Max dose 300mg/day; divide to BID dosing once >50mg May reduce hormonal contraception Can cause metabolic acidosis
Follow-up after discharge	LFTs in ~4 wks	Consider BMP	LFTs in 1m, 6m	Consider BMP	BMP

Should I prescribe supplements on discharge?



Probably not…

So just prescribe MAUD instead

☺

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DeFries, T., Leyde, S., Haber, L.A. and Martin, M. (2021), Things We Do for No Reason™: Prescribing Thiamine, Folate and Multivitamins on Discharge for Patients With Alcohol Use Disorder. Journal of Hospital Medicine, 16: 751-753. https://doi.org/10.12788/jhm.3691

Harm Reduction / Safer-Use in AUD

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Safer Use Strategies for Alcohol Use

Stay Healthier When Drinking:

- ❑ Alternate Water and Alcohol
- ❑ Count Drinks (bottle cap/tab in pocket trick)
- ❑ Try to Eat (esp protein, complex carbs)
- ❑ Take Vitamins

Change How Much You Drink:

- ❑ Less is more (Buzz > Intoxicated)
- ❑ Choose not to use (even for a few hours, or one non-drinking day a week)
- ❑ Avoid withdrawal; seek medical detox if decision to stop completely

Make Drinking Safer:

- ❑ Avoid non-beverage alcohol (vanilla extract, cooking wine, mouthwash, etc.)
- ❑ Alternate alcohol & non-alcoholic beverages
- ❑ Drink beer instead of malt liquor; preferably beers with 4-6% ABV
- ❑ Measure alcohol when making mixed drinks
- ❑ Pay attention to ABV
- ❑ Space your drinks
- ❑ Add extra ice to drinks
- ❑ Avoid mixing drugs (both prescription and non-prescription)
- ❑ Drink in a safe place, with people you trust, in control of your surroundings

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Collins & Clifasefi. 2023. Harm Reduction Treatment for Substance Use. Hogrefe Publishing GmbH.
University of Washington. Safer Use Strategies: Alcohol. Available at: https://depts.washington.edu/harrtlab/wordpress/wp-content/uploads/2023/10/Safer-Use-Strategies-Alcohol-8.17.23.jpg

Summary

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Key Take-Home Points:

10 Things you can implement into your practice starting *today:*

Not all heavy use is alcohol use disorder
Check yourself (and colleagues!) to ensure use of non-stigmatizing terminology
Check for medical complications of alcohol use, comorbid SUD, etc (check Mg, hepatic enzymes, urine drug screen)
Leverage PAWSS to triage which patients to place on monitoring/treatment protocols
IV thiamine while inpatient; none on discharge (in most patients)
Brief interventions work, especially in hazardous use
Don’t forget to treat the AUD after you’re done treating with alcohol withdrawal
Leave off the polypharmacy of supplements on discharge; instead, start MAUD
Ask your patient what their goals are around their substance use
Meet your patient where they are! Know and counsel on safer-use strategies

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Thank You

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Xylazine in the unregulated drug supply

SHM Rapid Clinical Updates

9/19/24

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- 2023 TREETOP Branch Pilot Award

Disclosures:

None

Thank you to our patients who have shared their stories and have taught us through their experiences. With their permission, we have embedded some of their insights throughout this presentation.

Learning Objectives

By completion of this session, participants should be able to:

Describe xylazine's rise in the unregulated drug supply

Identify available methods of xylazine screening and identification.

Discuss signs and symptoms of xylazine withdrawal and associated management.

Explain wound care management strategies for spectrum of xylazine-associated wounds.

Case

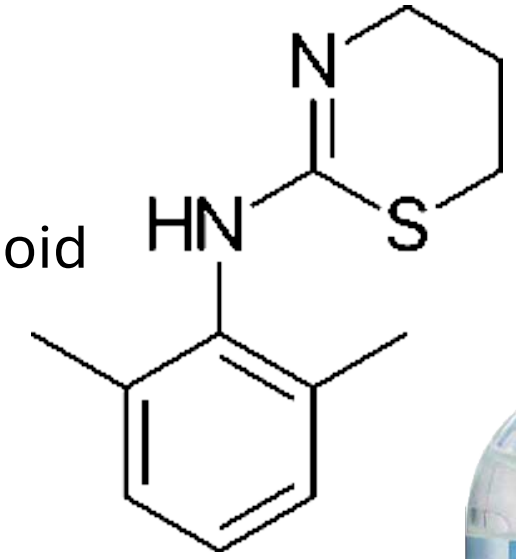
CJ, a 37-year-old man, was found down and given 4 mg of intranasal naloxone, improving his respirations but remaining somnolent. He was transferred to the ED, where his exam revealed bilateral necrotic wounds on his upper extremities. Labs show Cr 2.4 (baseline 0.6), AST 112, CPK 12,000, and WBC 14. UA is positive for blood with 1-2 RBCs/hpf, and UDS is pending.

What substances are most likely contributing to his presentation?

a. Etizolam
b. Fentanyl
c. Ketamine
d. Nitazene
e. Xylazine

Xylazine

- Full α-2 adrenergic and kappa opioid receptor agonist
- Causes CNS depression
- Sedative, analgesic, and muscle relaxant properties
- Structural similarities to clonidine and lofexidine



Examples of xylazine samples collected by MADDS


BRENNAN SAID TRANQ IS OFTEN A DEEP PURPLE COLOR. PHOTO BY DAN CAIN/VICE NEWS

Colloquially known as tranq, sleep-cut, Anastasia de caballo, sueño

Historical Background

1962
Developed as antihypertensive; trials stopped due to hypotension/sedation

1972
FDA approved for veterinary use

Early 2000s
Identified in Puerto Rico with heroin

2019
Sporadic detection in U.S. Northeast

2021
↑ Reports of xylazine-associated clinical harms

10/2022
DEA Joint Intelligence Report: Forensic lab identifications of xylazine

Region	2020	2021	% Increase
Northeast	346	556	61%
South	198	580	193%
Midwest	110	118	7%
West	77	163	112%

4/2023
Biden-Harris Administration designates Fentanyl-Xylazine an emerging threat

Reed, MR et al. DAD 2022
Jawa, R et al. DAD. 2024
Jawa, Shang, Hull et al. Unpublished data. 2024

How do PWUD feel about xylazine?

