The Ongoing Opioid Epidemic: Addiction and Reversal Management in the Emergency Department

A HealthTrust Webinar

January 18, 2023

CAMERON SOFIA, PHARMD, PGY-1 PHARMACY RESIDENT

MEMORIAL HOSPITAL OF SOUTH BEND

KAITLYN DEWEERD, PHARMD, BCPS, PRECEPTOR

Speaker Disclosures

- The presenter and their preceptor have no financial relationships with any commercial interests pertinent to this presentation.

- This program may contain the mention of drugs, brands or suppliers presented in a case study or comparative format using evidence-based research. Such examples are intended for educational and informational purposes and should not be perceived as an endorsement of any particular drug, brand or supplier.

Objectives

- Recall current guideline recommendations and current use of naloxone in opioid overdoses
- Identify proper therapeutic strategies for treatment of opioid withdrawal
- Recognize the legal components for prescribing medication-assisted treatment for opioid addiction management

Background

Opioid Overdose and Withdrawal Signs & Symptoms

Overdose

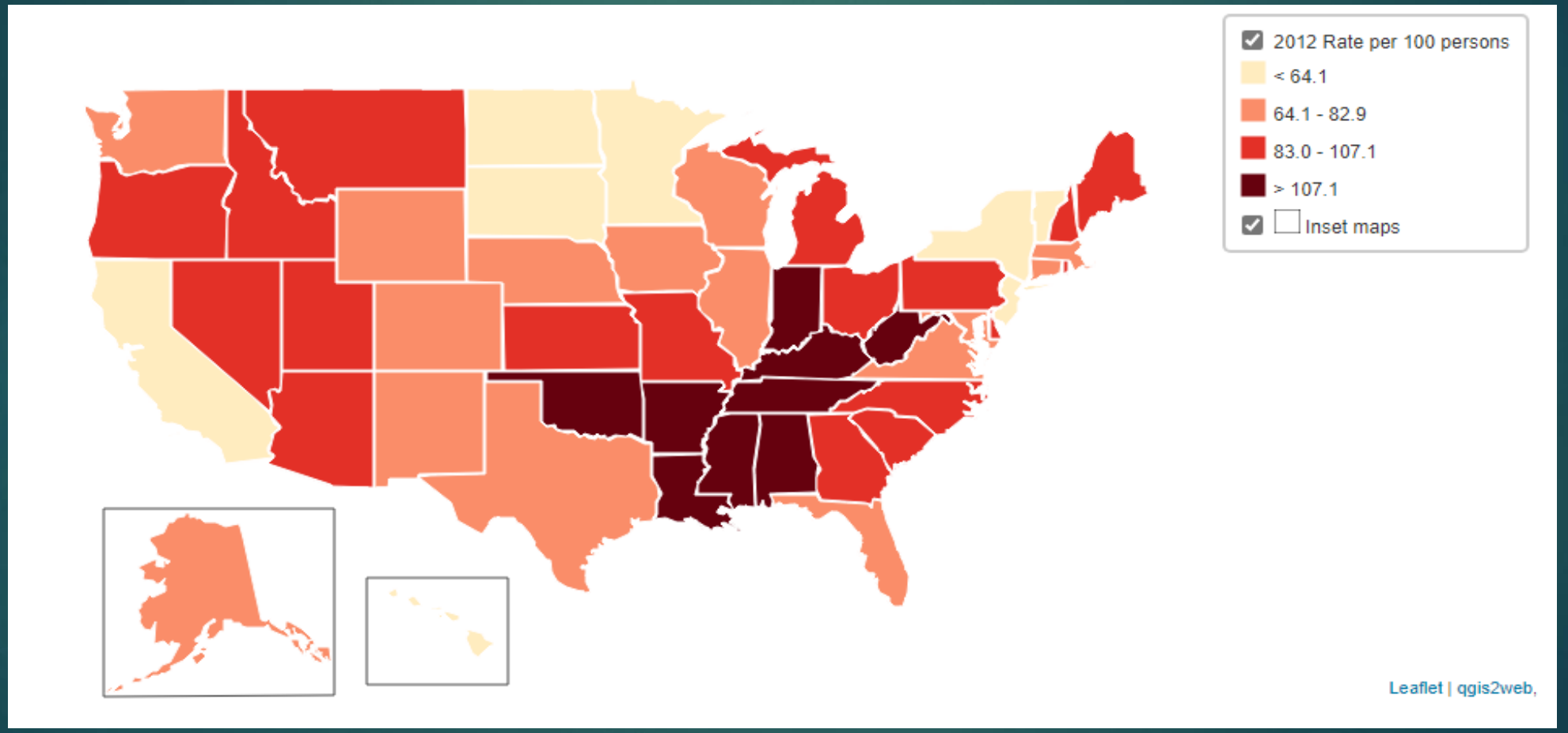
- Pale skin color, cyanotic lips/fingernails
- Constricted pupils
- Bradycardia
- Respiratory depression
- Unarousable

Withdrawal

- Anxiety
- Tachycardia
- Diaphoresis
- Restlessness
- Dilated pupils
- Nausea/Vomiting

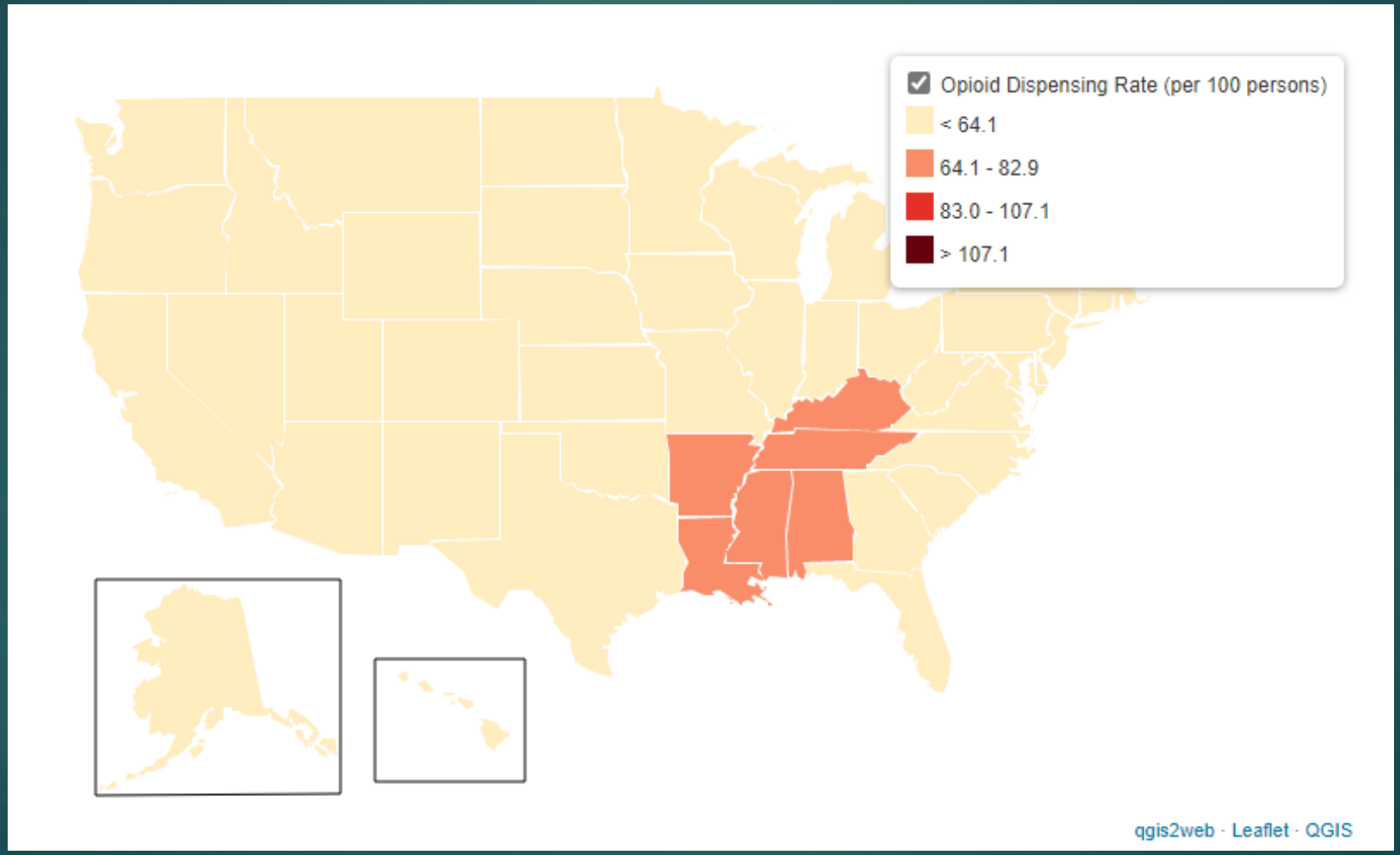
Source: Substance Abuse and Mental Health Services Administration. Opioid Overdose. Updated September 27, 2022

