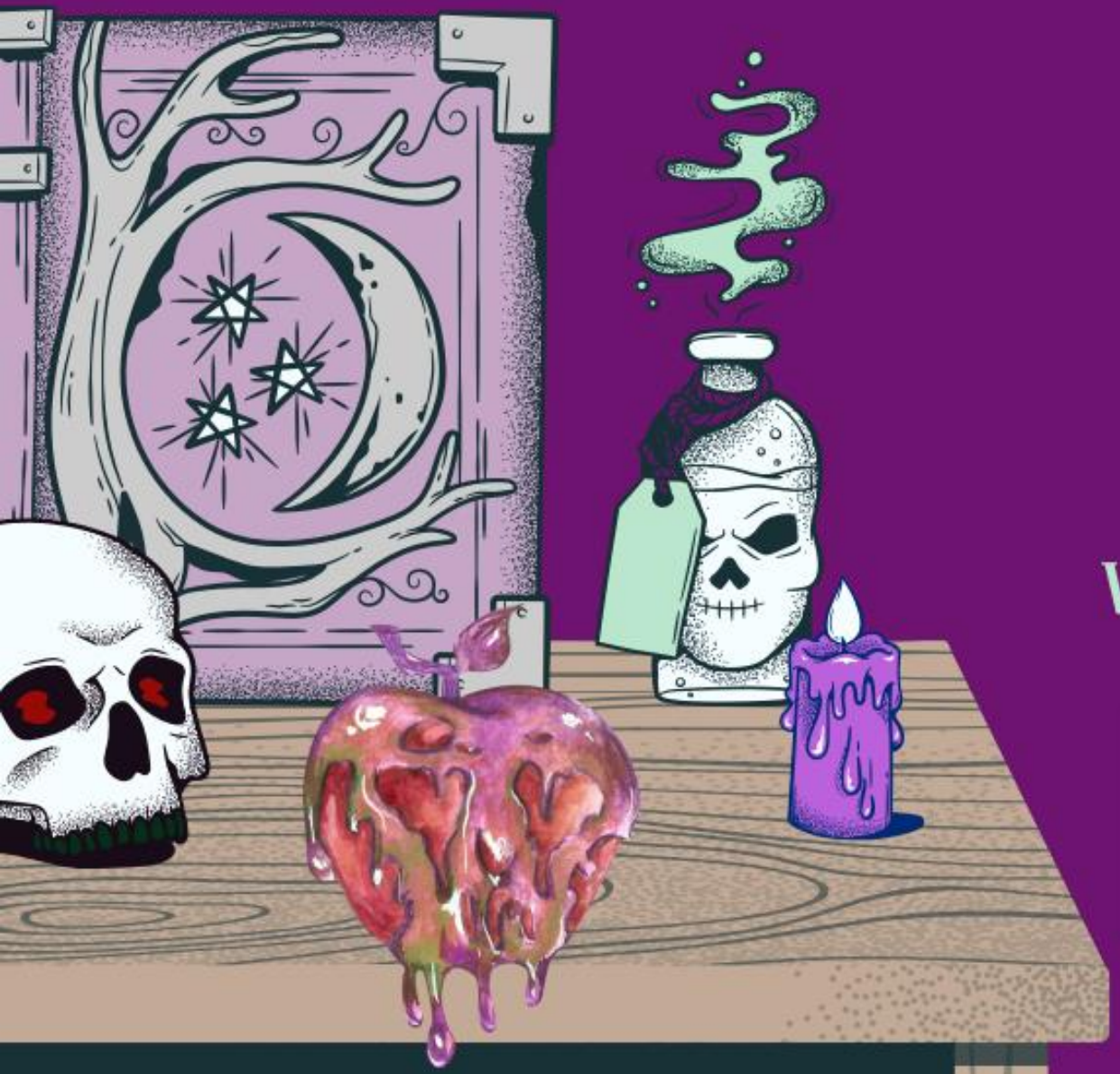


Potent Poisoning:

WHEN SLEEPING BEAUTY GETS A BAD APPLE

Amy Durell PharmD, BCPS

Disclosure Slide

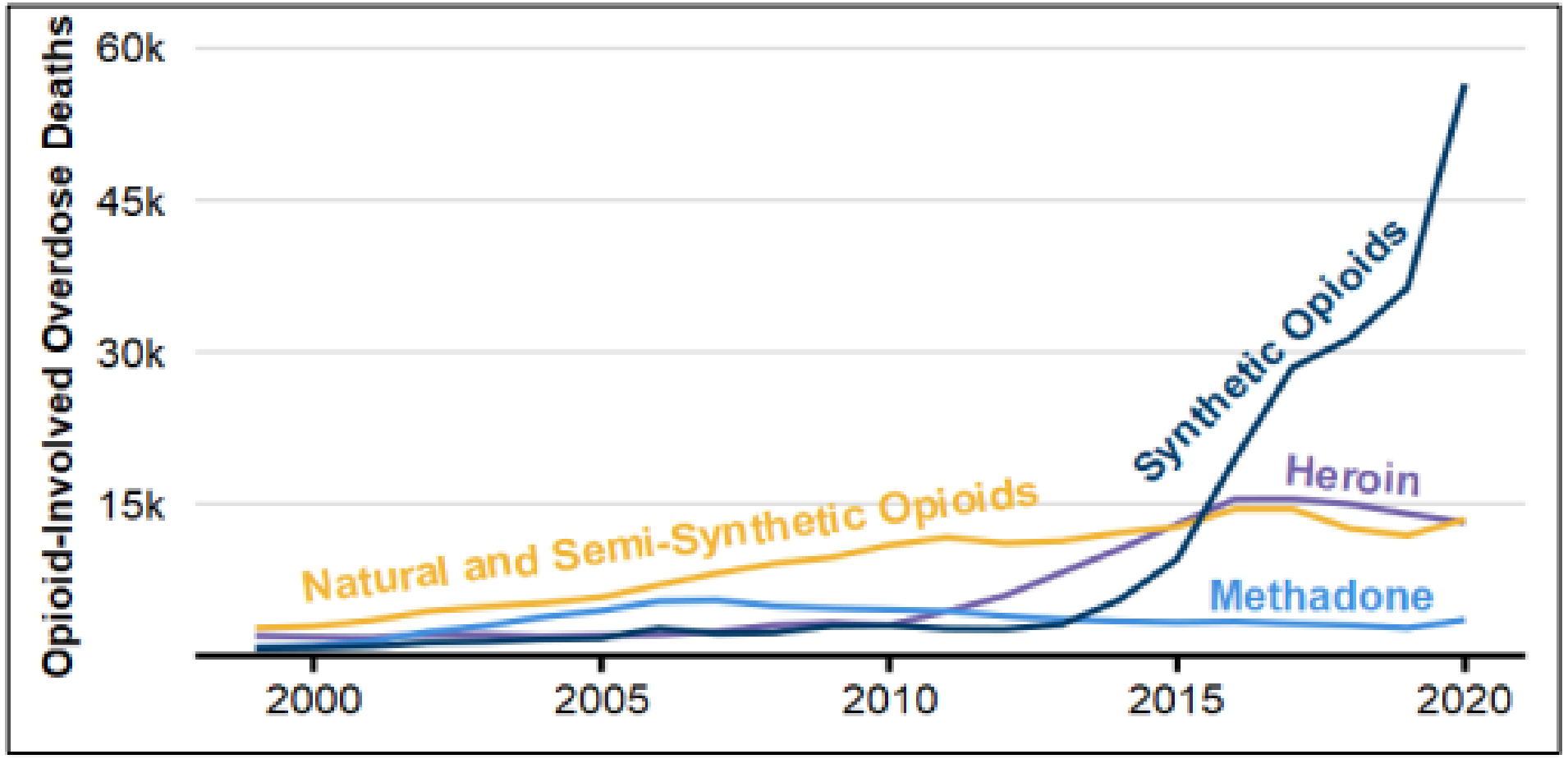
Do not have a vested interest in or affiliation with any corporate organization offering financial support.