1. Learn of exposure AFTER new symptom/harm
2. Dislike sensation of xylazine with fentanyl
3. Worry about unintentional harms & unregulated supply
4. Difficult to find opioids without xylazine

> *I mean, I don't know why this all of a sudden popped up. I don't know why it's all of a sudden here... I mean, it just knocks you out, and there's no purpose for it... it's not a good high. It's not fun. It's not cheaper.*

Case

CJ is wondering if he was exposed to xylazine and asks you if there are any tests that can confirm this. Which of the following methods can CJ use to determine if he was exposed to xylazine?

a. Urine drug immunoassay screen
b. Urine GC/MS testing
c. Xylazine test strips
d. Appearance of his drugs

Reed M. K. et al. DAD 2022
Shuda S, Lam H.Y. CFSRE. October 2022

Xylazine diagnostic testing

Not present on basic urine drug screen

Can be detected in serum and urine, likely a send out test

Short half-life, testing less reliable if delayed

Unclear clinical utility and caution with interpretation

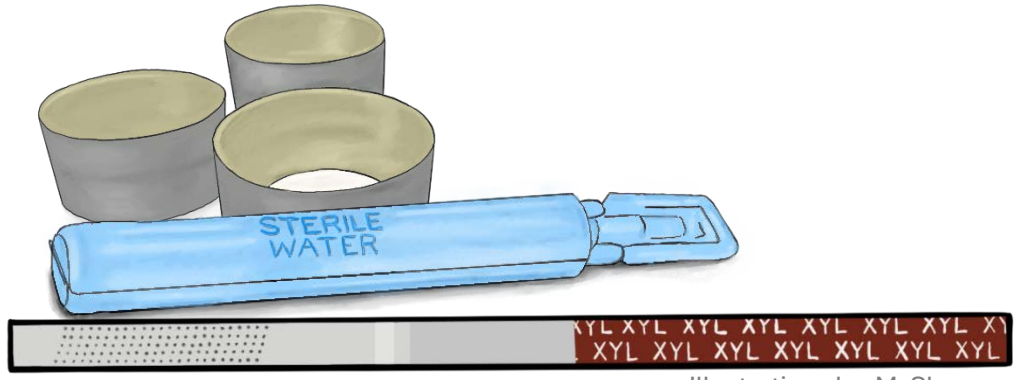
Suspect xylazine exposure with presence of non-pharmaceutical fentanyl

Community Drug checking programs

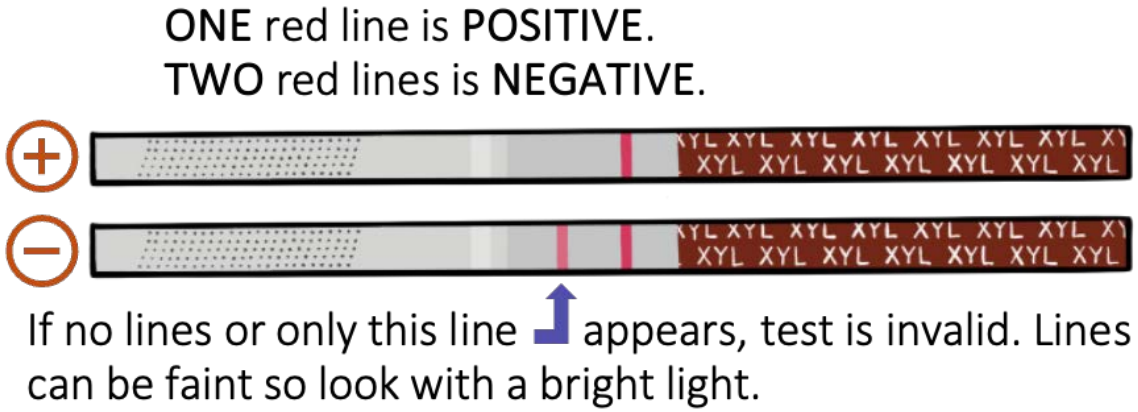
- Massachusetts Drug Supply Data Stream (MADDS)
- UNC Street Drug Analysis Lab
- Maryland Center for Harm Reduction Services RAD
- DrugsData.org

Peiper NC et al. *IJDP* 2019
Reed MK et al. *DAD* 2022
Thompson E et al. *DAD* 2024

Xylazine Test Strips (XTS)