U.S. State Opioid Dispensing Rates, 2012



Source: https://www.cdc.gov/drugoverdose/rxrate-maps/state2012.html

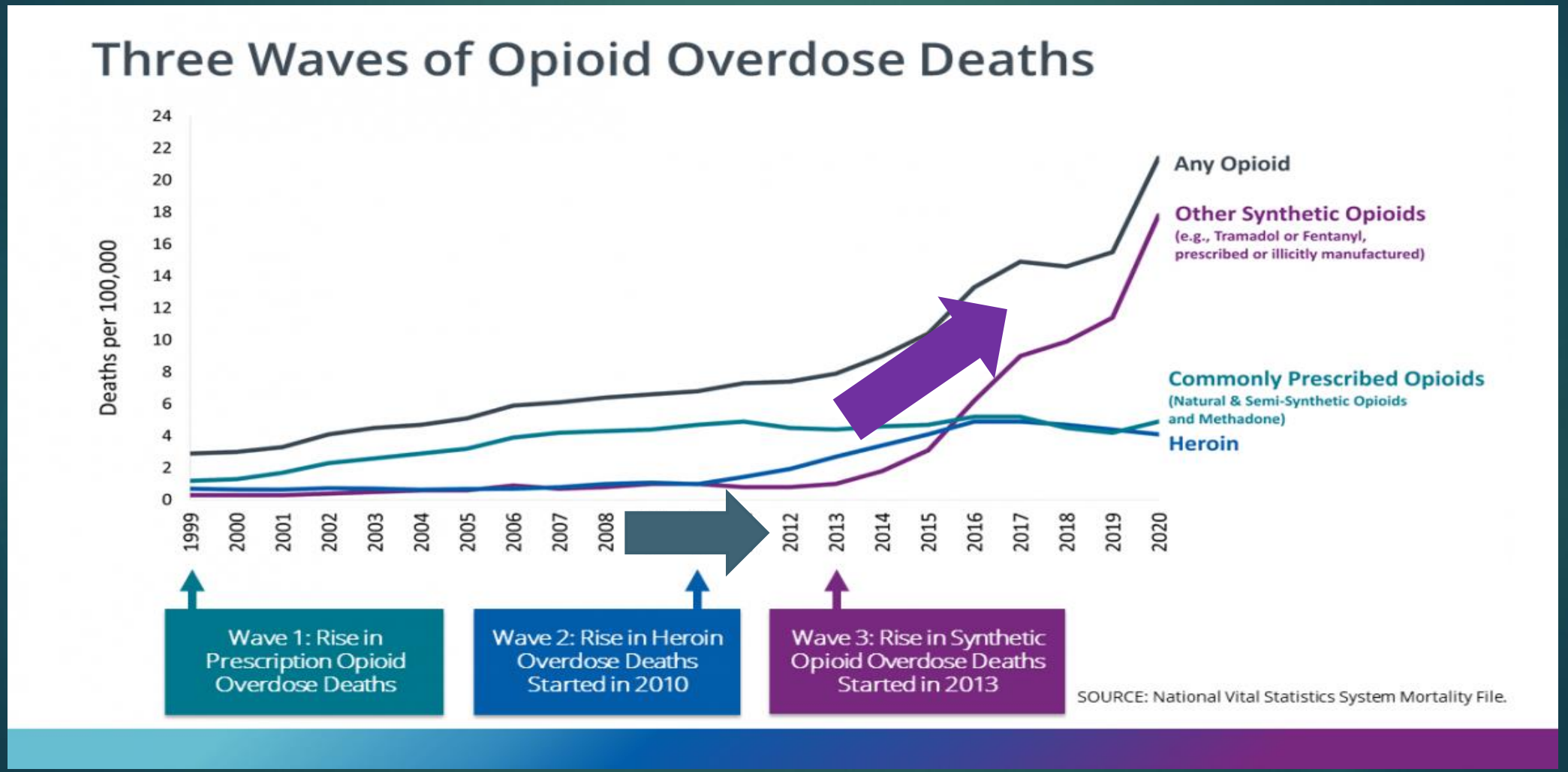
U.S. State Opioid Dispensing Rates, 2020