Objectives

- Discuss the use of adulterants in illicit drugs, including common substances encountered in polypharmacy overdoses such as acetaminophen, cocaine, methamphetamines, kratom, xylazine, and metamizole
- Identify the challenges posed by adulterants in the acute management of polypharmacy fentanyl overdose, including the unpredictable nature of adulterant interactions and their impact on diagnostic and therapeutic approaches
- Develop evidence-based strategies and best practices for navigating the complexities of polypharmacy overdose to optimize patient care and treatment outcomes

Background

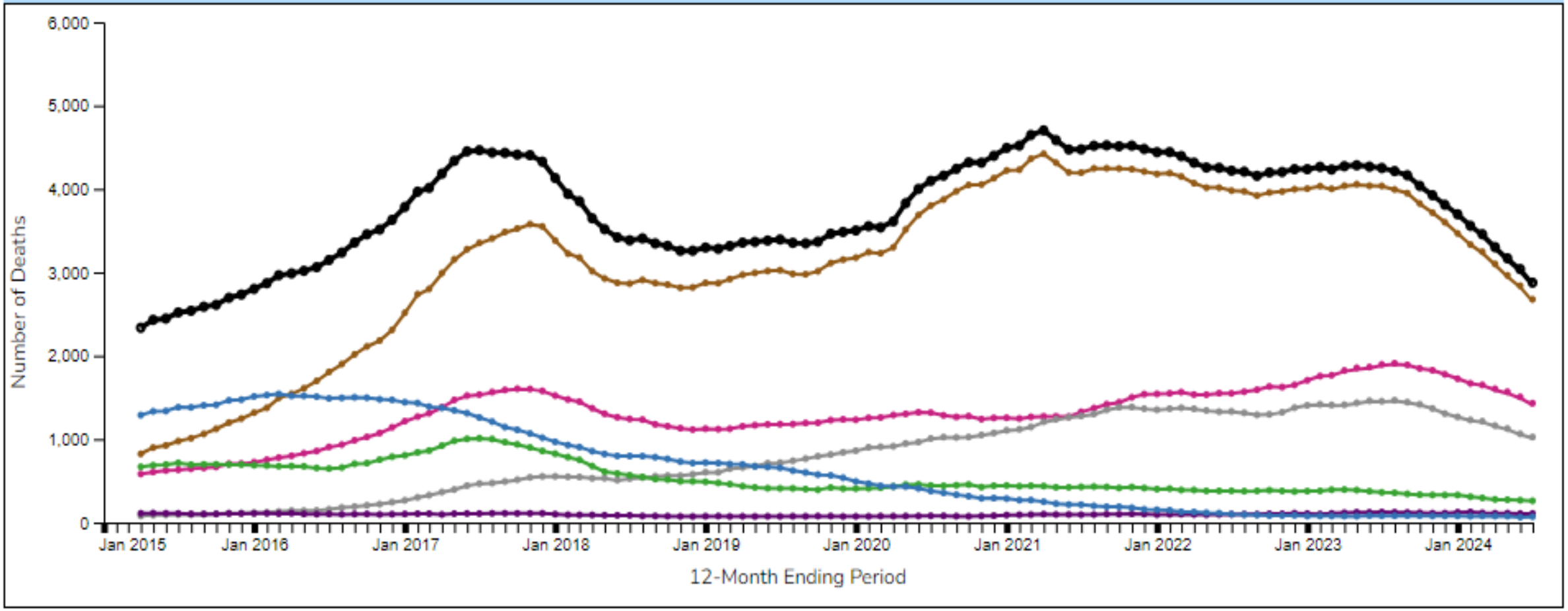
Figure 2. Opioid-Involved Overdose Deaths in the United States, by Opioid Type, 1999-2020



https://crsreports.congress.gov

Background

Figure 2. 12 Month-ending Provisional Number of Drug Overdose Deaths by Drug or Drug Class: Ohio



- Based on data from December 1, 2024

CDC. Vital Statistics Rapid Releaser (VSRR). Provisional Drug Overdose Data. (2024). https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm

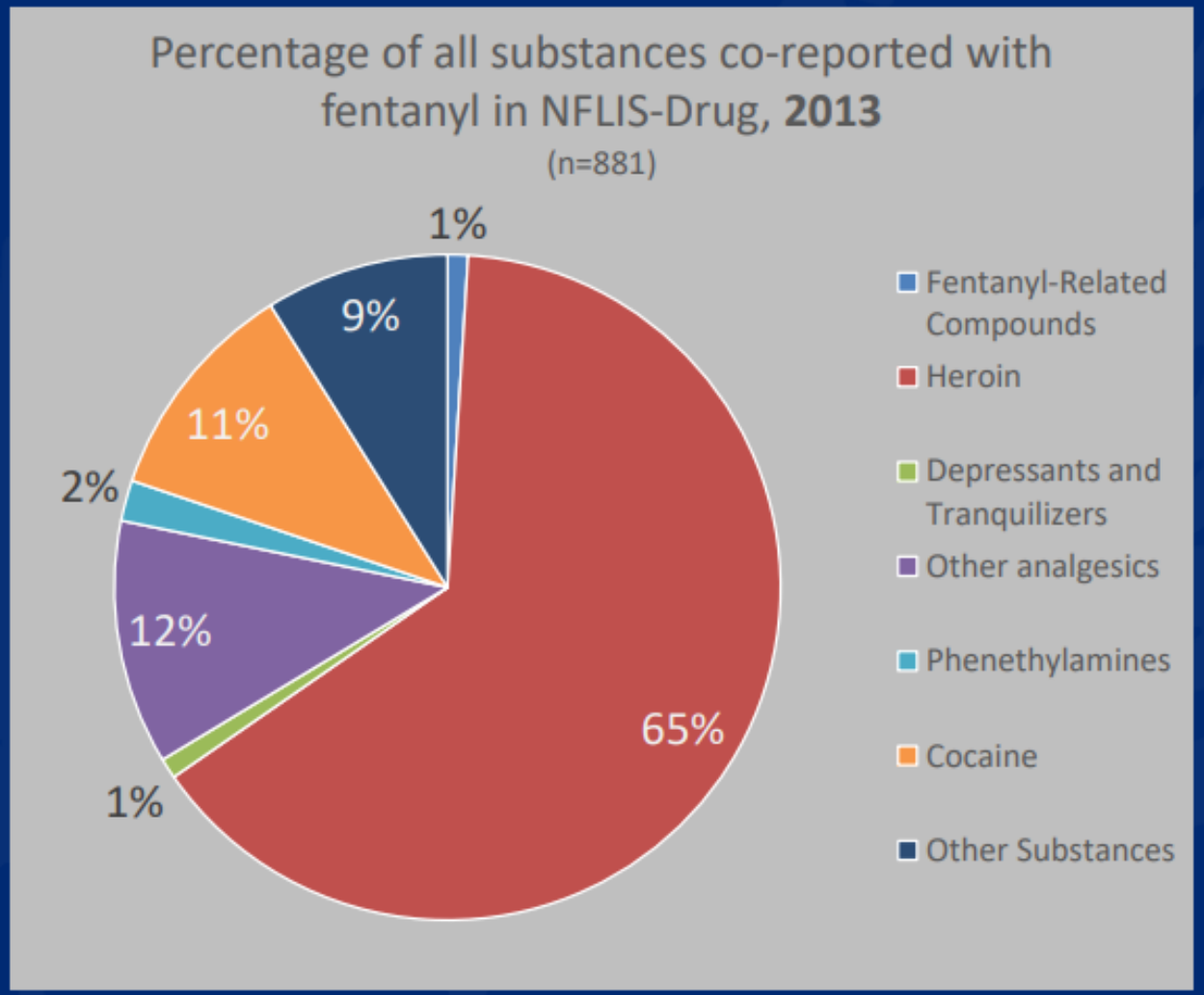
NFLIS

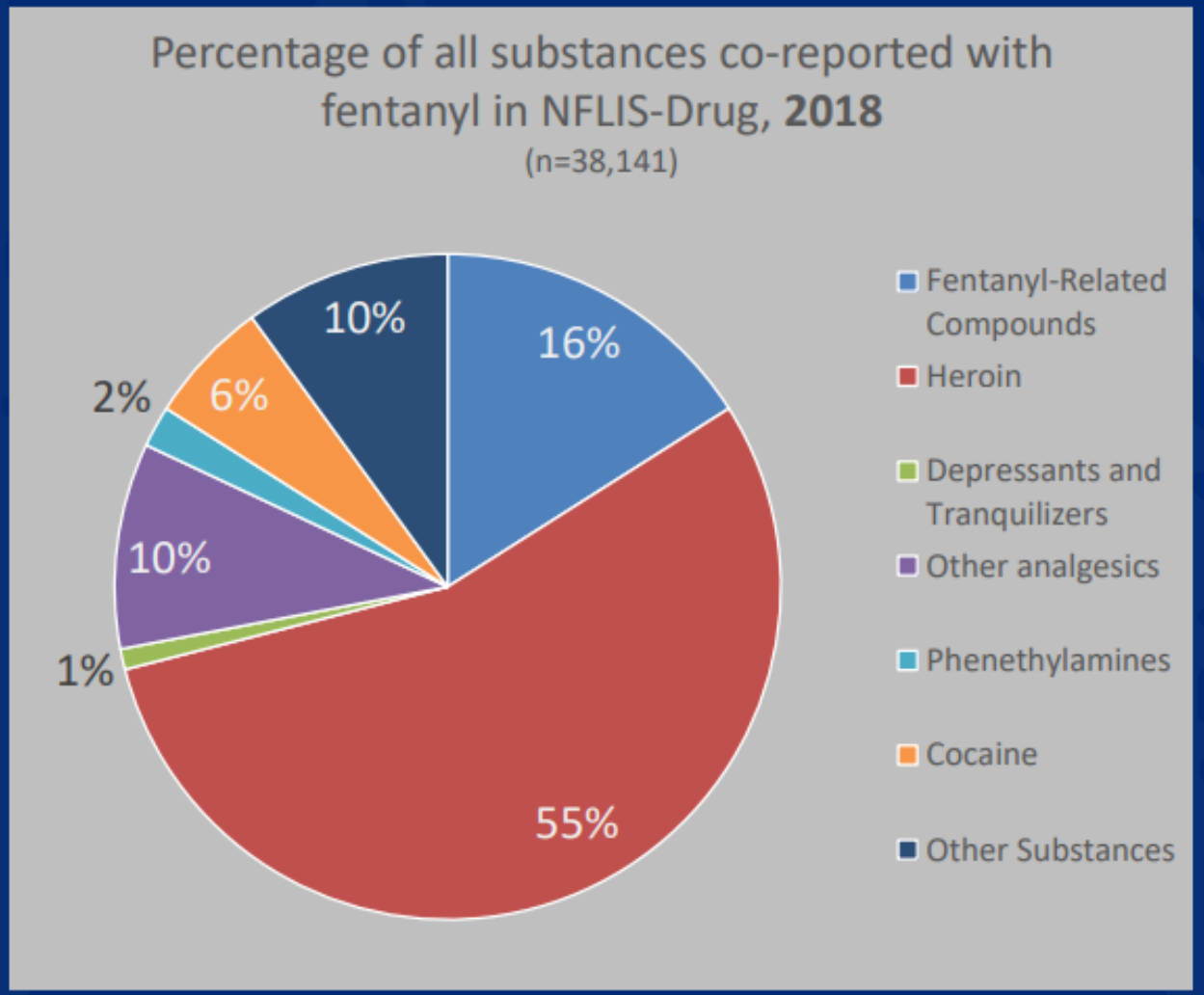
- National Forensic Laboratory Information System
- Systematically collects drug identification results from drug cases submitted to and analyzed by Federal, State, and local forensic laboratories
- Fentanyl has been in the top 5 drugs identified nationally since 2017

Diversion Control Division. (2023). NFLIS-Drug brief: Substances co-reported with fentanyl in NFLIS-Drug and DEA-Tox, January 2013– June 2023. U.S. Department of Justice, U.S. Drug Enforcement Administration.

NFLIS
U.S. DEPARTMENT OF JUSTICE
DRUG ENFORCEMENT ADMINISTRATION
DIVERSION CONTROL DIVISION
NATIONAL FORENSIC LABORATORY INFORMATION SYSTEM