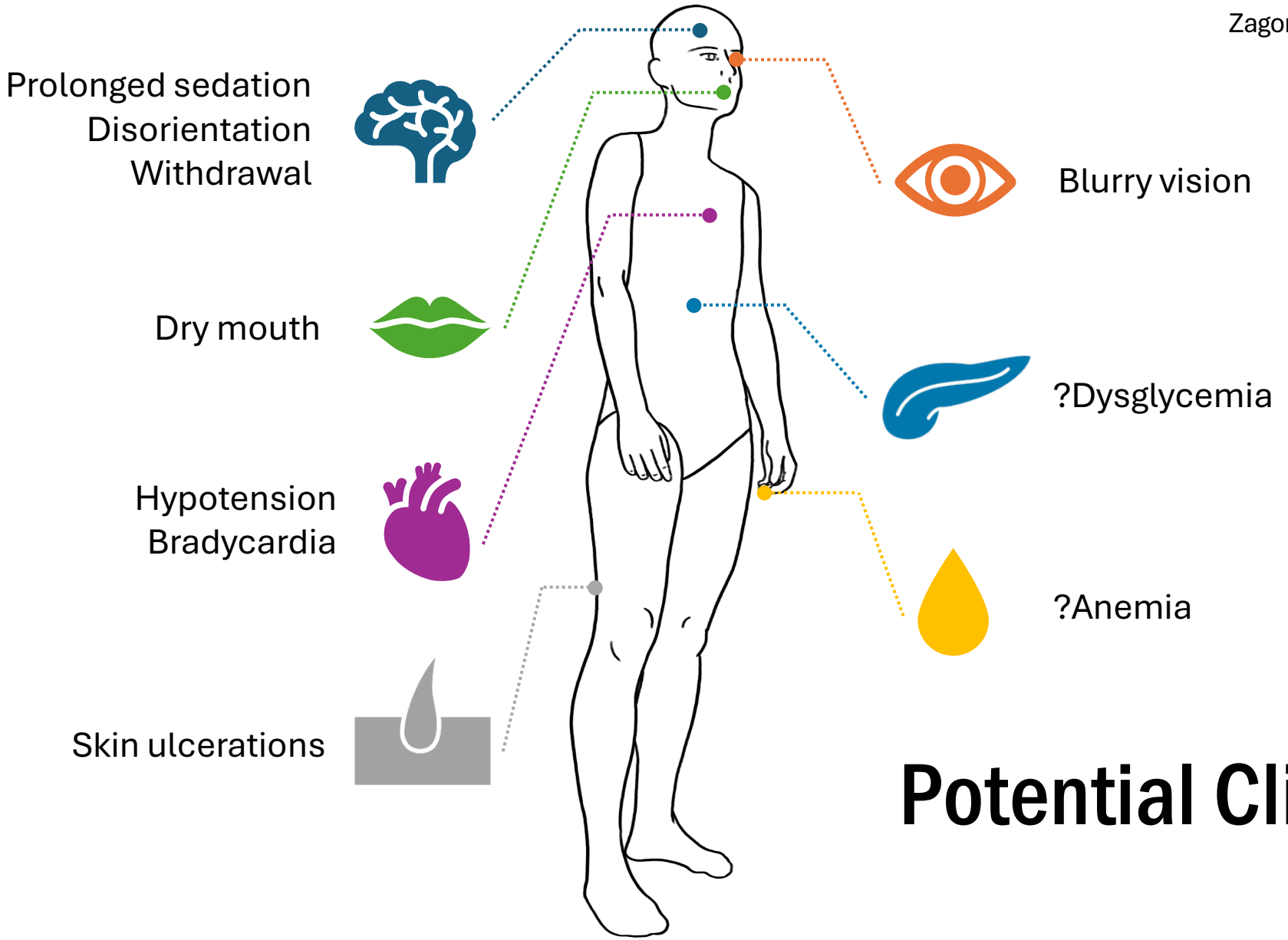


Illustrations by M. Shang



- Validation studies for **opioids** only
- Different brands of XTS- be sure to follow package insert instructions for testing steps
- Use in conjunction with advanced drug checking modalities

Kacinko SK et al. *Journal of Analytical Toxicology* 2022
Zagorski CM et al. *Harm Reduction Journal* 2023
Xiao YF et al. *BMC Anesthesiology* 2013



Potential Clinical Effects

Reed MK et al. *DAD* 2022
Zagorski CM et al. *HRJ* 2023
German et al. *HRJ* 2024
Bedard ML et al. *Addiction Neuroscience* 2024

Prolonged Sedation

> I'm having more problems with the tranq than I am with the fentanyl down here. I have basically blackouts from the tranq. I lose days at a time. Like I'll lose four, five, six hours…"

At Risk For

- Environmental injury
- Extended immobility → DVT, soft tissue breakdown, rhabdomyolysis
- Assault/theft

Harm Reduction Strategies

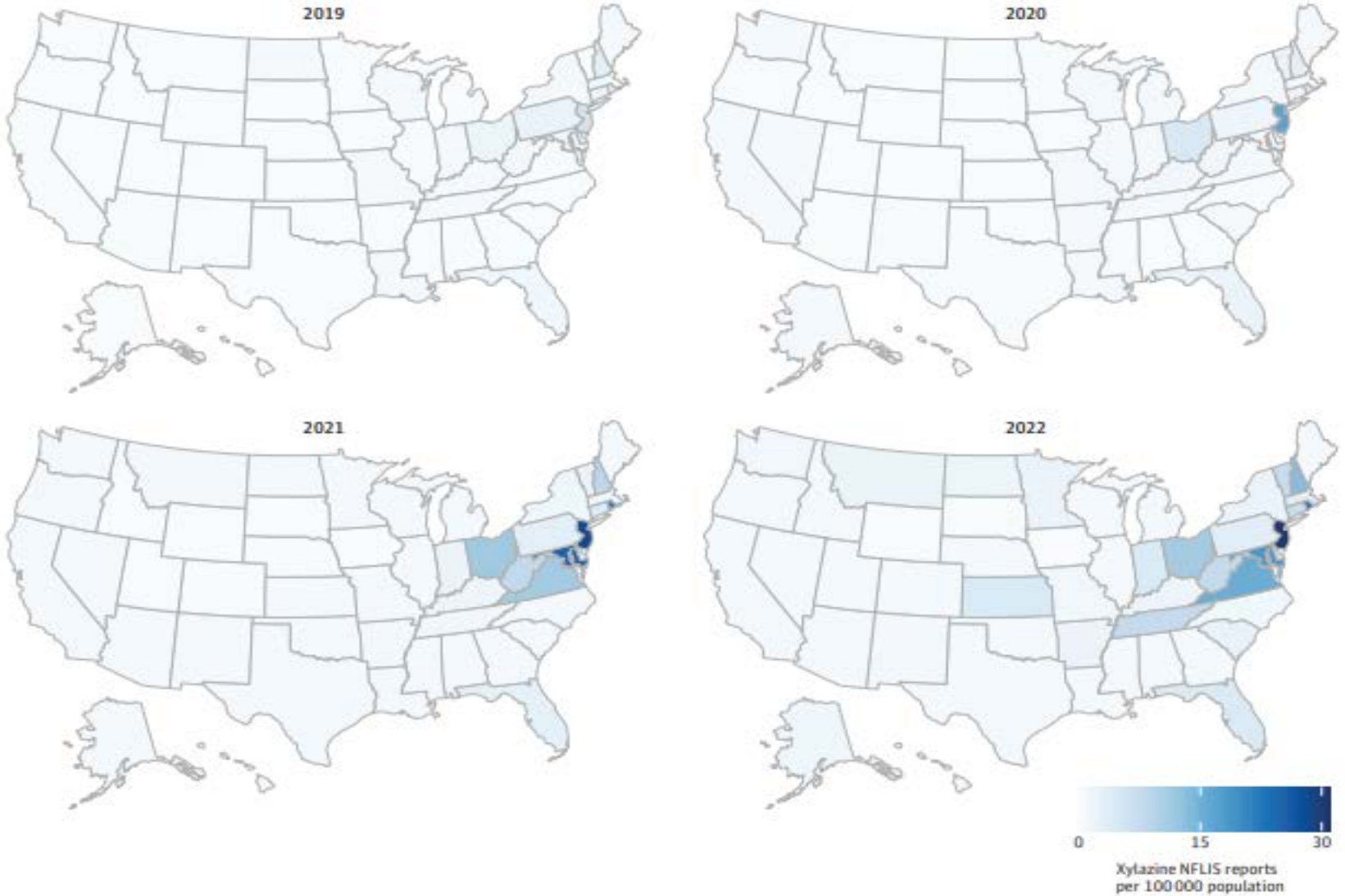
- Never use alone
- Place in recovery position, avoid atypical positions
- Rest in a safe place after using