Source: https://www.cdc.gov/drugoverdose/rxrate-maps/state2020.html

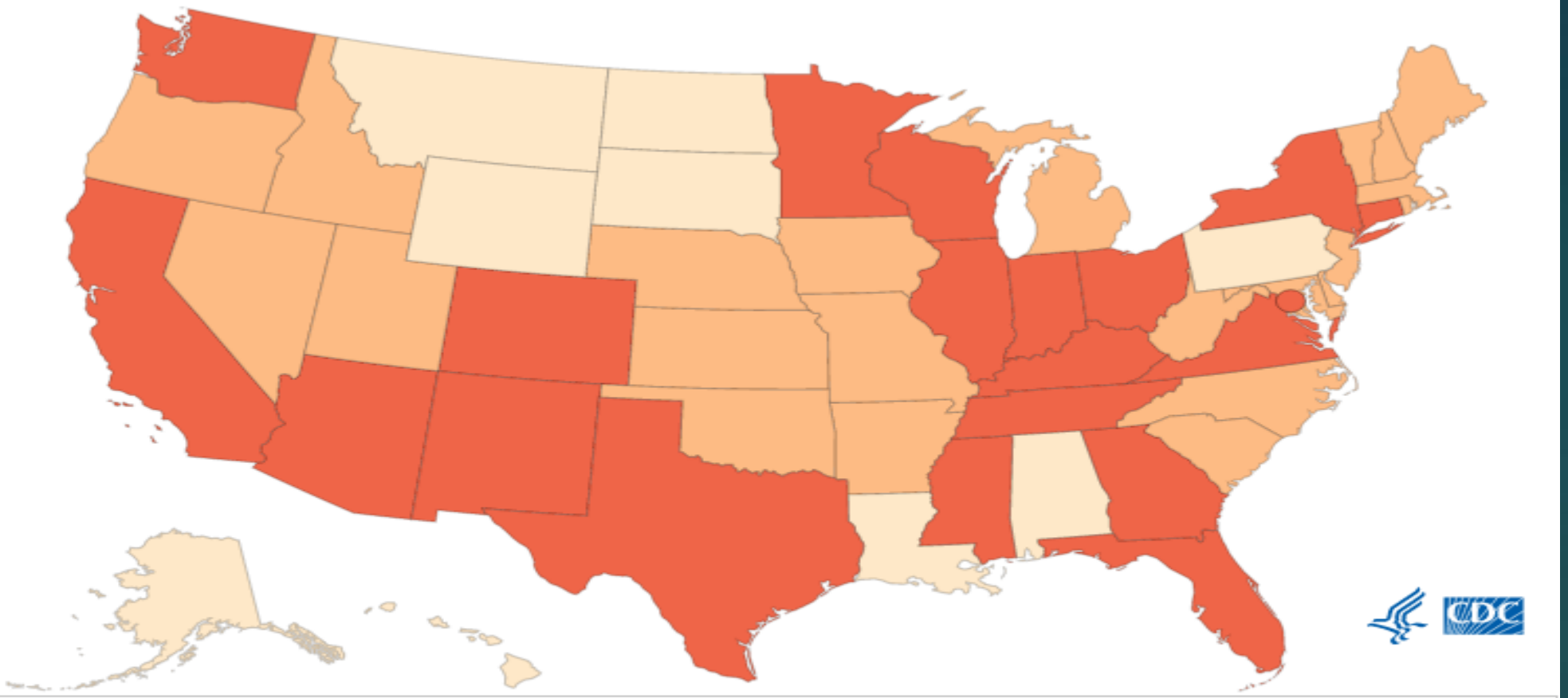
Overdose-Related Death Statistics

- 68,000 deaths in 2020
  - 8.5x the rate in 1999



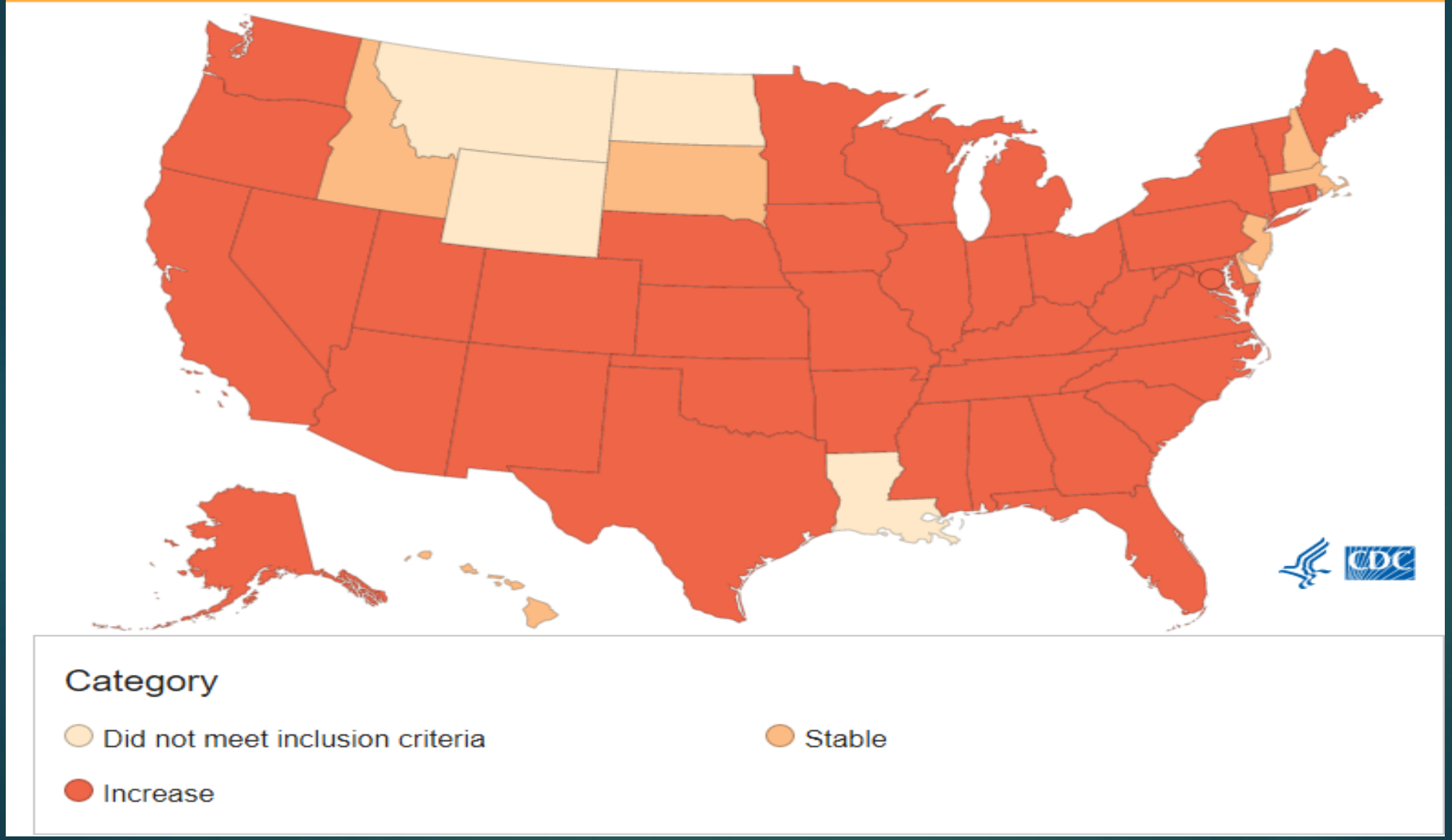
Source: https://www.cdc.gov/drugoverdose/images/3Wave_OverdoesDeathRates_LineGraph_2020-large.png

Changes in drug overdose death rates involving synthetic opioids by select states, United States, 2018 to 2019



Source: https://www.cdc.gov/drugoverdose/deaths/synthetic/index.html

Changes in drug overdose death rates involving synthetic opioids by select states, United States, 2019 to 2020



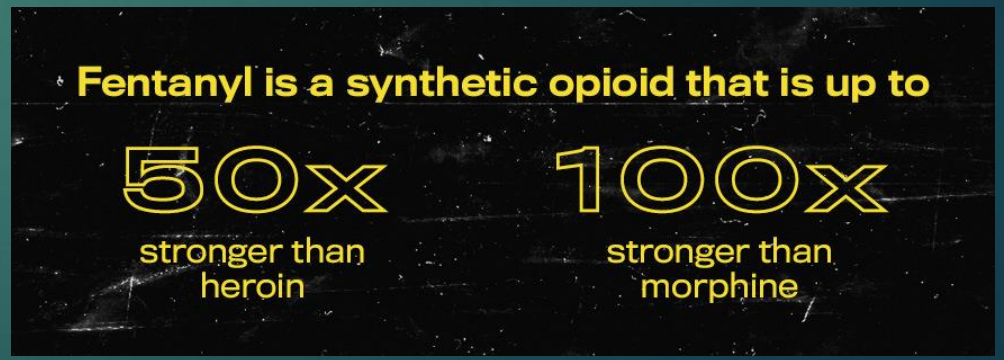
Source: https://www.cdc.gov/drugoverdose/deaths/synthetic/index.html

The Problem With Fentanyl

- Increased illegal usage
- Commonly laced with other drugs
  - Heroin, cocaine, methamphetamine
  - Made into tablets to resemble other prescription opioids
  - Liquid fentanyl can be added to nasal sprays, eye drops, candies
- Potential for prescription abuse

	Equianalgesic Doses (mg)	
Drug	Parenteral	Oral
Morphine	10	30
Buprenorphine	0.3	0.4 (sl)
Codeine	100	200
Fentanyl	0.1	NA
Hydrocodone	NA	30
Hydromorphone	1.5	7.5
Meperidine	100	300
Oxycodone	10*	20
Oxymorphone	1	10
Tramadol	100*	120

Source: https://cdn.sanity.io/images/0vv8moc6/hcplive/7e834fef61487280617d8dd225a9bea871046bc4-630x444.png?fit=crop&auto=format



Source: Centers for Disease Control. Fentanyl Facts. Reviewed February 23, 2022

Fentanyl Test Strips

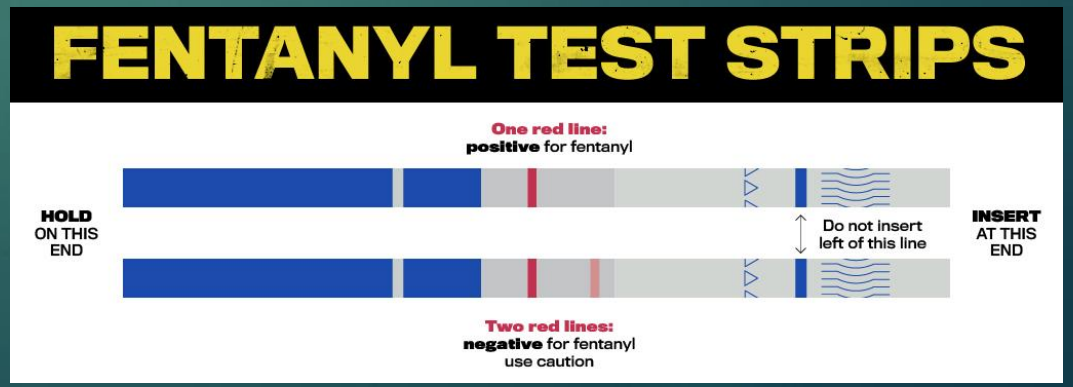
Nearly impossible to determine if drugs are laced with fentanyl

Differing state laws may affect distribution/availability

96-100% accurate in detecting fentanyl

- Possible cross-reactivity with methamphetamine and diphenhydramine

May not detect more potent fentanyl analogs



Source: Centers for Disease Control. Fentanyl Test Strips: A Harm Reduction Strategy. Reviewed September 30, 2022.

Legislative Analysis and Public Policy Association. Fentanyl Test Strips. Published May 2021

Urine Drug Screening

Most commonly will be able to detect morphine	• Metabolite of heroin, codeine • 6-MAM metabolite can be specifically assessed for to determine heroin use
Can use additional screening assays to detect semisynthetic opioids	• Hydrocodone, hydromorphone, oxycodone, oxymorphone
Synthetic opioids are NOT detected by routine screening	• Lack of morphine metabolites

Source: Moeller KE, Lee KC, Kissack JC. Urine Drug Screening: Practical Guide for Clinicians. *Mayo Clin Proc.*

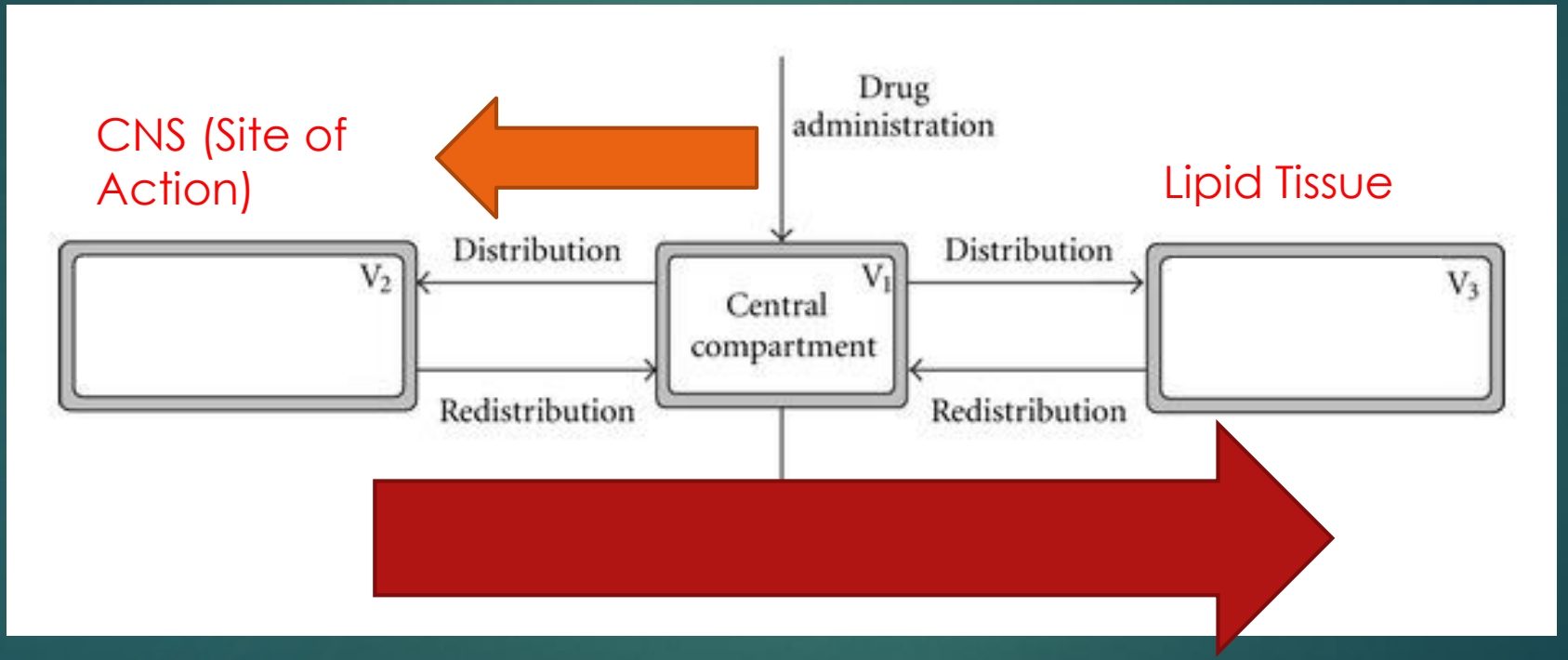
Table I: Opioid Window of Detection.