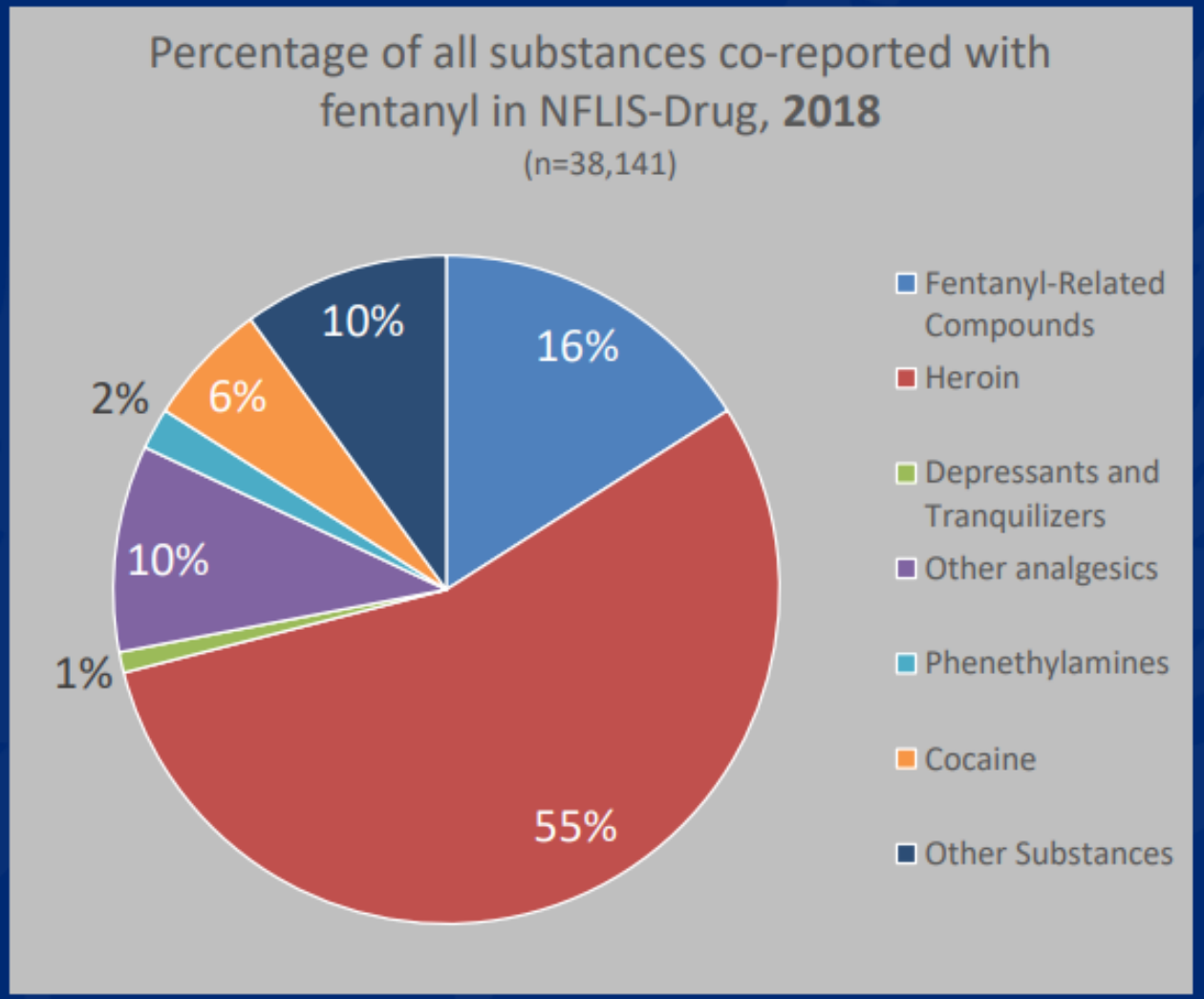
NFLIS

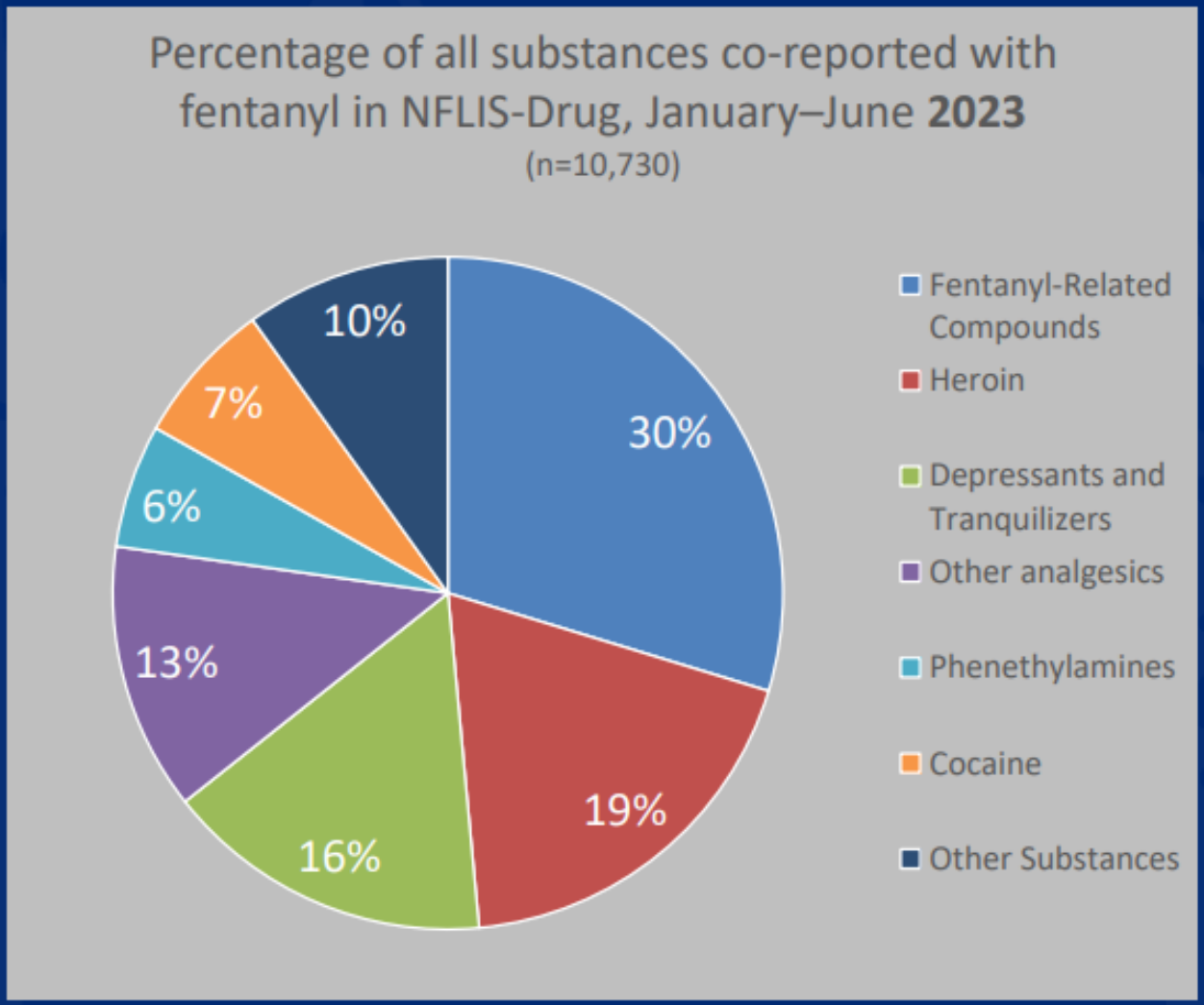




Diversion Control Division. (2023). NFLIS-Drug brief: Substances co-reported with fentanyl in NFLIS-Drug and DEA-Tox, January 2013– June 2023. U.S. Department of Justice, U.S. Drug Enforcement Administration.

NFLIS





Diversion Control Division. (2023). NFLIS-Drug brief: Substances co-reported with fentanyl in NFLIS-Drug and DEA-Tox, January 2013– June 2023. U.S. Department of Justice, U.S. Drug Enforcement Administration.

DEA TOX

- Surveillance program to detect new psychoactive substances in the United States
- Mass Spectrometry testing for cases where traditional drug screen has produced little or no options to explain patient symptomology
  - Also, Mass Spectrometry testing for drug seizures
- Email: DEATOX@DEA.GOV
  - Include brief description of the case (initial toxicology screen and history) and a request for testing
- The DEA will cover the full cost of testing the patient samples received

DEA TOX

DRUG ENFORCEMENT ADMINISTRATION

TOXICOLOGY TESTING PROGRAM

Diversion Control Division. DEA TOX Toxicology Testing Program. https://deadiversion.usdoj.gov/dea_tox/dea-tox.html. Accessed July 3, 2024.

Fentanyl still #1 Concern

- 2023 Drug Seizures analyzed by DEA Tox (n=45)
  - Fentanyl found in 62.2%
- 2023 Overdose Cases analyzed by DEA TOX (n=582)
  - Fentanyl found in 50.5%
  - Norfentanyl found in 38%
  - Fentanyl precursor 4-ANPP found in 28.5%
- Of the 505 fentanyl samples analyzed between Jan 2020 and June 6th, 2023, only 2 contained fentanyl alone

Diversion Control Division. DEA TOX Toxicology Testing Program. https://deadiversion.usdoj.gov/dea_tox/dea-tox.html. Accessed July 3, 2024.
Diversion Control Division. (2023). NFLIS-Drug brief: Substances co-reported with fentanyl in NFLIS-Drug and DEA-Tox, January 2013– June 2023. U.S.

Fentanyl still #1 Concern

- Blood levels of overdoses in both living and deceased is rising
  - Therapeutic range for analgesia = 0.6–3.0 ng/mL
  - Illicit ranges
    - 2006: 5-152ng/mL (n=23 all deceased)
    - 2016: 7.9-162ng/mL (n=18, 1 deceased)

Peng PW, Sandler AN. *Anesthesiology* 1999;90:576–99.; Thompson, JG., et al. *Journal of forensic sciences* 52.4 (2007): 978-981.; Sutter, ME., et al. *Academic emergency medicine* 24.1 (2017): 106-113.

Treating Fentanyl Overdose

- Opioid antagonist e.g. naloxone, naltrexone, nalmefene
- $T_{1/2}$ naloxone:
  - IM, IV, SUBQ: 30-90 minutes
  - Intranasal: ~1.1-2 hours
- Opioid Reversal Initial doses
  - 0.04-2mg IV q 2-3 minutes prn
- One study investigating high dose (>0.15mg) naloxone, found 17.4% of patients did not have adequate reversal after 3 doses of naloxone
  - Continuous Infusion: administer 2/3 of initial effective naloxone bolus per hour (usual dose 0.25-6.25mg/hr)
- Higher doses of naloxone can result in cardiac arrhythmias and pulmonary edema due to release of catecholamines

Naloxone in LexiDrugs. https://online.lexi.com. Accessed June 28, 2024.

Adulterated Fentanyl

- Sent through the mail from various countries (China, Netherlands, Hungary)
- Cut at the local level
  - Alter pharmacologic effects
  - Enhance potency
  - Bulk up drug quantity
- Fun fact: Some dealers are color-coding with plant food/fertilizer to *brand* their product


Bag of fentanyl pills

Matta N. (2023). https://americanaddictioncenters.org/ecstasy-abuse/adulterants-in-drugs-mdma
Diversion Control Division. (2022). NFLIS-Drug brief: Substances co-reported with fentanyl in NFLIS-Drug and DEA-Tox, January 2013– June 2022.

Representations of Fentanyl Forms in Ohio

Powder

Tablets

Chalk

Rocks

Black Tar

Gum

Fentanyl Forms Encountered Throughout North America

Alaska: Pellets

Image Credit: Anchorage Police Department

Halton, Canada: Popcorn

Image Credit: Halton Regional Police Twitter Photo

Calgary, Canada: Lego Blocks and Puzzle Pieces

Image Credit: Calgary Police

Arizona: Confetti Tablets

Image Credit: Arizona Department of Public Safety

Adulterants

Opioids not named Fentanyl

- Fentanyl analogues
  - E.g Beta-Hydroxy Fentanyl 9.3%
  - Clinical Presentation: same as any opioid

Vital Signs	Consciousness/neuropsychiatric symptoms	Other symptoms
Miosis Bradycardia Hypotension Bradypnea/Respiratory arrest Pulmonary edema Hypothermia	Coma CNS depression	Decreased gastric tract motility

- Nitazenes
  - E.g. Metonitazene 3.4%
  - Tenfold more potent than fentanyl
  - Clinical Presentation: Deceased

Adapted from Diversion Control Division. DEA TOX Toxicology Testing Program. https://deadiversion.usdoj.gov/dea_tox/dea-tox.html. Accessed July 3, 2
Bird HJ. Addict. Med. 17.5 (2023): 503-508.; Pergolizzi Jr J, et al. Cureus 15.6 (2023).; Montanari E, et al. Ther. Drug Monit. 44.4 (2022): 494-510.; Yates
Piotr MK. Novel Psychoactive Substances. Academic Press, 2022. 181-202.