Case (cont.)

CJ reports using 50 bags of fentanyl daily and notices that it feels different lately, causing prolonged sleep. He’s heard about “tranq dope” and its potential resistance to naloxone.

How would you counsel him on xylazine's impact on overdose?

Figure 1. Xylazine NFLIS Drug Report Rates (per 100 000 Population), US, 2019-2022



However, there is an unclear impact on overdose!

Kariisa M et al. *MMWR* 2023
Cano et al. *JAMA Network Open*. 2024

Opioid Overdoses with Xylazine in the ED

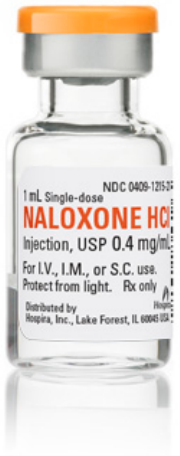
Clinical outcome variables	Xylazine ($n = 90$)	Xylazine absent ($n = 231$)	*P*-Value
Cardiovascular outcomes			
Received CPR	4 (4.4%)	33 (14.3%)	**0.013**
Bradycardia	2 (2.2%)	4 (1.7%)	0.77
Pulmonary outcomes			
Intubated within 4 h	2 (2.2%)	13 (5.6%)	0.193
Non-invasive positive pressure within 4 h	1 (1.1%)	4 (1.7%)	0.689
Any ventilatory support within 4 h	3 (3.3%)	17 (7.4%)	0.182
Intubated after 4 h	2 (2.2%)	11 (4.8%)	0.298
Non-invasive positive pressure after 4 h	2 (2.2%)	2 (0.9%)	0.327
Any ventilatory support after 4 h	4 (4.4%)	13 (5.6%)	0.67
Central nervous system outcomes			
Coma within 4 h	24 (26.7%)	87 (37.7%)	0.063
Coma after 4 h	12 (13.3%)	35 (15.2%)	0.682
Overall outcomes			
Death	1 (1.1%)	5 (2.16%)	0.528
Discharged from the ED	59 (65.6%)	147 (63.6%)	0.528
ICU Admissions	11 (12.2%)	39 (16.9%)	0.30
Miscellaneous			
Length of hospitalization (h); median (IQR)	10 (5–28)	9 (5–36)	0.806
Total naloxone dose (mg)	3.68 (1.3–4.05)	2.8 (2–4.1)	0.448