6-MAM	8 hours
Buprenorphine	1 to 4 days
Codeine	1 to 2 days
Heroin	30 minutes
Hydrocodone	1 to 2 days
Hydromorphone	1 to 4 days
Methadone	3 to 11 days
Morphine	1 to 3 days
Oxycodone	1 to 3 days
Oxymorphone	1 to 4 days

Source: https://images.ctfassets.net/59984t4qg9dz/ppm_wysiwyg_fid11319_asset/72943968e1c4906426d34e2ff3af3d6f/Table_1.jpg

Pharmacokinetics of Fentanyl

- Follows a three compartment model

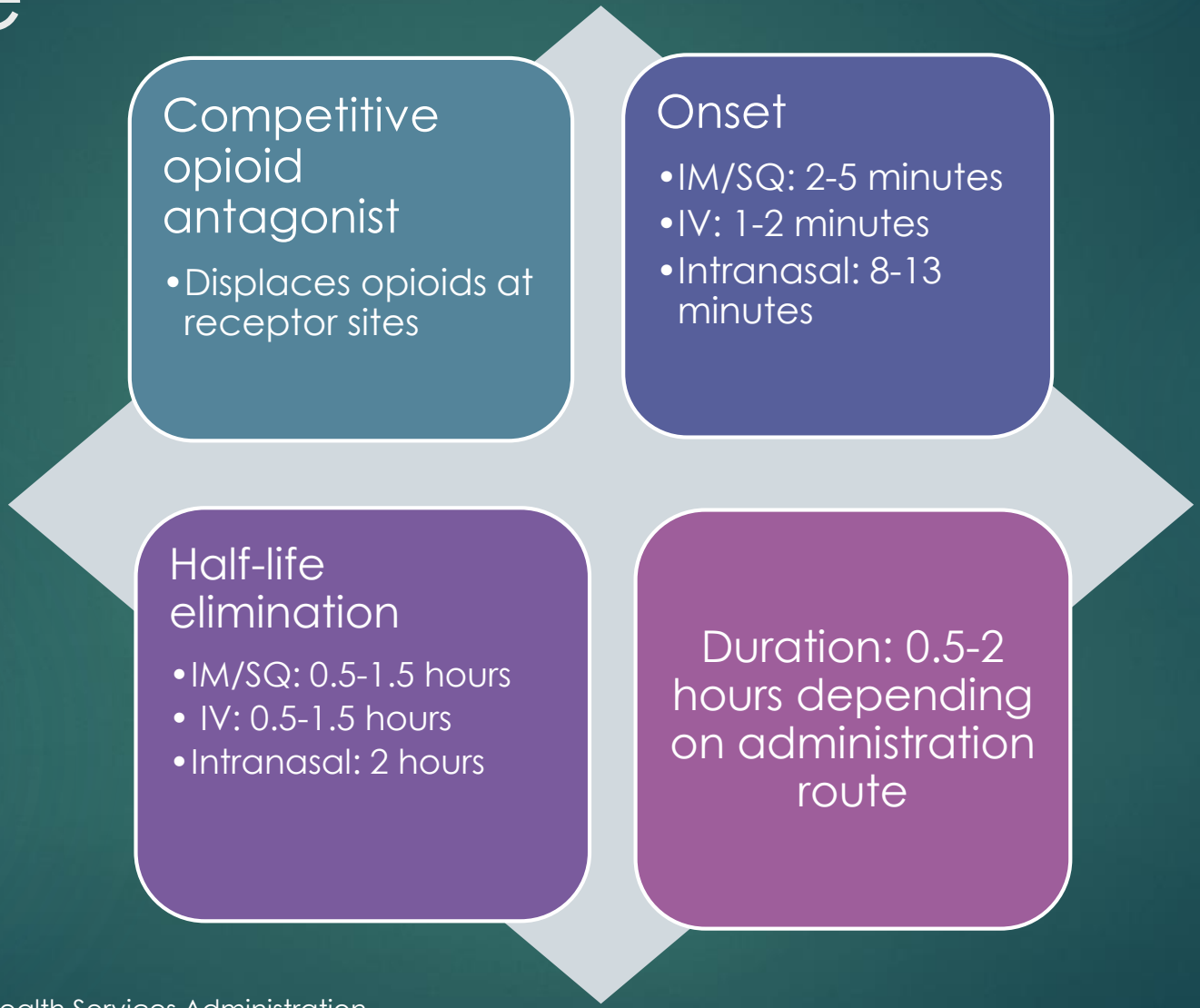


Source: https://upload.wikimedia.org/wikipedia/commons/c/c4/Schematic-representation-of-a-three-compartment-model.png.jpg

Source: Huhn AS, Hobelmann JG, Oyler GA, Strain EC, . *Drug Alcohol Depend.* 2020

Current Recommendations for Opioid Overdose Management

Naloxone



Source: Substance Abuse and Mental Health Services Administration. What is Naloxone? Updated September 27, 2022

Source: Naloxone: Drug Information. UpToDate

Naloxone Dosage Forms

- Nasal spray
- Prefilled syringe
- Nasal liquid
- Prefilled syringe kit (community use)
- Solution for injection
- Solution auto-injector

Source: Naloxone: Drug Information. UpToDate

Naloxone Administration in the ED Setting

Administer in significant CNS and/or respiratory depression

- Adult: 0.4-2 mg
- Pediatric: 0.1 mg/kg
- Doses can be repeated every 3-5 minutes, up to 10 mg

For more frequent opioid users:

- Consider slow administration with 0.1-0.4 mg IV aliquots every 1-2 minutes for more controlled opioid reversal

May consider continuous infusion for longer acting opioids (i.e. methadone) or sustained release products

- Dosed using two-thirds of initial effective naloxone bolus on an hourly basis

Source: Naloxone: Drug Information. UpToDate

Source: Stephens E. Opioid Toxicity Treatment & Management. Medscape. Updated October 21, 2021

Naloxone for Fentanyl Overdose

- Transdermal patch: 20-27 hours
- Intravenous: 2-4 hours
- Buccal tablet: Up to 12 hours