Kratom

- Active ingredients: Mitragynine – stimulant, 7-hydroxymitragynine – sedative
- Low Dose (1-5g)
  - Stimulatory
  - Antidepressant-like effect associated with serotonin, norepinephrine and dopamine
- High Dose (>5g)
  - Sedative and analgesic due to activating opiate receptors
  - Can also counteract opioid withdrawal
- Clinical Presentation:

Vital Signs	Consciousness/neuropsychiatric symptoms	Other symptoms
Brady/tachycardia	Coma	Decreased gastric tract motility
Hypo/hypertension	CNS depression	Face flushing
Bradypnea/Respiratory arrest	Insomnia	Nausea/Vomiting
Pulmonary edema	Extreme fatigue	Diaphoresis
Hypo/hyperthermia	Psychosis	

Suhaimi FW, et al. Brain research bulletin. 2016 Sep 1;126:29-40.; Saingam D, et al. International Journal of Drug Policy. 2013 Jul 1;24(4):351-358
Yates, C. Novel Psychoactive Substances. Academic Press, 2022. 181-202.

Stimulants

- Cocaine
  - Directly inhibits the reuptake of DA, 5-HT, and NE
    - ↑ NE stimulates α1, α2, β1 and β2 with preferential α activity on the cardiac and peripheral vasculature
  - Sodium channel blockade (local anesthetic)
  - Increases glutamate and aspartate
- Amphetamines
  - Binds to DAT, NET, SERT transporters
  - Inhibits reuptake of neurotransmitters
  - Triggers efflux of intracellular neurotransmitters
- Clinical Presentation:

Vital Signs	Consciousness and neuropsychiatric symptoms	Other symptoms
Mydriasis	Agitation	Diaphoresis
Tachycardia	Anorexia	Tremor
Hypertension	Paranoia, psychosis, violent behavior (AMP>cocaine)	Hyperreflexia
Tachypnea		Hypertonia
Hyperthermia		Clonus
		Seizures

Yates C and Piotr MK. Novel Psychoactive Substances. Academic Press, 2022. 181-202.; Smollin CG, Hoffman RS. Cocaine. In: Goldfrank's Toxicologic Emergencies, 11e. New York, NY: McGraw-Hill Education; 2019.; Cruickshank CC, Dyer KR. *Addiction*. 2009;104:1085-1099.

Current Street Names		
	Crack Cocaine	Powdered Cocaine
Most Common	crack, hard, rock, work	coke, girl/white girl, powder, snow, soft
Other	butter, crackle, dope, hardball, hardware, ready rock, stones, straight drop	Becky, blow, booger sugar, Brittany, Christina Aguilera, fast, fish scales, fluff, nose candy, rich man's drug, ski slopes, snowball, Snow White, white, Whitney Houston, yay, yayo

Current Street Names for Methamphetamine	
General	breakfast/fast, chicken feed, crank, full throttle, go/go-go/go-fast, gorilla, green light, juice, King Kong, jib, meth, poor man's cocaine, slick, speed, tweak, zoom/zoom-zoom
Crystal	clear, Christina/Tina, crystal, glass, ice/ice cream/cream, Ice Boulevard, ice cubes/cubes, ice skating/skating, icicles, shards, shatter, window
Powdered	bathtub crank, shake/shake-and-bake

OSAM: osam-drug-trend-report-january-2024.pdf. Accessed 10/19/24

Cathinones

- AKA Bath Salts
- Can have a sympathomimetic effect and/or serotonin syndrome
  - Generally, has less ability to cross blood brain barrier
  - Water soluble
- Clinical Presentation:

Vital Signs	Consciousness and neuropsychiatric symptoms	Other symptoms
Mydriasis	Agitation	Diaphoresis
Tachycardia	Anorexia	Tremor
Hypertension	Confusion	Hyperreflexia
Tachypnea	Coma	Hypertonia
Hyperthermia	Euphoria	Clonus
	Increased concentration	Induced myoclonus
		Seizures
		Muscle rigidity
		Diarrhea

Yates, C and Piotr MK. Novel Psychoactive Substances. Academic Press, 2022. 181-202.
Baumann MH, et al. (2013). Neuropsychopharmacology, 38(4), 552-562.

Benzodiazepines

- Designer
  - Bromazolam 17.4%
    - Brominated version of alprazolam
- Prescription
  - Midazolam 9.1%
  - Alprazolam 7.7%
  - Lorazepam 6.7%

- Clinical Presentation:

Consciousness and neuropsychiatric symptoms	Other symptoms
Sedation	Anxiolysis
Hypnosis	Muscle relaxation
CNS depression	Ataxia
Euphoria	
Amnesia	
Seizures when discontinued	

Diversion Control Division. DEA TOX Toxicology Testing Program. https://deadiversion.usdoj.gov/dea_tox/dea-tox.html. Accessed July 3, 2024
Yates, C and Piotr MK. Novel Psychoactive Substances. Academic Press, 2022. 181-202.; Orsolini, Laura, et al. Current neuropharmacology 18.9 (2020): 809-837.

Current Street Names for Sedative-Hypnotics	
General	beans, benzos, forget-me-nots
Xanax®	*General:* X, xannie/xannies, xans *0.5 milligram:* peach/peaches *1 milligram:* blues, footballs/footies *2 milligrams:* bars/four bars/xan bars/xannie bars, buses/school bus/yellow school bus, green hulks/hulks, ladders, purple, sticks, wagon wheels, white, yellow
Klonopin®	forget-a-pins, Ks, K-cuts, K-pins/pins
Valium®	Vs, vacuums, V-cuts

OSAM: osam-drug-trend-report-january-2024.pdf. Accessed 10/19/24

Alpha 2 Agonists

- Xylazine 14.6%
- Inhibit the release of norepinephrine and epinephrine centrally
- Xylazine has been shown to impair the anticonvulsant properties of phenobarbital, phenytoin and diazepam in rats
  - Xylazine was abandoned as an antihypertensive due to excessive sedation compared to clonidine
- Clinical Presentation:

Vital Signs	Consciousness and neuropsychiatric symptoms	Other symptoms
Bradycardia Hypotension Decreased peripheral vascular resistance Bradypnea	Sedation Euphoria Amnesia	Severe necrotic skin ulcerations Abscesses Lesions Myocardial necrosis and fibrosis Muscle Relaxation Hyperglycemia

Diversion Control Division. DEA TOX Toxicology Testing Program. https://deadiversion.usdoj.gov/dea_tox/dea-tox.html. Accessed July 3, 2024
Gupta, Rahul, et al. (2023). NEJM 388.24: 2209-2212.; Ayub, Shahana, et al. Cureus 15.3 (2023).; Hoffman, Robert S. Clinical Toxicology 61.12 (2023): 1013-1016

Evaluation

Case

A middle-aged female is rolled out of a car in front of the ED entrance which then drives off. She is pale, tachycardic, agitated and confused. The patient is brought into the ED where upon she seizes, losses consciousness and stops breathing.