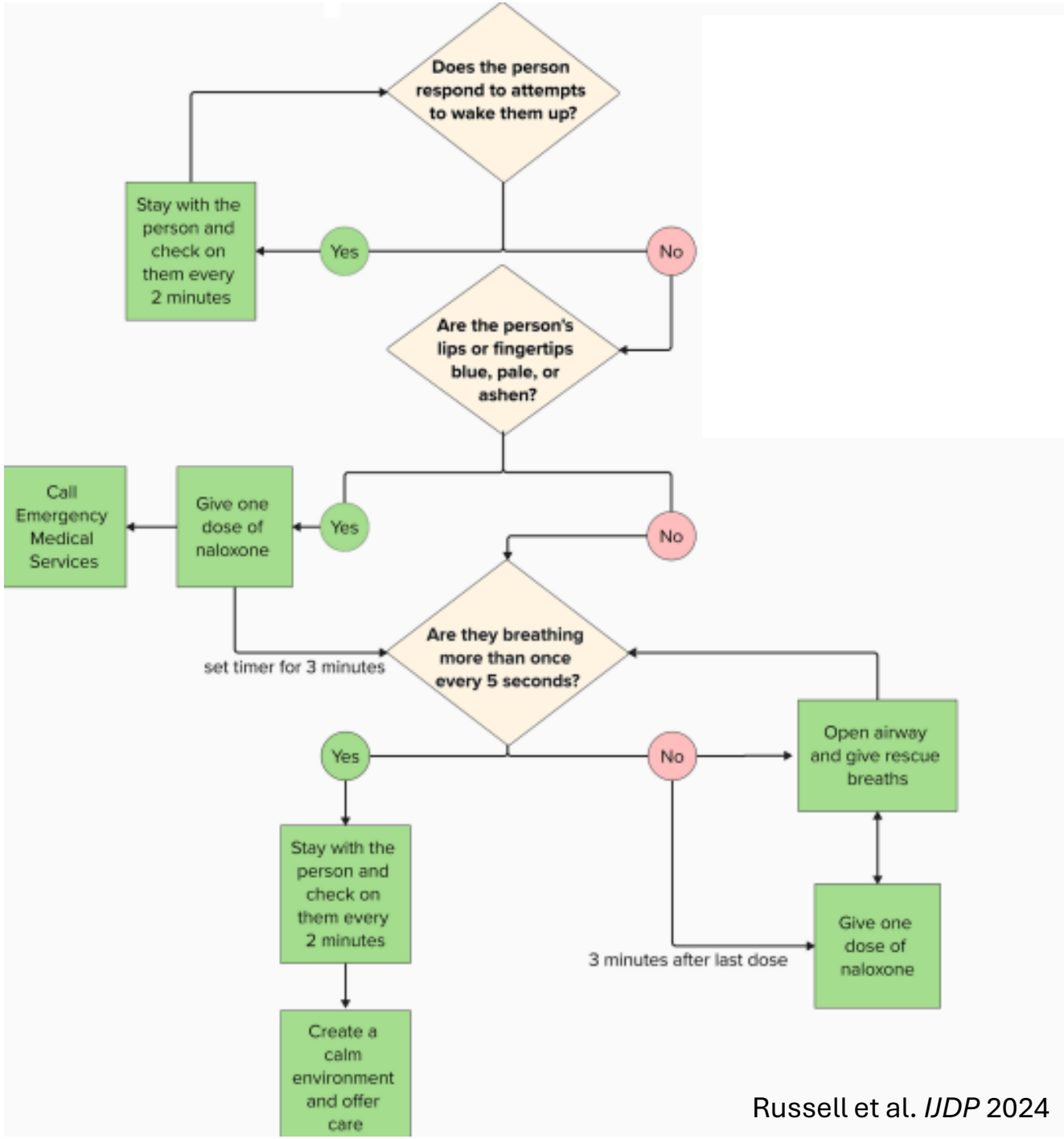
Love JS et al. *Clinical Toxicology* 2023

Xylazine-Associated Overdose

- Never use alone, buddy system
- Check drug potency: start low, go slow
- Assess route/change route
- Reduce the number of different substances
- Have naloxone nearby/visible
- Dispel the myth of naloxone resistant overdoses

Overdose Response





Russell et al. *IJDP* 2024

Case

CJ is started on oxycodone 60 mg q4h for opioid withdrawal and initiated on methadone 40 mg. While his withdrawal symptoms improve, he continues to experience intense restlessness, anxiety, and dysphoria, leading him to consider a patient-directed discharge to self-manage.

What do you do?

a) Continue current treatment
b) Increase oxycodone
c) Start PRN lorazepam for anxiety
d) Add scheduled clonidine
e) Start scheduled gabapentin

UPenn CAMP. *Best Practices for Management of Xylazine Withdrawal and Xylazine-related Overdose*. 2023
Ehrman-Dupre, R. et al. *JAM* 2022

Xylazine Withdrawal

- Not well-defined syndrome, significant overlap with opioid withdrawal
- Can present with anxiety, restlessness, dysphoria symptoms despite opioid administration
- Usually within 24h of last use and last 3-5d

Prophylaxis and treatment of xylazine withdrawal

Clonidine: 0.1mg PO q6-8h scheduled and titrated to effect, up to a maximum dose of 0.3 mg PO Q8h

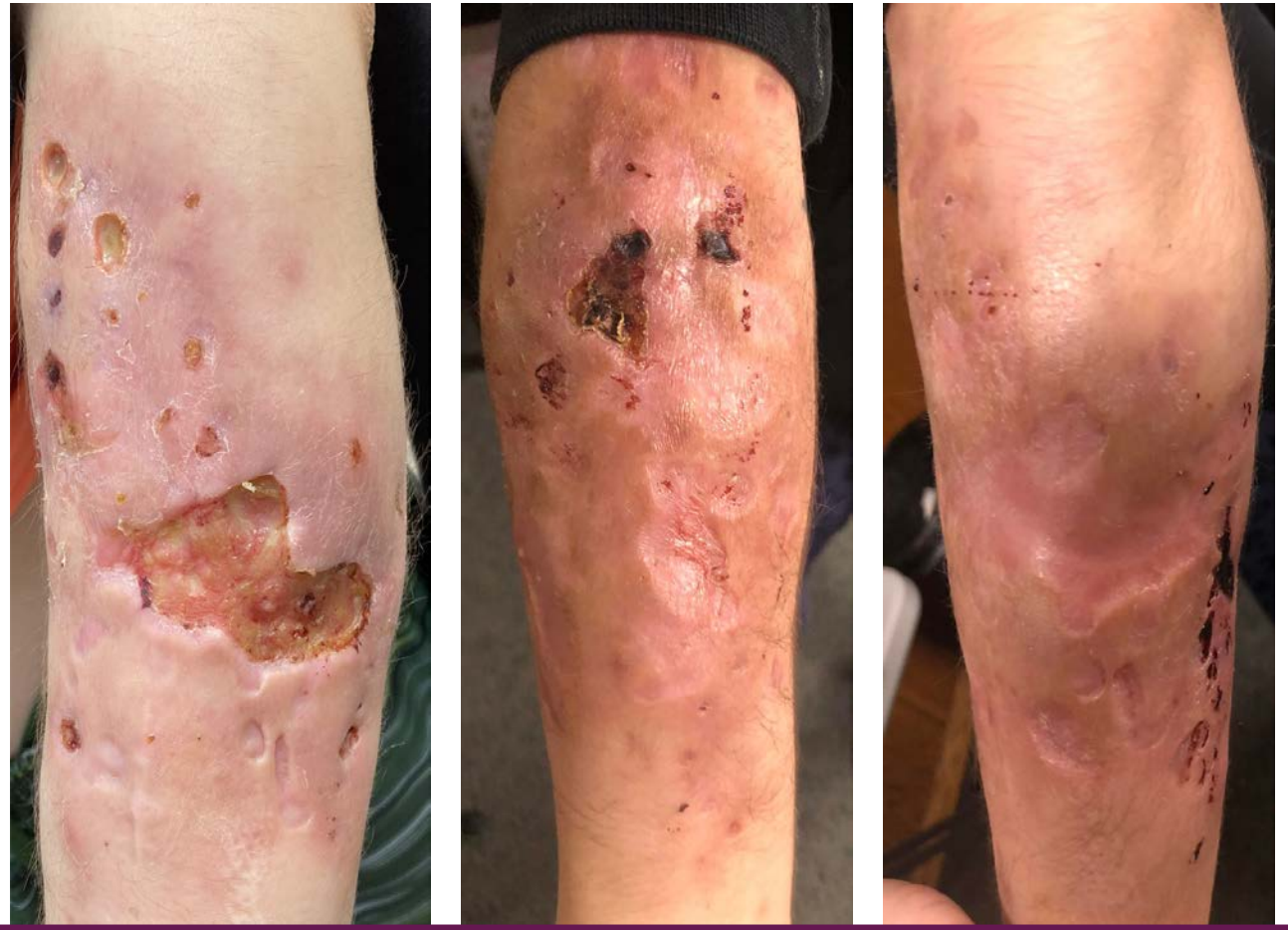
Standard opioid withdrawal management with adjuncts