Fentanyl half-life

Will require larger, more frequent doses of naloxone

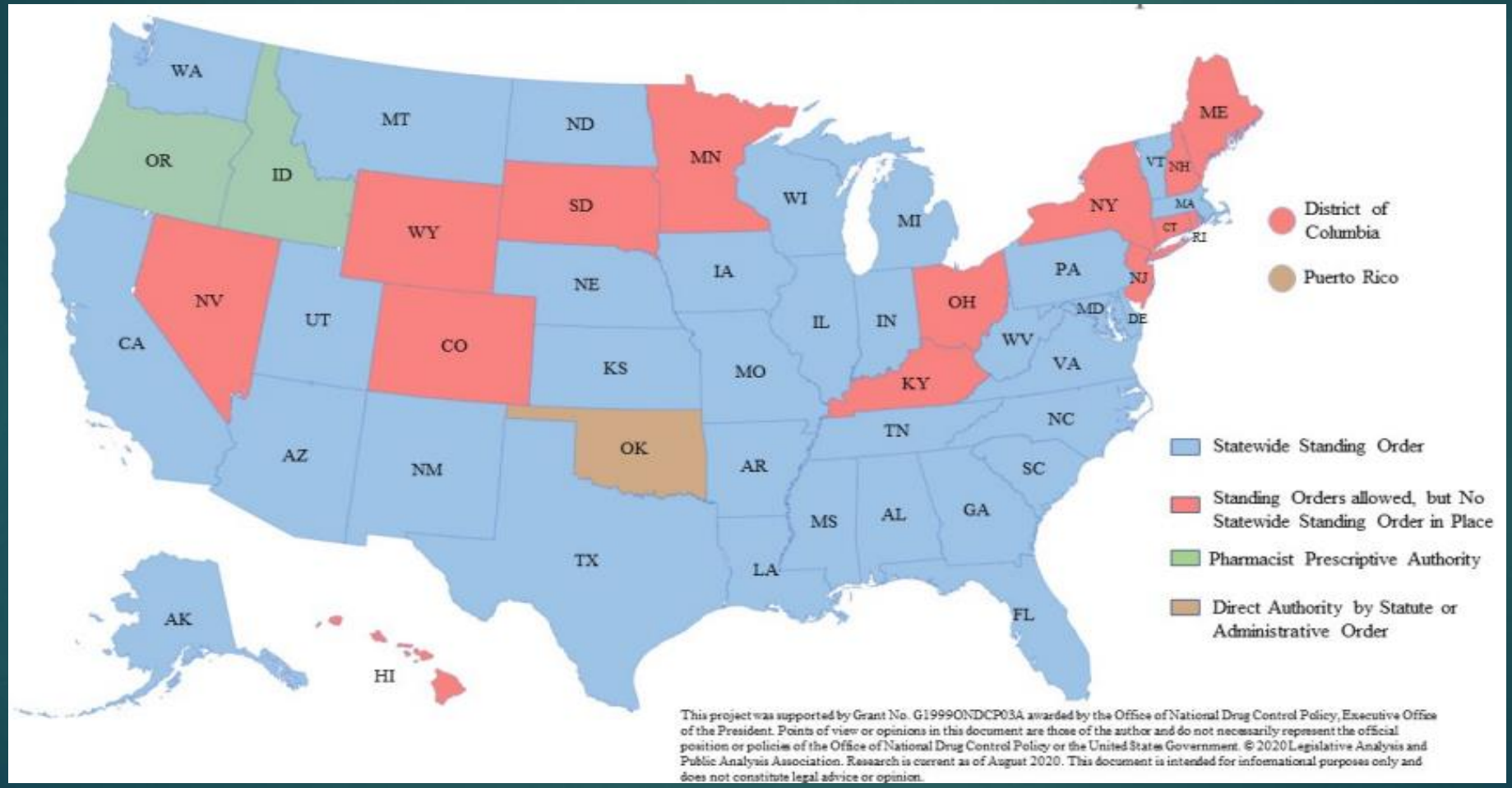
- Consider continuous infusion with long-acting opioids and sustained release products (transdermal patch)

Source: Stephens E. Opioid Toxicity Treatment & Management. Medscape. Updated October 21, 2021

Source: Fentanyl: Drug Information. UpToDate

State Naloxone Access Rules and Resources

- Find the specific laws for your state here



Source: https://legislativeanalysis.org/wp-content/uploads/2020/10/Naloxone-summary-of-state-laws-FINAL-9.25.2020.pdf

Community Opioid Overdose Prevention Initiatives

Good Samaritan law

- Grants immunity to individuals who "act in good faith"
- Adopted by 48 states as of 2020

Newer state legislation making naloxone available for use by first responders

- Police officers, firefighters, correctional officers, emergency medical technicians

Naloxone vending machines

- Becoming implemented in county jails, hospitals, community centers across the country

Access in schools

- 27 states have statutory language regarding the authorization of access to naloxone as of 2020

Source: Legislative Analysis and Public Society Policy Association. Naloxone Access: Summary of State Laws. Published September 2020.

Source: The ASAM National Practice Guideline for the Treatment of Opioid Use Disorder: 2020 Focused Update.

Naloxone-Precipitated Withdrawal (NPW)

Symptoms of precipitated withdrawal have a faster onset with greater severity

Need for managing NPW likely increasing with community initiatives

IV Naloxone

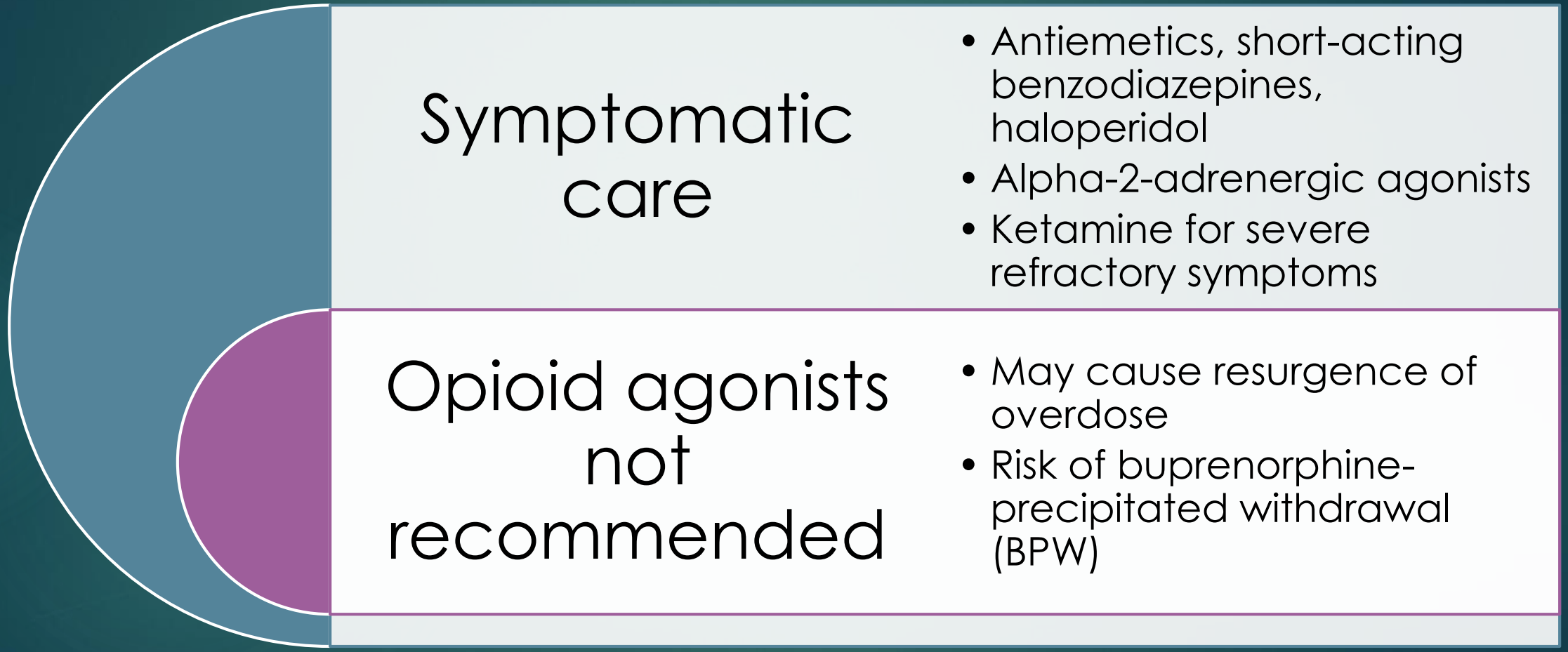
- Severe symptoms
- Lasts about 45 minutes

IM/Intranasal Naloxone

- Moderate symptoms
- Lasts about 75 minutes

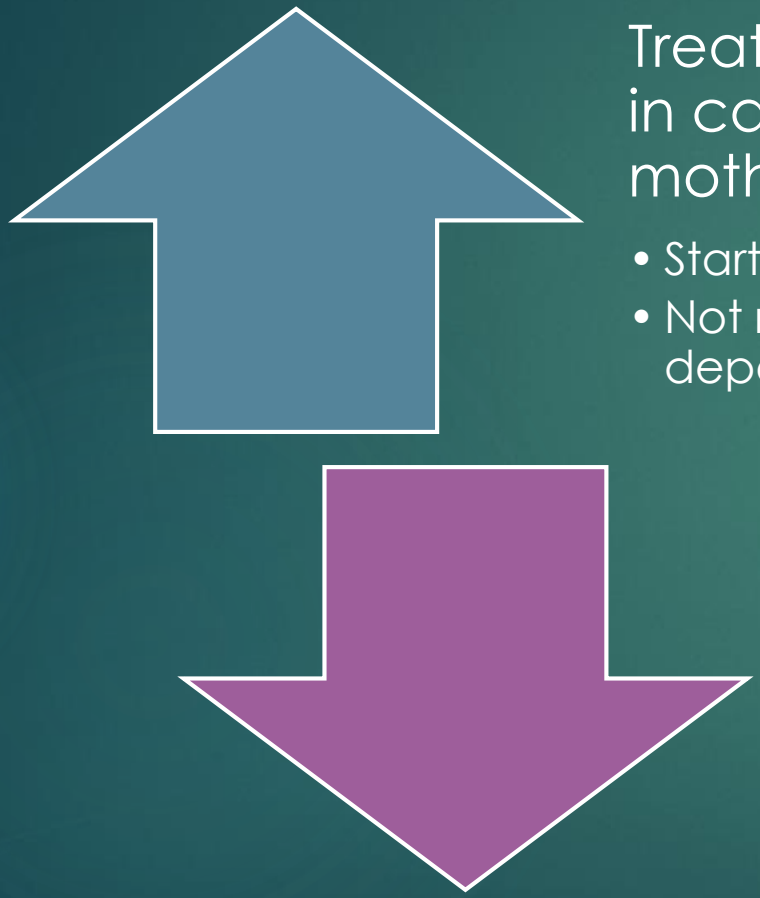
Source: Strayer RJ, Hawk K, Hayes BD. *J Emerg Med.* 2020

Naloxone-precipitated Withdrawal (NPW)



Source: Strayer RJ, Hawk K, Hayes BD. *J Emerg Med.* 2020

Naloxone Use in Pregnancy



Treatment should **not** be withheld in cases of overdose to save the mother's life

- Start on lower end of dosing range
- Not recommended for testing opioid dependence

Induced withdrawal may contribute to preterm labor and/or fetal distress

Source: The ASAM National Practice Guideline for the Treatment of Opioid Use Disorder: 2020 Focused Update.