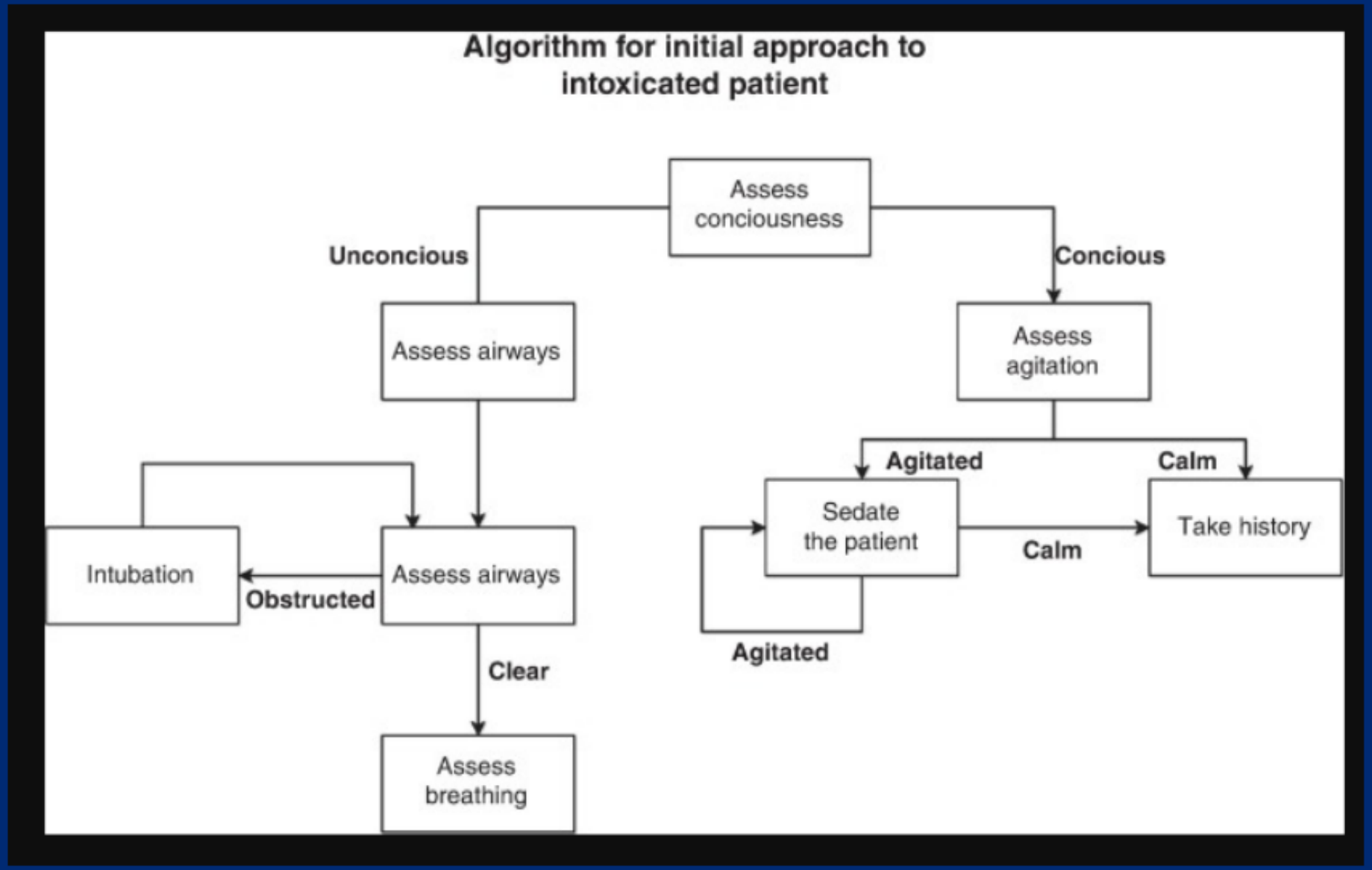
FIRST

- Manage the airway and stabilize the patient

THEN

- Figure out what is going on

Initial Approach



Taking a Recreational Drug History

- Record any information provided on the substances and circumstances of use by friends, co-users, witnesses, etc
  - Social media contents can provide details like time of use
- Who?
- What was the substance?
  - Was the effect similar to previous uses?
  - Was supplier the same?
  - Were the effects expected?
- How was substance used?
- When?
- Where?
- What is happening?
  - Symptoms reported and/or observed pre-hospital and at/after presentation to the Emergency Department
  - If "seizures" were witnessed, documentation of their characteristics
- Why?

Yates, C. Novel Psychoactive Substances. Academic Press, 2022. 181-202.

Evaluation Considerations

- Airway obstruction is a leading cause of death after toxic exposure
- Toxic effects of psychoactive substances may abruptly end resulting in sudden patient awakening
- Inadequate ventilation, oxygenation, and clinical deterioration are considered strong markers for intubation
- If a presentation "looks like" a known drug class, it is reasonable to treat it in the same way
- Airway patency should be confirmed if not secured
- Respiratory rate and breathing pattern assessed
- Lung auscultation for aspiration pneumonia, bronchospasm etc
- Circulatory status
- Vital signs

Yates, C. Novel Psychoactive Substances. Academic Press, 2022. 181-202.

Laboratory Values

- Blood glucose
- Arterial Blood Gases
- Complete Blood Count (Hg, Ht, PLT, WBC)
- Liver and kidney function tests (transaminases ALT/AST, GGT, alkaline phosphatase, total and unbound bilirubin, creatinine, and urea)
  - Serum osmolality if hyponatremia is present
  - Myoglobin (in urine) if signs of rhabdomyolysis
- Biochemical markers of muscular damage (creatine kinase)
- Electrolytes (sodium and potassium)
- Coagulation studies (activated partial thromboplastin time, prothrombin time, platelet count, D-dimer)
- ECG and cardiac markers (troponins and creatine kinase MB)

Yates, C. Novel Psychoactive Substances. Academic Press, 2022. 181-202.; Mas-Morey P. et al. (2012). J Pharm Pract 26(4):353–357

Cardiac and EKG Abnormalities

	Abnormalities	Substances
Rhythm	Tachycardia Bradycardia Supraventricular tachycardia Atrial fibrillation Ventricular tachycardia A-V Blockade Sinus tachycardia	Stimulants, Synthetic Cannabinoids, Antihistamines Synthetic Cannabinoids Stimulants, Synthetic Cannabinoids Stimulants, Synthetic Cannabinoids Stimulants, Synthetic Cannabinoids, Antihistamines Stimulants, Synthetic Cannabinoids Antihistamines
QRS	Wide QRS, R in aVR, S in I and aVL (sodium channel blockade)	not common in NPS, Antihistamines, Quinine
T wave	T wave inversion T wave decreased	Synthetic Cannabinoids Quinine
ST	ST segment depression, ST elevation	Stimulants, Synthetic Cannabinoids
QT	Prolonged QT interval and related dysrhythmia	Phenethylamines, Synthetic Cannabinoids, antihistamines, Quinine, Xylazine

Yates, C. Novel Psychoactive Substances. Academic Press, 2022. 181-20.1; Thomas, Simon HL. Medicine 40.3 (2012): 109-110.; Jaeger A. (2012). Medicine. Volume 40. Issue 3. pp 154-155; Hoffman, RS. "Clinical Toxicology 61.12 (2023): 1013-1016.

Urinalysis Example

Drug Screen	Analyte	Detection Limit	Detection Times
Benzodiazepine	oxazepam	200 ng/mL	Diazepam: 3-12 days Alprazolam: 1-3 days Flunitrazepam: 1-2 days Clonazepam: 3-8 days
Cocaine	benzoylecgonine	300 ng/mL	0.5-3 days
Amphetamine	amphetamine, methamphetamine	1000 ng/mL	48 hours
Cannabis	Δ-9-THC	50 ng/mL	Casual user: 1-2 days Moderate user: 5-10 days Chronic user: 10-28 days
Opiate	morphine	2000 ng/mL	1-3 days
Barbiturate	secobarbital	200 ng/mL	Secobarbital: 1-2 days Pentobarbital: 2-4 days Phenobarbital: 10-20 days
Ethanol	Only 1% to 2% is excreted unchanged in the urine	< 10 mg/dL	7-12 hours

Moeller KE, et al. *Mayo Clinic Proceedings*. Vol. 83. No. 1. Elsevier, 2008.
Moeller KE, et al. *Mayo Clinic Proceedings*. Vol. 92. No. 5. Elsevier, 2017.

Opioid Screening

Type	Examples	Positive on standard UDS for opiates?
Opiates	Morphine Codeine	Yes Yes
Semisynthetic Opioids	Heroin Hydrocodone Oxycodone Buprenorphine	Yes Maybe Maybe Unlikely
Fully Synthetic Opioids	Tramadol Fentanyl Methadone	No No No

Moeller KE, et al. *Mayo Clinic Proceedings*. Vol. 83. No. 1. Elsevier, 2008.
Moeller KE, et al. *Mayo Clinic Proceedings*. Vol. 92. No. 5. Elsevier, 2017.