Concomitant initiation of medications for opioid use disorder
Adjuncts: gabapentin 300-600 mg PO q8h and 300mg QHS, olanzapine, hydroxyzine, GABA agonists

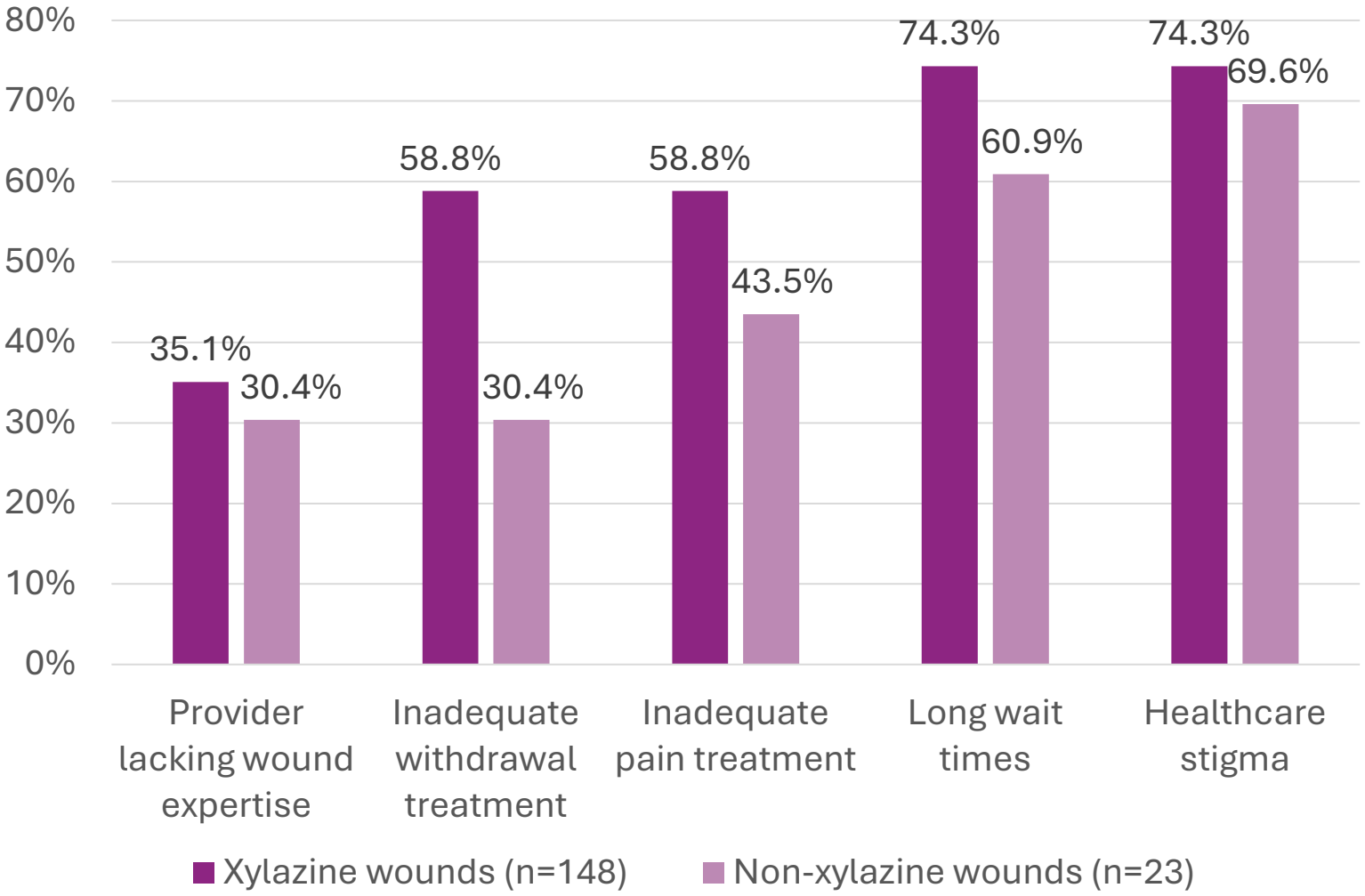
Jawa, et al. *DAD*. 2024

Xylazine associated Wounds

- Non-distinct ulcer morphology
- Can occur irrespective of route or site of use
- Small blisters coalesce to ulcer at risk for suprainfection
- Likely multifactorial etiology
- Can heal over time



Patient experiences with medical care for wounds



21.2% experienced being denied to detox/rehab due to their wounds!