Source: American College of Obstetricians and Gynecologists. Opioid Use and Opioid Use Disorder in Pregnancy. Committee Opinion. 2017

Knowledge check 1

- True or False: Naloxone use in pregnant patients poses a high risk for preterm labor or fetal distress.

Knowledge check 1: Correct Response

- True or False: Naloxone use in pregnant patients poses a high risk for preterm labor or fetal distress.

Medication-Assisted Treatment (MAT)

Methadone

Long-acting opioid agonist

- Slow 3-5 day onset with frequent dosing

Initial dose: 2.5-10 mg

- Typical maintenance range: 60-120 mg daily

Only available through opioid treatment programs (OTP)

- Cannot be prescribed for treatment of opioid use disorder (OUD)

Variable, long half-life: 8-59 hours

- Prolonged in alkaline pH

Can transition to buprenorphine with minimal discomfort

- May experience discomfort with methadone doses above 40 mg

Source: The ASAM National Practice Guideline for the Treatment of Opioid Use Disorder: 2020 Focused Update.
Source: Methadone: Drug Information. UpToDate.

Naltrexone

Long-acting competitive opioid antagonist

- Half-life: 5-10 days

Dosed 380 mg via intramuscular monthly injection

- Option for oral formulation but use not recommended

Increased sensitivity to opioids and diminished tolerance

- Increased risk of overdose if opioid use is resumed

Must not have any remaining physical dependence to opioids

- Short-acting opioids: Wait 6 days
- Long-acting opioids: Wait 7-10 days
- Naloxone challenge

No prescribing restrictions

- Other barriers to use in the ED

Source: The ASAM National Practice Guideline for the Treatment of Opioid Use Disorder: 2020 Focused Update.

Naloxone Challenge

Completed if uncertain on status of opioid dependence

If withdrawal symptoms are present after onset, forgo the challenge and treat symptomatically

May give IV, IM, SQ as a single dose

- IV: 0.2 mg, followed by 0.6 mg dose
- IM: 0.4-0.8 mg
- SQ: 0.8 mg

Source: Naloxone: Drug Information. UpToDate

Source: The ASAM National Practice Guideline for the Treatment of Opioid Use Disorder: 2020 Focused Update.

Buprenorphine

Partial opioid agonist with high affinity to pain receptors in the CNS

- Partial agonist properties lead to an eventual plateau in analgesic effect
- Will displace any present full opioid agonists (risk of BPW)

May be prescribed in office setting through waivers per the Drug Addiction Treatment Act of 2000 (DATA 2000)

- Relieved need for OTPs

Combination products with buprenorphine/naloxone made to discourage IV use in the community setting

Source: The ASAM National Practice Guideline for the Treatment of Opioid Use Disorder: 2020 Focused Update.

Buprenorphine Versus Methadone for Opioid Use Disorder in Pregnancy

- Examined 45,992 total exposed pregnancies
- Examined outcomes after exposure to either buprenorphine or methadone
-

	Early Pregnancy (up to 19 weeks' gestation)	Late Pregnancy (gestation week 20 to delivery)	30 days before delivery	Total
Methadone	4,387	5,056	4,597	14,040
Buprenorphine	10,704	11,272	9,976	31,952
Total	15,091	16,328	14,573	45,992

Source: Suarez EA, Huybrachts KF, Straub L, et al. *N Engl J Med.* 2022

Buprenorphine Versus Methadone for Opioid Use Disorder in Pregnancy

- Results of exposure in late versus early pregnancy were consistent

Neonatal outcomes (%)				
	Neonatal abstinence syndrome*	Preterm birth	Small size for gestational age	Low birth weight
Methadone	69.2	24.9	15.3	14.9
Buprenorphine	52	14.4	12.1	8.3
Adjusted Relative Risk (95% CI)	0.73 (0.71-0.75)	0.58 (0.53-0.62)	0.72 (0.66-0.80)	0.56 (0.5-0.63)

*Occurrence of infants exposed only in the 30 days prior to delivery

- Buprenorphine associated with lower risk of adverse neonatal outcomes

Source: Suarez EA, Huybrachts KF, Straub L, et al. *N Engl J Med*. 2022

Buprenorphine Versus Methadone for Opioid Use Disorder in Pregnancy

- Results of exposure in late versus early pregnancy were consistent

Maternal Outcomes (%)		
	Delivery by cesarean section	Severe maternal complications
Methadone	33.1	3.5
Buprenorphine	33.6	3.3
Adjusted Relative Risk (95% CI)	1.02 (0.97-1.08)	0.91 (0.74-1.13)

- Similar maternal outcomes between buprenorphine and methadone

Source: Suarez EA, Huybrachts KF, Straub L, et al. *N Engl J Med.* 2022

Buprenorphine Formulations

Buprenorphine

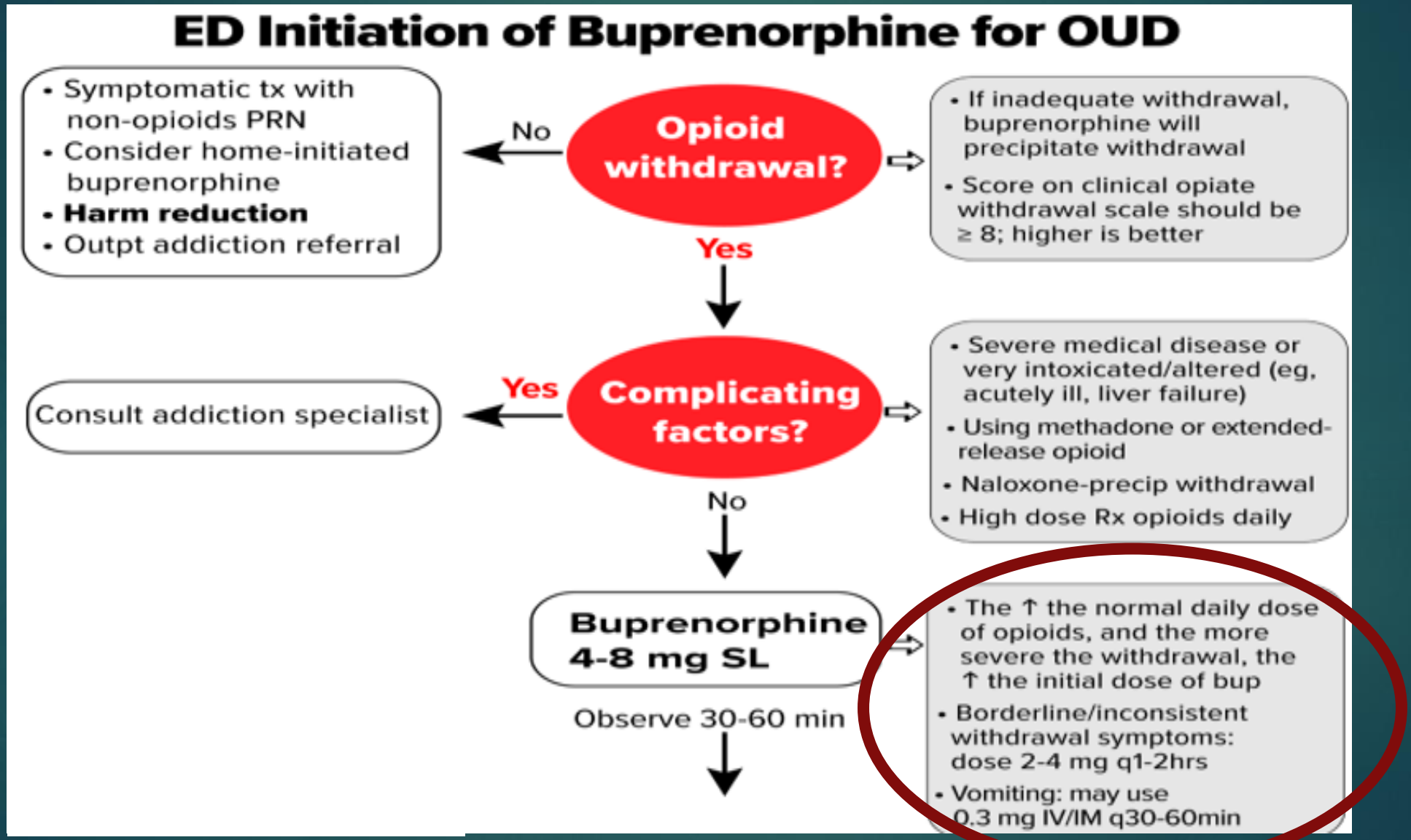
- Sublingual tablet (Subutex®)
- Buccal film (Belbuca®)
- Extended-release injection (Sublocade®, Brixadi®)
- Subcutaneous implant (Probuphine®)