Treatment

Opioids

Peri-Stabilization

- Manage airway (Intubation)
- Naloxone boluses
  - May consider continuous infusion
- Cardiovascular Stabilization
- Manage other clinical presentation
  - Seizures
  - Clonidine for anxiety, tachycardia
  - Analgesics
  - Nausea/Vomiting/Diarrhea

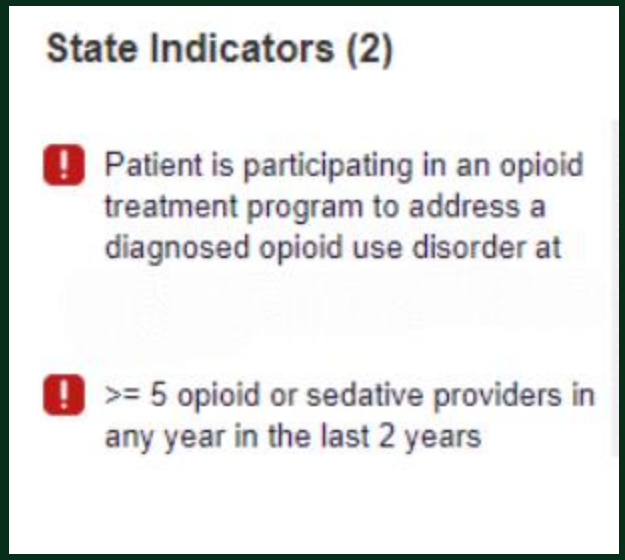
Post-Stabilization

- 80%-90% relapse without medications for Opioid Use Disorder (MOUD)
  - Methadone
  - Buprenorphine
  - MOUD should always be paired with cognitive behavioral therapy and counseling
- 50% reduction in death rate with MOUD
- All studies of tapering and discontinuation demonstrate very high rates of relapse
- Novel Regimens
  - IV buprenorphine protocol
  - Buprenorphine Long-acting Injectable SUBQ

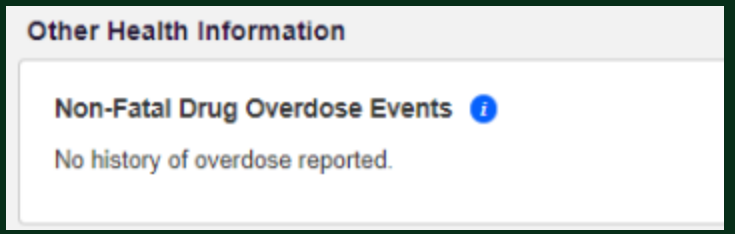
Parthvi, Rukma, et al. *Am. J. Ther.* 26.3 (2019): e380-e387.; Mancher M, Leshner AI, and NASEM. Medications for opioid use disorder save lives

Ohio Automated Prescription Reporting System Updates

- State indicator
  - Patient participating in Opioid treatment program (OTP)
  - Patinet consent
  - OTP program name, city and contact information
  - Medication not displayed



- Non-fatal overdose indicator
  - Reported from Ohio emergency departments on or after April 8th, 2024
  - Not reflected in the overdose risk score
  - Goal: providing information to improve and promote access to medication for MOUD



https://www.pharmacy.ohio.gov/

Stimulants + Cathinones

Life-Threatening Complications

- Airway, breathing, and circulation management
  - Benzodiazepines
  - Phentolamine 5-10 mg IV q 5-15 minutes PRN
  - Oxygen
  - Nitroglycerin for patients w/ HTN
- Fluid resuscitation
- Vigorous cooling measures
- Activated charcoal (oral amphetamines)
- Avoid physical restraints as they may cause aggressive behavior, heighten risk of hyperthermia and asphyxia

No life-threatening signs or symptoms

- Sedation and observation
  - Benzos ± antipsychotics

Smollin CG, & Hoffman RS. (2019). Cocaine. Goldfrank's Toxicologic Emergencies, 11e. McGraw-Hill.; Glasner-Edwards S, & Mooney LJ.

Benzodiazepines

- Monitor for seizures and protect airway
- Flumazenil will likely reverse illicit and prescription benzodiazepines
  - Increases risk for agitation
  - Increases risk for seizures
  - Increases adverse cardiovascular events

Yates, C and Piotr MK. Novel Psychoactive Substances. Academic Press, 2022. 181-202.

Alpha-2 Agonists

- Hypotension and diuresis may respond to just IV fluids
- Hypotension, bradycardia – vasopressers
  - Atropine has been used in case reports (xylazine)
- Skin Ulcers: wound care including debridement, silver sulfadiazine or antibacterial ointments
  - Skin grafts and/or amputation in severe cases
- Monitor for somnolence, lethargy
- Naloxone may help reverse respiratory depression

Gupta, Rahul, et al. (2023). *NEJM* 388.24: 2209-2212.

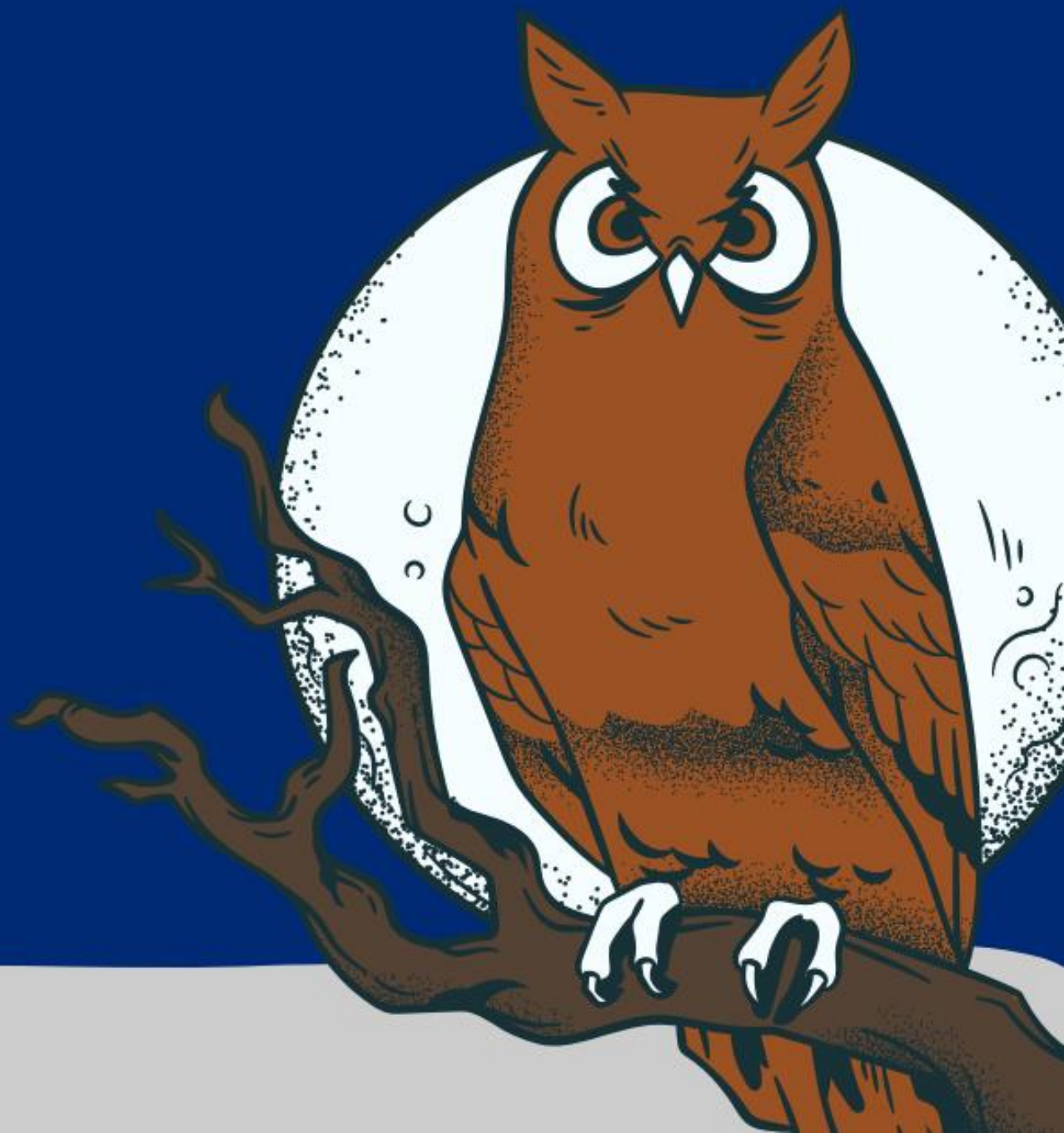
Harm Reduction

Harm Reduction

- Naloxone
  - Opioid antagonist
  - Safe and effective
  - Available prescription and over the counter
- Test Strips: Fentanyl and Xylazine
  - Not 100% accurate and will not detect non-fentanyl or non-xylazine drugs
  - Fentanyl
    - Detects the presence of about 12 analogues
- Syringe Service Program (SSP)
  - Offer comprehensive care and facilitate safer methods of drug use