Xylazine Wound Management

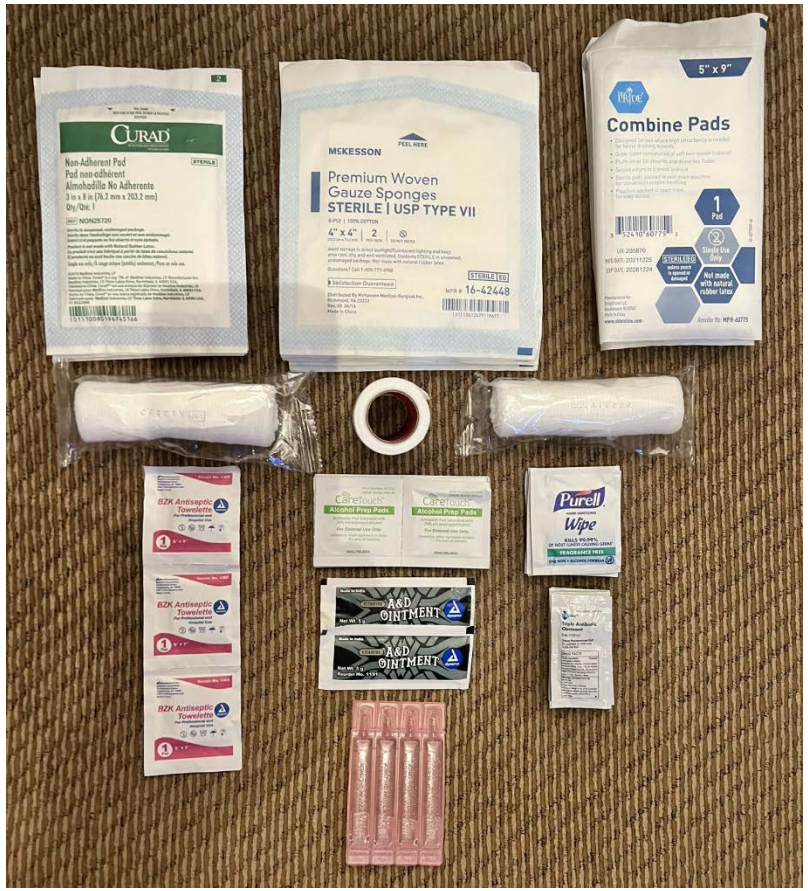


Image courtesy of Jen Shinefeld 2023

01 Document all areas with wounds

02 Remove any dressings

03 Clean wounds to remove surface bacteria/debris

04 Apply treatment/dressing to wounds

05 Secure dressings with Surginet or ACE wrap

06 Educate patients on wound care pearls

Common Treatment Recommendations

Department of Public Health
CITY OF PHILADELPHIA

RECOMMENDATIONS FOR CARING FOR INDIVIDUALS WITH XYLAZINE-ASSOCIATED WOUNDS

January 8th, 2024

SUPHR
Substance Use Preventio

HEALTH FEDERATION OF PHILADELPHIA
community health since 1983

COMMENTARY

OPEN

Xylazine-associated Wounds: Clinical Experience From a Low-barrier Wound Care Clinic in Philadelphia

Rachel McFadden, MPH, BSN, RN, Sara Wallace-Keeshen, FNP-BC, Kristi Petrillo Straub, AGNP-C, Rebecca A. Hosey, MPH, BSN, RN, Rachel Neuschatz, MSN, RN, Keara McNulty, BSN, RN, and Ashish P. Thakrar, MD, MS

Abstract: The veterinary sedative xylazine is spreading in unregulated opioid supplies across North America. Among people who use drugs with repeated exposure to xylazine, a distinct wound type has emerged. Here, we describe these wounds and share our experience treating them in a nurse-led, low-barrier wound care clinic in Philadelphia, PA. We propose a reimagining of wound treatment across settings to better serve people who use drugs, and we advocate for stronger protections against the harms of an increasingly adulterated drug supply. Our perspective from the epicenter of the xylazine crisis can inform the response of communities across the country who are starting to face harms associated with xylazine.

Keywords: substance-related disorders, wounds and injuries, xylazine

(*J Addict Med* 2024;18: 9–12)

Xylazine, a veterinary sedative colloquially known as "tranq," is spreading in unregulated opioid supplies across North America.[1] Xylazine first emerged in unregulated drug supplies in Puerto Rico in the 2000s, where people who use drugs (PWUDs) and researchers noted an association between repeated xylazine exposure and a distinctive soft tissue wound.[2–4] More recently, clinicians in the United States have described the same phenomenon.[5,6]

From the Prevention Point Philadelphia, Philadelphia, PA (RMF, SW-K, KPS, RH, KMN); Center for Addiction Medicine and Policy (CAMP), University of Pennsylvania, Philadelphia, PA (RMF, APT); Stephen Klein Wellness Center, Project HOME, Philadelphia, PA (SW-K); Leonard A. Lauder Community Care Nurse Practitioner Program, University of Pennsylvania School of Nursing, Philadelphia, PA (RH); Division of Substance Use Prevention and Harm Reduction, Philadelphia Department of Public Health, Philadelphia, PA (RN); and Division of General Internal Medicine, Department of Medicine, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA (APT).

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The authors report no conflicts of interest.

Send correspondence and reprint requests to Rachel McFa… RN, 1 Convention Ave, Philadelphia, PA 19104. E-mail… pennmedicine.upenn.edu.

Our nurse-led Wound Care Clinic (WCC) was established in 2015 within Prevention Point Philadelphia, a harm reduction nonprofit in the Kensington neighborhood. Initially formed to respond to the rise of injection-related skin and soft tissue infections (SSTIs) associated with fentanyl, our clinic has a unique perspective on the local drug supply and its effects on PWUDs. In 2020, as Philadelphia emerged as the epicenter of the xylazine crisis, WCC patients began presenting with wounds resembling those attributed to xylazine in previously published reports.[3] Today, more than 90% of unregulated fentanyl samples in Philadelphia contain xylazine[7] and annual WCC visits are five times that of 2020 due to a surge in what the local community has come to call "tranq wounds."