Buprenorphine/Naloxone

- Sublingual tablet (Suboxone®)
- Sublingual film (Zubsolv®)

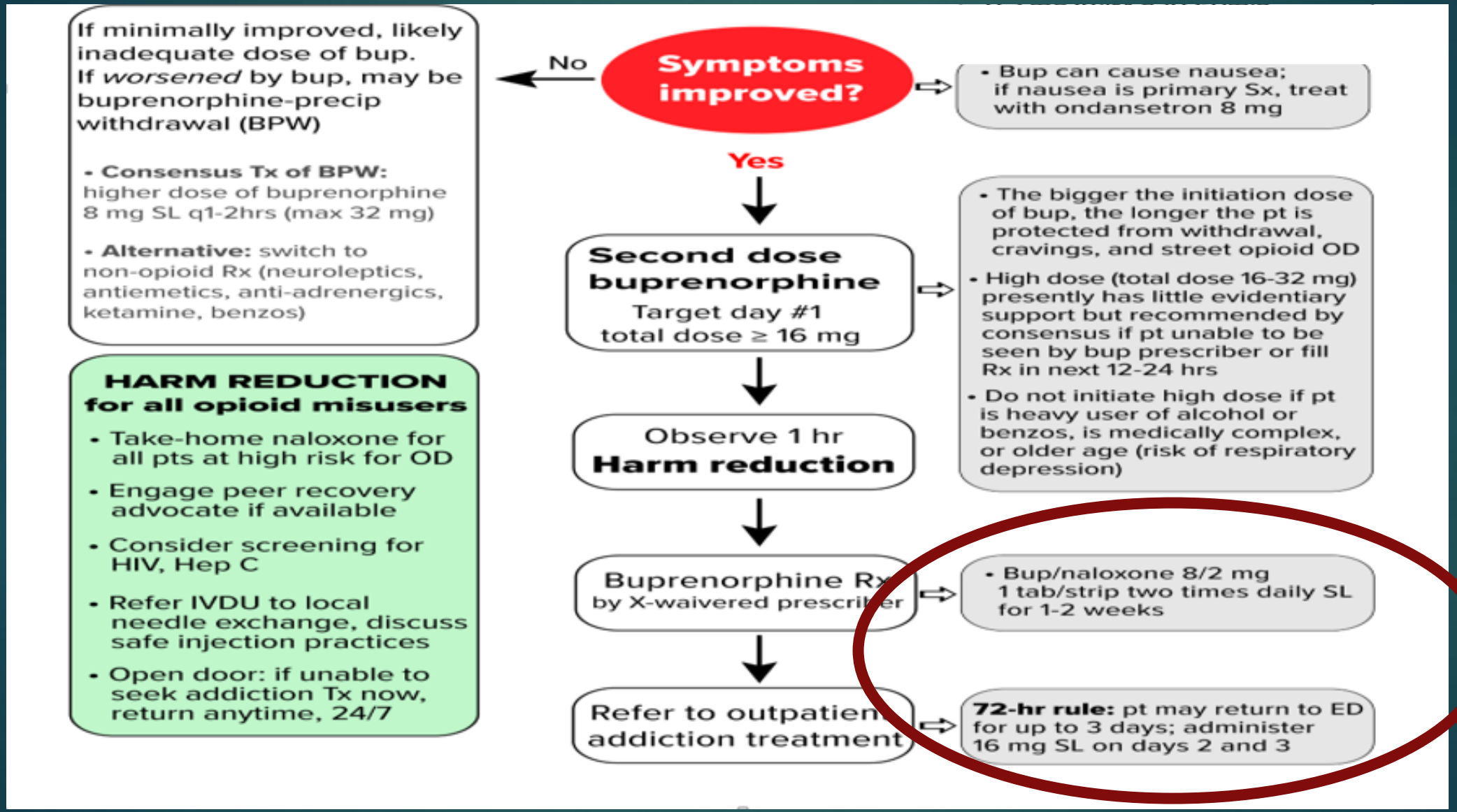
Source: The ASAM National Practice Guideline for the Treatment of Opioid Use Disorder: 2020 Focused Update.

Buprenorphine Initiation in the ED



Source: Image from:https://www.emra.org/books/pain-management/buprenorphine/

Buprenorphine Initiation in the ED



Source: Image from:https://www.emra.org/books/pain-management/buprenorphine/

Importance of Buprenorphine Initiation in the ED

- Randomized controlled trial from 2009-2013 (n=329)
- Increased engagement in formal outpatient treatment at 30 days

Results of a Randomized Control Trial on ED-initiated Buprenorphine for OUD Treatment

Dose	ED-initiated Buprenorphine	Brief Intervention with Facilitated Referral	Referral Only
Engaged in treatment at 30 days	78%	45%	37%
Self-reported past 7-day opioid use at 30 days	0.9 days	2.4 days	2.3 days

Source: D'Onofrio, G., O'Connor, P.G., Pantalon, M.V., Chawarski, M.C., Busch, S.H., Owens, P.H., Bernstein, S.L., and Fiellin, D.A. (2015) Emergency department-initiated buprenorphine/naloxone treatment for opioid dependence: A randomized clinical trial. Journal of the American Medical Association, 313, 1636-1644.

Source: Substance Abuse and Mental Health Services Administration: Use of Medication-Assisted Treatment in Emergency Departments. 2021

Image from: https://store.samhsa.gov/sites/default/files/SAMHSA_Digital_Download/pep21-pl-guide-5.pdf

Buprenorphine-Precipitated Withdrawal (BPW) in Fentanyl Use

Displacement of long-acting opioid agonists (i.e. fentanyl)

May result in buprenorphine-precipitated withdrawal

Use the Clinical Opiate Withdrawal Scale (COWS) to determine withdrawal risk

Wait until score is >7

May delay first buprenorphine dose until mild-moderate withdrawal symptoms

Avoids severe symptoms from potential BPW

Source: The ASAM National Practice Guideline for the Treatment of Opioid Use Disorder: 2020 Focused Update.
Cisewski DH, Strayer RJ. Buprenorphine Initiation in the ED and MAT. Emergency Medicine Residents Association. Published July 2020
Source: Strayer RJ, Hawk K, Hayes BD. *J Emerg Med.* 2020

Clinical Opiate Withdrawal Scale

- 11-item scale used to rate and monitor signs/symptoms of opioid withdrawal

Resting Pulse Rate: _____beats/minute *Measured after patient is sitting or lying for one minute* 0 pulse rate 80 or below 1 pulse rate 81-100 2 pulse rate 101-120 4 pulse rate greater than 120	**GI Upset**: *over last 1/2 hour* 0 no GI symptoms 1 stomach cramps 2 nausea or loose stool 3 vomiting or diarrhea 5 multiple episodes of diarrhea or vomiting
Sweating: *over past 1/2 hour not accounted for by room temperature or patient activity.* 0 no report of chills or flushing 1 subjective report of chills or flushing 2 flushed or observable moistness on face 3 beads of sweat on brow or face 4 sweat streaming off face	**Tremor** *observation of outstretched hands* 0 no tremor 1 tremor can be felt, but not observed 2 slight tremor observable 4 gross tremor or muscle twitching
Restlessness *Observation during assessment* 0 able to sit still 1 reports difficulty sitting still, but is able to do so 3 frequent shifting or extraneous movements of legs/arms 5 unable to sit still for more than a few seconds	**Yawning** *Observation during assessment* 0 no yawning 1 yawning once or twice during assessment 2 yawning three or more times during assessment 4 yawning several times/minute
Pupil size 0 pupils pinned or normal size for room light 1 pupils possibly larger than normal for room light 2 pupils moderately dilated 5 pupils so dilated that only the rim of the iris is visible	**Anxiety or Irritability** 0 none 1 patient reports increasing irritability or anxiousness 2 patient obviously irritable or anxious 4 patient so irritable or anxious that participation in the assessment is difficult
Bone or Joint aches *If patient was having pain previously, only the additional component attributed to opiates withdrawal is scored* 0 not present 1 mild diffuse discomfort 2 patient reports severe diffuse aching of joints/muscles 4 patient is rubbing joints or muscles and is unable to sit still because of discomfort	**Gooseflesh skin** 0 skin is smooth 3 piloerrection of skin can be felt or hairs standing up on arms 5 prominent piloerrection
Runny nose or tearing *Not accounted for by cold symptoms or allergies* 0 not present 1 nasal stuffiness or unusually moist eyes 2 nose running or tearing 4 nose constantly running or tears streaming down cheeks	Total Score _____ The total score is the sum of all 11 items Initials of person completing assessment: _____

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

Source: Wesson DR, Ling W. The Clinical Opiate Withdrawal Scale (COWS). *J Physchoactive Drugs.* 2003

Image from: https://nida.nih.gov/sites/default/files/ClinicalOpiateWithdrawalScale.pdf

Alpha-2-Adrenergic Agonists for Withdrawal Management

- Long history of off-label use in treating opioid withdrawal
- Often combined with non-narcotic medications to target specific withdrawal symptoms
- Concomitantly used with other MAT during tapers
- Use is often limited by hypotensive effect

Source: The ASAM National Practice Guideline for the Treatment of Opioid Use Disorder: 2020 Focused Update.