Case

- Acute Management
- Pulmonary
- Cardiovascular
- Neurological
- Renal
- Hepatic
- Evaluation of Labs, EKG, Radiology
- Disposition



Summary/ Pearls

- Follow the Clinical Trail
- Patients may frequently have concomitant psychostimulants and depressants in the presence of respiratory suppressants and proconvulsant agents
- Duration of action of supportive interventions need to be balanced against duration of action of offending agents in order to not precipitate a later iatrogenic adverse effect
- If possible, use medications with short duration of action and repeat dosing
- Evaluate electrolytes in all patients
- Just because urine does not test positive, it doesn't mean a class of drug is not present

ABCs have not changed!

Drug Category: General Drug Reference

Oxycodone, Hydrocodone, Xanax™, Adderall™, Fentanyl, Ecstasy

Fentanyl, Heroin, Cocaine

Drug Dealer ("Plug")

Drug Price ("Ticket")

Potency:

Drug Effects:

Drug Category: Pills, Counterfeit Tablets

Oxycodone/Percocet™

Hydrocodone/Vicodin™

Alprazolam/Xanax™

Drug Images:

Example of Oxycodone 30mg

Example of Vicodin™

Example of Xanax™ 2mg

Example of Xanax™ 0.5mg

Example of Percocet™ 10mg

ONIC: https://dam.assets.ohio.gov/image/upload/onic.ohio.gov/onic_drug_emoji_bulletin.org. Accessed 10/19/24

Drug Category: Opioids (Fentanyl/Fentanyl Analogs/Fentanyl-Related Compounds, Heroin, Codeine)

Fentanyl / Fentanyl Analogs / Fentanyl-Related Compounds

Heroin

Codeine

Drug Images:

Example of Fentanyl

Example of Brown Powder Heroin, White Powder Heroin, and Black Tar Heroin

Example of Codeine

Drug Category: Methamphetamine, Crystal Methamphetamine

Methamphetamine

Crystal Methamphetamine

Drug Images:

Example of Methamphetamine

ONIC: https://dam.assets.ohio.gov/image/upload/onic.ohio.gov/onic_drug_emoji_bulletin.org. Accessed 10/19/24

Drug Category: Cocaine, Crack Cocaine

Cocaine

Crack Cocaine

Drug Images:

Example of
Powdered Cocaine

Example of
Crack Cocaine

Drug Category: Marijuana

Marijuana

Drug Images:

Example of Marijuana

ONIC: https://dam.assets.ohio.gov/image/upload/onic.ohio.gov/onic_drug_emoji_bulletin.org. Accessed 10/19/24

Drug Category: THC Products

THC Extract/Concentrate

THC Edibles

THC Vape Cartridges

Drug Images:

Example of THC Extract/Concentrate

Example of THC Edibles

Example of THC Vape Cartridges

Drug Category: Hallucinogens

Psilocybin Mushrooms

Ecstasy/MDMA

LSD/Acid

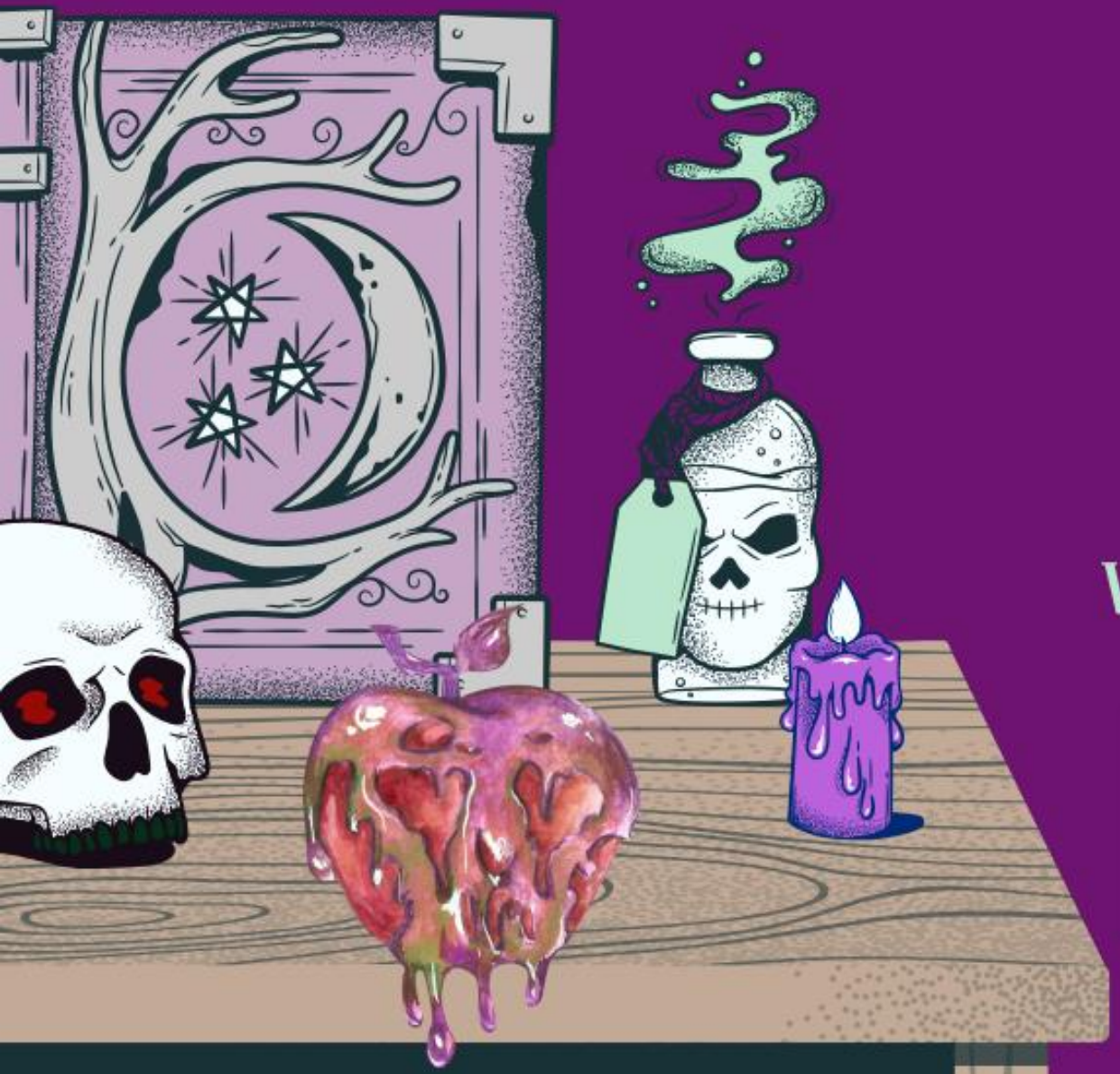
Drug Images:

Example of Psilocybin Mushrooms

Example of Ecstasy/MDMA

Example of LSD

ONIC: https://dam.assets.ohio.gov/image/upload/onic.ohio.gov/onic_drug_emoji_bulletin.org Accessed 10/19/24



Potent Poisoning:

WHEN SLEEPING BEAUTY GETS A BAD APPLE

Amy Durell PharmD, BCPS