Here, we summarize our experience as WCC nurses caring for PWUDs with this new wound type. The descriptions and recommendations we share are not evidence-based standards; research is urgently needed to guide the identification and response to xylazine-associated harms. Rather, we hope our clinical experience as wound care nurses in a low-barrier setting can help steer discussion toward practical clinical and public health responses to xylazine.

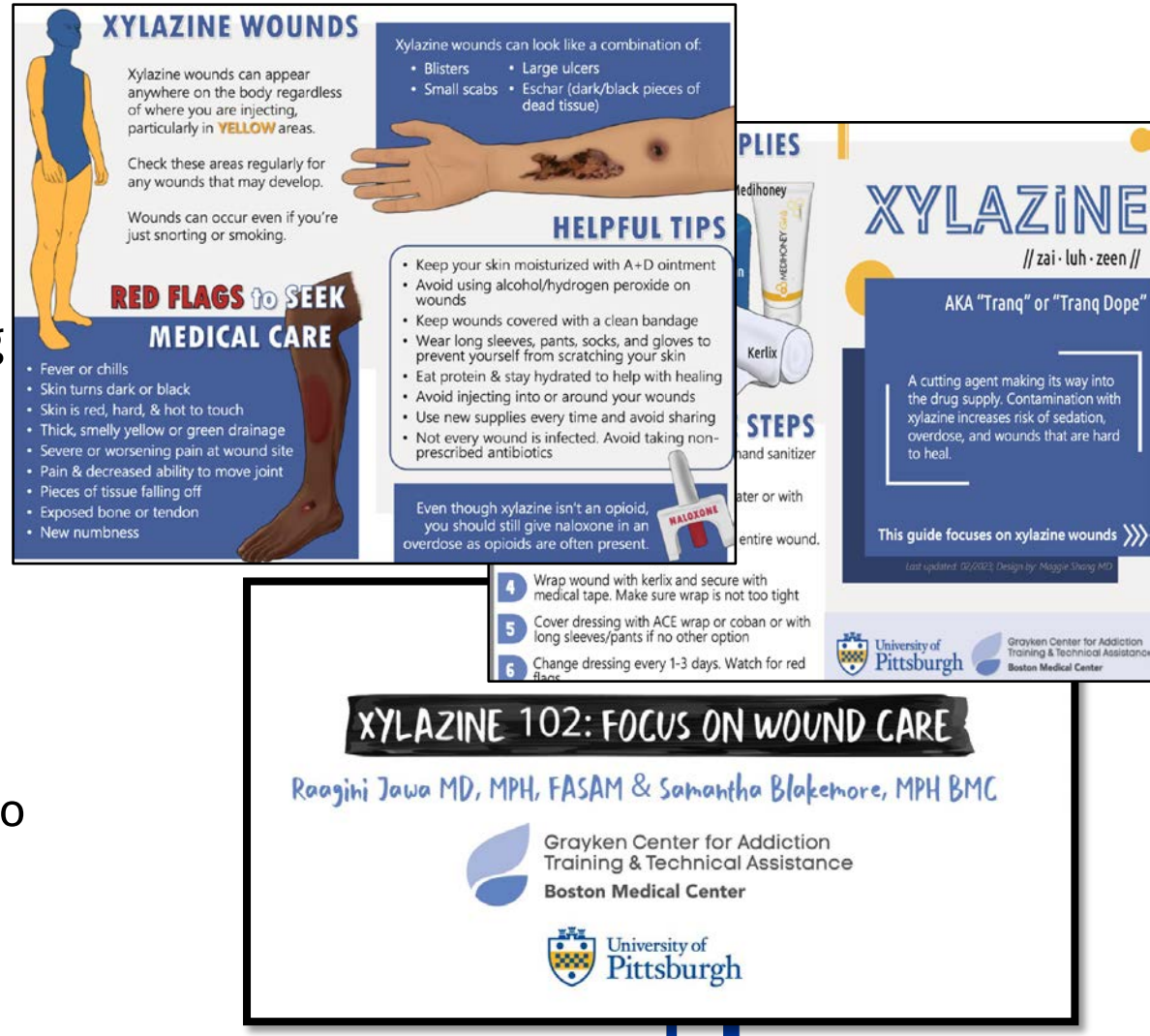
WHAT ARE XYLAZINE-ASSOCIATED WOUNDS?

Before the emergence of xylazine, most wounds treated at the WCC were SSTIs characterized by classic signs of infection including erythema and swelling around sites of injection. As fentanyl adulterated and then replaced heroin in the local drug supply through the 2010s, WCC patients who inject drugs reported more frequent injections, and we subsequently observed an increase in SSTIs. Then, in early 2020, patients began presenting with a new wound type, which they associated with certain "stamps" or brands of nonpharmaceutical fentanyl.

In our experience, these new wounds are distinct from typical injection-related SSTIs in two key ways. First, they have a unique appearance and progression. Starting as dark purple …

Education, screening, and early wound management is critical

- Screen for wounds and start care ASAP.
- Proactively treat pain and withdrawal.
- Keep wounds covered; avoid corrosive cleaners and injecting near wounds.
- Discuss access to sterile equipment and wound care supplies.
- Consider XTS to reduce xylazine exposure.
- Provide pamphlets, xylazine test strips, and 5 days of wound care supplies.
- Schedule a wound care appointment within a week and link to outpatient care.



Take Home Messages

- Patients using illicit opioids may be unaware of potential xylazine exposure
- Treat for xylazine withdrawal based on clinical suspicion
- Naloxone should be used for xylazine associated overdoses
- Effective pain and withdrawal management, along with multidisciplinary wound care, is crucial.
- **Words Matter:** terms like “zombies”, “addicts”, or “junkies” dehumanize and stigmatize our patients.

Thank you

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