Knowledge Check 2

- True or False: While in the emergency department setting, administration of buprenorphine is not sufficient for opioid use disorder in the ED and buprenorphine/naloxone combination products should be used instead.

Knowledge Check 2: Correct Response

- True or False: While in the emergency department setting, administration of buprenorphine is not sufficient for MAT in the ED and buprenorphine/naloxone combination products should be used instead.

Legal Requirements for Prescribing MAT

Determining Permissibility of Treatment With Buprenorphine in the ER

A DATA 2000 waiver is required to prescribe buprenorphine

- Not required for administering in the ED

Source: Cisewski DH, Strayer RJ. Buprenorphine Initiation in the ED and MAT. Emergency Medicine Residents Association. Published July 2020

"72-Hour Rule"

- **21 CFR 1306.07(b)**: "Nothing in this section shall prohibit a physician who is not specifically registered to conduct a narcotic treatment program from administering (but not prescribing) narcotic drugs to a person for the purpose of relieving acute withdrawal symptoms when necessary while arrangements are being made for referral for treatment. Not more than one day's medication may be administered to the person or for the person's use at one time. Such emergency treatment may be carried out for not more than three days and may not be renewed or extended."

Source: US Department of Justice Drug Enforcement Administration. Request for Exception to Limitations on Dispensing for OUD. Addressed March 23, 2022

Use of Institution Stock for MAT Initiation

- **21 CFR 1306.07(c)**: It is complicated
- Takeaway: A practitioner needs their own individual stock to dispense from if OUD is the primary diagnosis for dispensing MAT in an institution
  - Still need a DATA waiver to prescribe
  - The hospital/clinic may request an exemption to allow the practitioner to operate under its DEA number to write orders for dispensing/administering

Source: US Department of Justice Drug Enforcement Administration. Request for Exception to Limitations on Dispensing for OUD. Addressed March 23, 2022

Mainstreaming Addiction Treatment Act

- ASHP-supported opioid bill passed by the Senate on December 22nd, 2022
- Proposal to remove the DATA waiver requirement for prescribing buprenorphine products for OUD

Source: https://hfhncc.org/wp-content/uploads/2020/08/BREAKING-NEWS-GENERIC-1.jpg

Knowledge Check 3

- True or False: A DATA waiver is required to administer any buprenorphine formulation in the ER.

Knowledge Check 3: Correct Response

- True or False: A DATA waiver is required to administer any buprenorphine formulation in the ER.

Summary

- Even with a decrease in opioid prescribing, death rates from opioid overdose continue to increase mainly due to the continuing rise of illegal synthetic opioids
- Correct use of naloxone is important for proper overdose management and avoidance of precipitated withdrawal
- The initiation of MAT, particularly buprenorphine, within the ED is important but complex and requires follow up and coordination

Resources

- Instructions to Request for Exception to Limitations on Dispensing for Opioid Use Disorder (OUD) (usdoj.gov)
- Fentanyl Facts (cdc.gov)
- State Naloxone Access Rules and Resources - SAFE Project
- Use of Medication-Assisted Treatment in Emergency Departments (samhsa.gov)
- Instructions to Request for Exception to Limitations on Dispensing for Opioid Use Disorder (OUD) (usdoj.gov)

References

1. Substance Abuse and Mental Health Services Administration. Opioid Overdose. Updated September 27, 2022. Accessed December 18, 2022. https://www.samhsa.gov/medication-assisted-treatment/medications-counseling-related-conditions/opioid-overdose
2. Centers for Disease Control and Prevention. Understanding the Epidemic. Reviewed June 1, 2022. Accessed December 12, 2022. https://www.cdc.gov/opioids/basics/epidemic.html
3. Centers for Disease Control and Prevention. Synthetic Opioid Overdose. Reviewed June 6, 2022. Accessed December 12, 2022. https://www.cdc.gov/drugoverdose/deaths/synthetic/index.html
4. Centers for Disease Control and Prevention. Fentanyl Facts. Reviewed February 23, 2022. Accessed December 12, 2022. https://www.cdc.gov/stopoverdose/fentanyl/index.html
5. Legislative Analysis and Public Policy Association. Fentanyl Test Strips. Published May 2021. Accessed January 2, 2023. https://www.nmhealth.org/publication/view/general/6756/#:~:text=The%20majority%20of%20FTS%20on,at%20least%2010%20fentanyl%20analogs.
6. Centers for Disease Control and Prevention. Fentanyl Test Strips: A Harm Reduction Strategy. Reviewed September 30, 2022. Accessed December 12, 2022. https://www.cdc.gov/stopoverdose/fentanyl/fentanyl-test-strips.html
7. Moeller KE, Lee KC, Kissack JC. Urine Drug Screening: Practical Guide for Clinicians. *Mayo Clin Proc*. 2008;83(1): 66-76. DOI: 10.4065/83.1.66
8. Fentanyl Citrate Injection. Package insert. Akorn; 2012.
9. Huhn AS, Hobelmann JG, Oyler GA, Strain EC. Protracted Renal Clearance of Fentanyl in Persons with Opioid Use Disorder. *Drug Alcohol Depend*. 2020; 214. DOI: 10.1016/j.drugalcdep. 2020. 108147
10. Substance Abuse and Mental Health Services Administration. What is Naloxone? Updated September 27, 2022. Accessed December 12, 2022. https://www.samhsa.gov/medication-assisted-treatment/medications-counseling-related-conditions/naloxone#:~:text=Naloxone%20is%20a%20medication%20approved,heroin%2C%20morphine%2C%20and%20oxycodone.
11. Naloxone: Drug Information. UpToDate. Accessed December 12, 2022.
12. Stephens E. Opioid Toxicity Treatment & Management. Medscape. Updated October 21, 2021. Accessed December 12, 2022. https://emedicine.medscape.com/article/815784-treatment#d11
13. Fentanyl: Drug Information. UpToDate. Accessed December 12, 2022.

References Continued

14. Stop the Addiction Fatality Epidemic Project. State Naloxone Access Rules and Resources. Accessed December 12, 2022.
15. Legislative Analysis and Public Society Policy Association. Naloxone Access: Summary of State Laws. Published September 2020. Accessed December 12, 2022.
16. Cunningham C, Edlund MJ, Fishman M, et al. The ASAM National Practice Guideline for the Treatment of Opioid Use Disorder: 2020 Focused Update. *American Society of Addiction Medicine*. 2020. DOI: 10.1097/ADM.0000000000000633
17. Strayer RJ, Hawk K, Hayes BD. Management of Opioid Use Disorder in the Emergency Department: A White Paper Prepared for the American Academy of Emergency Medicine. *J Emerg Med.* 2020; 58(3): 522-546. DOI: https:10.1016/j.jemermed.2019.12.034
18. American College of Obstetricians and Gynecologists. Opioid Use and Opioid Use Disorder in Pregnancy. Committee Opinion. Published August 2017. Accessed December 13, 2022. https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2017/08/opioid-use-and-opioid-use-disorder-in-pregnancy
19. Blandthorn J, Bowman E, Leung L, Bonomo Y, Dietze P. Managing Opioid Overdose in Pregnancy with Take-Home Naloxone. *J Obstet Gynaecol.* 2018: 58(4): 460-462. DOI:10.1111/ajo.12761
20. Suarez EA, Huybrachts KF, Straub L, et al. Buprenorphine versus Methadone for Opioid Use Disorder in Pregnancy. *N Engl J Med.* 2022; 387(22): 2033-2044. DOI: 10.1056/NEJMMoa2203318
21. Methadone: Drug Information. UpToDate. Accessed December 13, 2022.
22. Cisewski DH, Strayer RJ. Buprenorphine Initiation in the ED and MAT. Emergency Medicine Residents Association. Published July 2020. Accessed December 13, 2022. https://www.emra.org/books/pain-management/buprenorphine/
23. Substance Abuse and Mental Health Services Administration: Use of Medication-Assisted Treatment in Emergency Departments. HHS Publication No. PEP21-PL-Guide-5 Rockville, MD: National Mental Health and Substance Use Policy Laboratory. Substance Abuse and Mental Health Services Administration, 2021.
24. Wesson DR, Ling W. The Clinical Opiate Withdrawal Scale (COWS). *J Psychoactive Drugs.* 2003; 35(2): 253-9.
25. US Department of Justice Drug Enforcement Administration. Request for Exception to Limitations on Dispensing for OUD. Addressed March 23, 2022. https://www.deadiversion.usdoj.gov/drugreg/Instructions-to-request-exception-to-21CFR1306.07(b)-3-day-rule-(EO-DEA248)-Clean.pdf

Thank you!

CAMERON SOFIA, PHARMD, PGY1 PHARMACY RESIDENT

MEMORIAL HOSPITAL OF SOUTH BEND

CSOFIA@BEACONHEALTHSYSTEM.ORG